

Regression test

Test run started 2025-08-27T01:53:02Z
Ashes version: 3.32.0

Rotor			
Load case set 1			
Load case	Time series	Error score	
Default	Power (aero)	0.000000	PASS
	Torque (aero)	0.000000	PASS
	Thrust (aero)	0.000000	PASS
	RPM	0.000000	PASS
	TSR	0.000000	PASS
	Representative demanded pitch angle	0.000000	PASS
	Power coef. (CP)	0.000000	PASS
	Thrust coef. (CT)	0.000000	PASS
	Torque coef. (CQ)	0.000000	PASS
	Tip speed	0.000000	PASS
	1P (one revolution)	0.000000	PASS
	nP (blade passing)	0.000000	PASS
	Azimuth angle	0.000000	PASS
	Rotation per timestep	0.000000	PASS
	Wind speed at hub, magnitude	0.000000	PASS
	Wind angle at hub	0.000000	PASS
	Yaw angle relative to forward	0.000000	PASS
	Yaw angle to reference direction	0.000000	PASS
	Yaw error	0.000000	PASS
	Torque about yaw axis	0.000000	PASS
	Power (electrical)	0.000000	PASS
	Torque	0.000000	PASS
	Torque on main shaft	0.000000	PASS
	Torque diff. on main shaft	0.000000	PASS
	RPM	0.000000	PASS
	Filtered RPM	0.000000	PASS
	Electricity production	0.000000	PASS
	Region	0.000000	PASS
	Demanded collective pitch angle	0.000000	PASS
	Cumulative demanded collective pitch angle	0.000000	PASS
	Demanded collective pitch angle rate	0.000000	PASS
	Set point	0.000000	PASS
	RPM error	0.000000	PASS

	P term	0.000000	PASS
	I term	0.000000	PASS
	D term	0.000000	PASS
	Gain scheduling factor	0.000000	PASS
	Root force (magnitude)	0.000000	PASS
	Root moment (magnitude)	0.000000	PASS
	Root moment (out-of-plane)	0.000000	PASS
	Root moment (in-plane)	0.000000	PASS
	Root moment about shaft	0.000000	PASS
	Pitch angle	0.000000	PASS
	Tip deflection (out-of-plane)	0.000000	PASS
	Tip deflection (in-plane)	0.000000	PASS
	Root torque	0.000000	PASS
	Position (x)	0.000000	PASS
	Position (y)	0.000000	PASS
	Position (z)	0.000000	PASS
	Displacement (u)	0.000000	PASS
	Displacement (v)	0.000000	PASS
	Displacement (w)	0.000000	PASS
	Displacement magnitude	0.000000	PASS
	Speed	0.000000	PASS
	Acceleration, magnitude	0.000000	PASS
	Rotational displacement (ru)	0.000000	PASS
	Rotational displacement (rv)	0.000000	PASS
	Rotational displacement (rw)	0.000000	PASS
	Rotational displacement magnitude	0.000000	PASS
	Rotational speed	0.000000	PASS
	Rotational acceleration mag	0.000000	PASS
	Displacement period	0.000000	PASS
	Displacement logarithmic decrement	0.000000	PASS
	Displacement damping ratio	0.000000	PASS
Blade type	Power (aero)	0.000000	PASS
	Torque (aero)	0.000000	PASS
	Thrust (aero)	0.000000	PASS
	RPM	0.000000	PASS
	TSR	0.000000	PASS
	Representative demanded pitch angle	0.000000	PASS
	Power coef. (CP)	0.000000	PASS
	Thrust coef. (CT)	0.000000	PASS
	Torque coef. (CQ)	0.000000	PASS
	Tip speed	0.000000	PASS
	1P (one revolution)	0.000000	PASS

	nP (blade passing)	0.000000	PASS
	Azimuth angle	0.000000	PASS
	Rotation per timestep	0.000000	PASS
	Wind speed at hub, magnitude	0.000000	PASS
	Wind angle at hub	0.000000	PASS
	Yaw angle relative to forward	0.000000	PASS
	Yaw angle to reference direction	0.000000	PASS
	Yaw error	0.000000	PASS
	Torque about yaw axis	0.000000	PASS
	Power (electrical)	0.000000	PASS
	Torque	0.000000	PASS
	Torque on main shaft	0.000000	PASS
	Torque diff. on main shaft	0.000000	PASS
	RPM	0.000000	PASS
	Filtered RPM	0.000000	PASS
	Electricity production	0.000000	PASS
	Region	0.000000	PASS
	Demanded collective pitch angle	0.000000	PASS
	Cumulative demanded collective pitch angle	0.000000	PASS
	Demanded collective pitch angle rate	0.000000	PASS
	Set point	0.000000	PASS
	RPM error	0.000000	PASS
	P term	0.000000	PASS
	I term	0.000000	PASS
	D term	0.000000	PASS
	Gain scheduling factor	0.000000	PASS
	Root force (magnitude)	0.000000	PASS
	Root moment (magnitude)	0.000000	PASS
	Root moment (out-of-plane)	0.000000	PASS
	Root moment (in-plane)	0.000000	PASS
	Root moment about shaft	0.000000	PASS
	Pitch angle	0.000000	PASS
	Tip deflection (out-of-plane)	0.000000	PASS
	Tip deflection (in-plane)	0.000000	PASS
	Root torque	0.000000	PASS
	Position (x)	0.000000	PASS
	Position (y)	0.000000	PASS
	Position (z)	0.000000	PASS
	Displacement (u)	0.000000	PASS
	Displacement (v)	0.000000	PASS
	Displacement (w)	0.000000	PASS
	Displacement magnitude	0.000000	PASS

	Speed	0.000000	PASS
	Acceleration, magnitude	0.000000	PASS
	Rotational displacement (ru)	0.000000	PASS
	Rotational displacement (rv)	0.000000	PASS
	Rotational displacement (rw)	0.000000	PASS
	Rotational displacement magnitude	0.000000	PASS
	Rotational speed	0.000000	PASS
	Rotational acceleration mag	0.000000	PASS
	Displacement period	0.000000	PASS
	Displacement logarithmic decrement	0.000000	PASS
	Displacement damping ratio	0.000000	PASS
Cone	Power (aero)	0.000000	PASS
	Torque (aero)	0.000000	PASS
	Thrust (aero)	0.000000	PASS
	RPM	0.000000	PASS
	TSR	0.000000	PASS
	Representative demanded pitch angle	0.000000	PASS
	Power coef. (CP)	0.000000	PASS
	Thrust coef. (CT)	0.000000	PASS
	Torque coef. (CQ)	0.000000	PASS
	Tip speed	0.000000	PASS
	1P (one revolution)	0.000000	PASS
	nP (blade passing)	0.000000	PASS
	Azimuth angle	0.000000	PASS
	Rotation per timestep	0.000000	PASS
	Wind speed at hub, magnitude	0.000000	PASS
	Wind angle at hub	0.000000	PASS
	Yaw angle relative to forward	0.000000	PASS
	Yaw angle to reference direction	0.000000	PASS
	Yaw error	0.000000	PASS
	Torque about yaw axis	0.000000	PASS
	Power (electrical)	0.000000	PASS
	Torque	0.000000	PASS
	Torque on main shaft	0.000000	PASS
	Torque diff. on main shaft	0.000000	PASS
	RPM	0.000000	PASS
	Filtered RPM	0.000000	PASS
	Electricity production	0.000000	PASS
	Region	0.000000	PASS
	Demanded collective pitch angle	0.000000	PASS
	Cumulative demanded collective pitch angle	0.000000	PASS
	Demanded collective pitch angle rate	0.000000	PASS

	Set point	0.000000	PASS
	RPM error	0.000000	PASS
	P term	0.000000	PASS
	I term	0.000000	PASS
	D term	0.000000	PASS
	Gain scheduling factor	0.000000	PASS
	Root force (magnitude)	0.000000	PASS
	Root moment (magnitude)	0.000000	PASS
	Root moment (out-of-plane)	0.000000	PASS
	Root moment (in-plane)	0.000000	PASS
	Root moment about shaft	0.000000	PASS
	Pitch angle	0.000000	PASS
	Tip deflection (out-of-plane)	0.000000	PASS
	Tip deflection (in-plane)	0.000000	PASS
	Root torque	0.000000	PASS
	Position (x)	0.000000	PASS
	Position (y)	0.000000	PASS
	Position (z)	0.000000	PASS
	Displacement (u)	0.000000	PASS
	Displacement (v)	0.000000	PASS
	Displacement (w)	0.000000	PASS
	Displacement magnitude	0.000000	PASS
	Speed	0.000000	PASS
	Acceleration, magnitude	0.000000	PASS
	Rotational displacement (ru)	0.000000	PASS
	Rotational displacement (rv)	0.000000	PASS
	Rotational displacement (rw)	0.000000	PASS
	Rotational displacement magnitude	0.000000	PASS
	Rotational speed	0.000000	PASS
	Rotational acceleration mag	0.000000	PASS
	Displacement period	0.000000	PASS
	Displacement logarithmic decrement	0.000000	PASS
	Displacement damping ratio	0.000000	PASS
Pitch rotational inertia	Power (aero)	0.000000	PASS
	Torque (aero)	0.000000	PASS
	Thrust (aero)	0.000000	PASS
	RPM	0.000000	PASS
	TSR	0.000000	PASS
	Representative demanded pitch angle	0.000000	PASS
	Power coef. (CP)	0.000000	PASS
	Thrust coef. (CT)	0.000000	PASS
	Torque coef. (CQ)	0.000000	PASS

	Tip speed	0.000000	PASS
	1P (one revolution)	0.000000	PASS
	nP (blade passing)	0.000000	PASS
	Azimuth angle	0.000000	PASS
	Rotation per timestep	0.000000	PASS
	Wind speed at hub, magnitude	0.000000	PASS
	Wind angle at hub	0.000000	PASS
	Yaw angle relative to forward	0.000000	PASS
	Yaw angle to reference direction	0.000000	PASS
	Yaw error	0.000000	PASS
	Torque about yaw axis	0.000000	PASS
	Power (electrical)	0.000000	PASS
	Torque	0.000000	PASS
	Torque on main shaft	0.000000	PASS
	Torque diff. on main shaft	0.000000	PASS
	RPM	0.000000	PASS
	Filtered RPM	0.000000	PASS
	Electricity production	0.000000	PASS
	Region	0.000000	PASS
	Demanded collective pitch angle	0.000000	PASS
	Cumulative demanded collective pitch angle	0.000000	PASS
	Demanded collective pitch angle rate	0.000000	PASS
	Set point	0.000000	PASS
	RPM error	0.000000	PASS
	P term	0.000000	PASS
	I term	0.000000	PASS
	D term	0.000000	PASS
	Gain scheduling factor	0.000000	PASS
	Root force (magnitude)	0.000000	PASS
	Root moment (magnitude)	0.000000	PASS
	Root moment (out-of-plane)	0.000000	PASS
	Root moment (in-plane)	0.000000	PASS
	Root moment about shaft	0.000000	PASS
	Pitch angle	0.000000	PASS
	Tip deflection (out-of-plane)	0.000000	PASS
	Tip deflection (in-plane)	0.000000	PASS
	Root torque	0.000000	PASS
	Position (x)	0.000000	PASS
	Position (y)	0.000000	PASS
	Position (z)	0.000000	PASS
	Displacement (u)	0.000000	PASS
	Displacement (v)	0.000000	PASS

	Displacement (w)	0.000000	PASS
	Displacement magnitude	0.000000	PASS
	Speed	0.000000	PASS
	Acceleration, magnitude	0.000000	PASS
	Rotational displacement (ru)	0.000000	PASS
	Rotational displacement (rv)	0.000000	PASS
	Rotational displacement (rw)	0.000000	PASS
	Rotational displacement magnitude	0.000000	PASS
	Rotational speed	0.000000	PASS
	Rotational acceleration mag	0.000000	PASS
	Displacement period	0.000000	PASS
	Displacement logarithmic decrement	0.000000	PASS
	Displacement damping ratio	0.000000	PASS
Pitch actuator mode	Power (aero)	0.000000	PASS
	Torque (aero)	0.000000	PASS
	Thrust (aero)	0.000000	PASS
	RPM	0.000000	PASS
	TSR	0.000000	PASS
	Representative demanded pitch angle	0.000000	PASS
	Power coef. (CP)	0.000000	PASS
	Thrust coef. (CT)	0.000000	PASS
	Torque coef. (CQ)	0.000000	PASS
	Tip speed	0.000000	PASS
	1P (one revolution)	0.000000	PASS
	nP (blade passing)	0.000000	PASS
	Azimuth angle	0.000000	PASS
	Rotation per timestep	0.000000	PASS
	Wind speed at hub, magnitude	0.000000	PASS
	Wind angle at hub	0.000000	PASS
	Yaw angle relative to forward	0.000000	PASS
	Yaw angle to reference direction	0.000000	PASS
	Yaw error	0.000000	PASS
	Torque about yaw axis	0.000000	PASS
	Power (electrical)	0.000000	PASS
	Torque	0.000000	PASS
	Torque on main shaft	0.000000	PASS
	Torque diff. on main shaft	0.000000	PASS
	RPM	0.000000	PASS
	Filtered RPM	0.000000	PASS
	Electricity production	0.000000	PASS
	Region	0.000000	PASS
	Demanded collective pitch angle	0.000000	PASS

	Cumulative demanded collective pitch angle	0.000000	PASS
	Demanded collective pitch angle rate	0.000000	PASS
	Set point	0.000000	PASS
	RPM error	0.000000	PASS
	P term	0.000000	PASS
	I term	0.000000	PASS
	D term	0.000000	PASS
	Gain scheduling factor	0.000000	PASS
	Root force (magnitude)	0.000000	PASS
	Root moment (magnitude)	0.000000	PASS
	Root moment (out-of-plane)	0.000000	PASS
	Root moment (in-plane)	0.000000	PASS
	Root moment about shaft	0.000000	PASS
	Pitch angle	0.000000	PASS
	Tip deflection (out-of-plane)	0.000000	PASS
	Tip deflection (in-plane)	0.000000	PASS
	Root torque	0.000000	PASS
	Position (x)	0.000000	PASS
	Position (y)	0.000000	PASS
	Position (z)	0.000000	PASS
	Displacement (u)	0.000000	PASS
	Displacement (v)	0.000000	PASS
	Displacement (w)	0.000000	PASS
	Displacement magnitude	0.000000	PASS
	Speed	0.000000	PASS
	Acceleration, magnitude	0.000000	PASS
	Rotational displacement (ru)	0.000000	PASS
	Rotational displacement (rv)	0.000000	PASS
	Rotational displacement (rw)	0.000000	PASS
	Rotational displacement magnitude	0.000000	PASS
	Rotational speed	0.000000	PASS
	Rotational acceleration mag	0.000000	PASS
	Displacement period	0.000000	PASS
	Displacement logarithmic decrement	0.000000	PASS
	Displacement damping ratio	0.000000	PASS
Ref actuator torque	Power (aero)	0.000000	PASS
	Torque (aero)	0.000000	PASS
	Thrust (aero)	0.000000	PASS
	RPM	0.000000	PASS
	TSR	0.000000	PASS
	Representative demanded pitch angle	0.000000	PASS
	Power coef. (CP)	0.000000	PASS

	Thrust coef. (CT)	0.000000	PASS
	Torque coef. (CQ)	0.000000	PASS
	Tip speed	0.000000	PASS
	1P (one revolution)	0.000000	PASS
	nP (blade passing)	0.000000	PASS
	Azimuth angle	0.000000	PASS
	Rotation per timestep	0.000000	PASS
	Wind speed at hub, magnitude	0.000000	PASS
	Wind angle at hub	0.000000	PASS
	Yaw angle relative to forward	0.000000	PASS
	Yaw angle to reference direction	0.000000	PASS
	Yaw error	0.000000	PASS
	Torque about yaw axis	0.000000	PASS
	Power (electrical)	0.000000	PASS
	Torque	0.000000	PASS
	Torque on main shaft	0.000000	PASS
	Torque diff. on main shaft	0.000000	PASS
	RPM	0.000000	PASS
	Filtered RPM	0.000000	PASS
	Electricity production	0.000000	PASS
	Region	0.000000	PASS
	Demanded collective pitch angle	0.000000	PASS
	Cumulative demanded collective pitch angle	0.000000	PASS
	Demanded collective pitch angle rate	0.000000	PASS
	Set point	0.000000	PASS
	RPM error	0.000000	PASS
	P term	0.000000	PASS
	I term	0.000000	PASS
	D term	0.000000	PASS
	Gain scheduling factor	0.000000	PASS
	Root force (magnitude)	0.000000	PASS
	Root moment (magnitude)	0.000000	PASS
	Root moment (out-of-plane)	0.000000	PASS
	Root moment (in-plane)	0.000000	PASS
	Root moment about shaft	0.000000	PASS
	Pitch angle	0.000000	PASS
	Tip deflection (out-of-plane)	0.000000	PASS
	Tip deflection (in-plane)	0.000000	PASS
	Root torque	0.000000	PASS
	Position (x)	0.000000	PASS
	Position (y)	0.000000	PASS
	Position (z)	0.000000	PASS

	Displacement (u)	0.000000	PASS
	Displacement (v)	0.000000	PASS
	Displacement (w)	0.000000	PASS
	Displacement magnitude	0.000000	PASS
	Speed	0.000000	PASS
	Acceleration, magnitude	0.000000	PASS
	Rotational displacement (ru)	0.000000	PASS
	Rotational displacement (rv)	0.000000	PASS
	Rotational displacement (rw)	0.000000	PASS
	Rotational displacement magnitude	0.000000	PASS
	Rotational speed	0.000000	PASS
	Rotational acceleration mag	0.000000	PASS
	Displacement period	0.000000	PASS
	Displacement logarithmic decrement	0.000000	PASS
	Displacement damping ratio	0.000000	PASS
KP	Power (aero)	0.000000	PASS
	Torque (aero)	0.000000	PASS
	Thrust (aero)	0.000000	PASS
	RPM	0.000000	PASS
	TSR	0.000000	PASS
	Representative demanded pitch angle	0.000000	PASS
	Power coef. (CP)	0.000000	PASS
	Thrust coef. (CT)	0.000000	PASS
	Torque coef. (CQ)	0.000000	PASS
	Tip speed	0.000000	PASS
	1P (one revolution)	0.000000	PASS
	nP (blade passing)	0.000000	PASS
	Azimuth angle	0.000000	PASS
	Rotation per timestep	0.000000	PASS
	Wind speed at hub, magnitude	0.000000	PASS
	Wind angle at hub	0.000000	PASS
	Yaw angle relative to forward	0.000000	PASS
	Yaw angle to reference direction	0.000000	PASS
	Yaw error	0.000000	PASS
	Torque about yaw axis	0.000000	PASS
	Power (electrical)	0.000000	PASS
	Torque	0.000000	PASS
	Torque on main shaft	0.000000	PASS
	Torque diff. on main shaft	0.000000	PASS
	RPM	0.000000	PASS
	Filtered RPM	0.000000	PASS
	Electricity production	0.000000	PASS

	Region	0.000000	PASS
	Demanded collective pitch angle	0.000000	PASS
	Cumulative demanded collective pitch angle	0.000000	PASS
	Demanded collective pitch angle rate	0.000000	PASS
	Set point	0.000000	PASS
	RPM error	0.000000	PASS
	P term	0.000000	PASS
	I term	0.000000	PASS
	D term	0.000000	PASS
	Gain scheduling factor	0.000000	PASS
	Root force (magnitude)	0.000000	PASS
	Root moment (magnitude)	0.000000	PASS
	Root moment (out-of-plane)	0.000000	PASS
	Root moment (in-plane)	0.000000	PASS
	Root moment about shaft	0.000000	PASS
	Pitch angle	0.000000	PASS
	Tip deflection (out-of-plane)	0.000000	PASS
	Tip deflection (in-plane)	0.000000	PASS
	Root torque	0.000000	PASS
	Position (x)	0.000000	PASS
	Position (y)	0.000000	PASS
	Position (z)	0.000000	PASS
	Displacement (u)	0.000000	PASS
	Displacement (v)	0.000000	PASS
	Displacement (w)	0.000000	PASS
	Displacement magnitude	0.000000	PASS
	Speed	0.000000	PASS
	Acceleration, magnitude	0.000000	PASS
	Rotational displacement (ru)	0.000000	PASS
	Rotational displacement (rv)	0.000000	PASS
	Rotational displacement (rw)	0.000000	PASS
	Rotational displacement magnitude	0.000000	PASS
	Rotational speed	0.000000	PASS
	Rotational acceleration mag	0.000000	PASS
	Displacement period	0.000000	PASS
	Displacement logarithmic decrement	0.000000	PASS
	Displacement damping ratio	0.000000	PASS
KI	Power (aero)	0.000000	PASS
	Torque (aero)	0.000000	PASS
	Thrust (aero)	0.000000	PASS
	RPM	0.000000	PASS
	TSR	0.000000	PASS

	Representative demanded pitch angle	0.000000	PASS
	Power coef. (CP)	0.000000	PASS
	Thrust coef. (CT)	0.000000	PASS
	Torque coef. (CQ)	0.000000	PASS
	Tip speed	0.000000	PASS
	1P (one revolution)	0.000000	PASS
	nP (blade passing)	0.000000	PASS
	Azimuth angle	0.000000	PASS
	Rotation per timestep	0.000000	PASS
	Wind speed at hub, magnitude	0.000000	PASS
	Wind angle at hub	0.000000	PASS
	Yaw angle relative to forward	0.000000	PASS
	Yaw angle to reference direction	0.000000	PASS
	Yaw error	0.000000	PASS
	Torque about yaw axis	0.000000	PASS
	Power (electrical)	0.000000	PASS
	Torque	0.000000	PASS
	Torque on main shaft	0.000000	PASS
	Torque diff. on main shaft	0.000000	PASS
	RPM	0.000000	PASS
	Filtered RPM	0.000000	PASS
	Electricity production	0.000000	PASS
	Region	0.000000	PASS
	Demanded collective pitch angle	0.000000	PASS
	Cumulative demanded collective pitch angle	0.000000	PASS
	Demanded collective pitch angle rate	0.000000	PASS
	Set point	0.000000	PASS
	RPM error	0.000000	PASS
	P term	0.000000	PASS
	I term	0.000000	PASS
	D term	0.000000	PASS
	Gain scheduling factor	0.000000	PASS
	Root force (magnitude)	0.000000	PASS
	Root moment (magnitude)	0.000000	PASS
	Root moment (out-of-plane)	0.000000	PASS
	Root moment (in-plane)	0.000000	PASS
	Root moment about shaft	0.000000	PASS
	Pitch angle	0.000000	PASS
	Tip deflection (out-of-plane)	0.000000	PASS
	Tip deflection (in-plane)	0.000000	PASS
	Root torque	0.000000	PASS
	Position (x)	0.000000	PASS

	Position (y)	0.000000	PASS
	Position (z)	0.000000	PASS
	Displacement (u)	0.000000	PASS
	Displacement (v)	0.000000	PASS
	Displacement (w)	0.000000	PASS
	Displacement magnitude	0.000000	PASS
	Speed	0.000000	PASS
	Acceleration, magnitude	0.000000	PASS
	Rotational displacement (ru)	0.000000	PASS
	Rotational displacement (rv)	0.000000	PASS
	Rotational displacement (rw)	0.000000	PASS
	Rotational displacement magnitude	0.000000	PASS
	Rotational speed	0.000000	PASS
	Rotational acceleration mag	0.000000	PASS
	Displacement period	0.000000	PASS
	Displacement logarithmic decrement	0.000000	PASS
	Displacement damping ratio	0.000000	PASS
KD	Power (aero)	0.000000	PASS
	Torque (aero)	0.000000	PASS
	Thrust (aero)	0.000000	PASS
	RPM	0.000000	PASS
	TSR	0.000000	PASS
	Representative demanded pitch angle	0.000000	PASS
	Power coef. (CP)	0.000000	PASS
	Thrust coef. (CT)	0.000000	PASS
	Torque coef. (CQ)	0.000000	PASS
	Tip speed	0.000000	PASS
	1P (one revolution)	0.000000	PASS
	nP (blade passing)	0.000000	PASS
	Azimuth angle	0.000000	PASS
	Rotation per timestep	0.000000	PASS
	Wind speed at hub, magnitude	0.000000	PASS
	Wind angle at hub	0.000000	PASS
	Yaw angle relative to forward	0.000000	PASS
	Yaw angle to reference direction	0.000000	PASS
	Yaw error	0.000000	PASS
	Torque about yaw axis	0.000000	PASS
	Power (electrical)	0.000000	PASS
	Torque	0.000000	PASS
	Torque on main shaft	0.000000	PASS
	Torque diff. on main shaft	0.000000	PASS
	RPM	0.000000	PASS

	Filtered RPM	0.000000	PASS
	Electricity production	0.000000	PASS
	Region	0.000000	PASS
	Demanded collective pitch angle	0.000000	PASS
	Cumulative demanded collective pitch angle	0.000000	PASS
	Demanded collective pitch angle rate	0.000000	PASS
	Set point	0.000000	PASS
	RPM error	0.000000	PASS
	P term	0.000000	PASS
	I term	0.000000	PASS
	D term	0.000000	PASS
	Gain scheduling factor	0.000000	PASS
	Root force (magnitude)	0.000000	PASS
	Root moment (magnitude)	0.000000	PASS
	Root moment (out-of-plane)	0.000000	PASS
	Root moment (in-plane)	0.000000	PASS
	Root moment about shaft	0.000000	PASS
	Pitch angle	0.000000	PASS
	Tip deflection (out-of-plane)	0.000000	PASS
	Tip deflection (in-plane)	0.000000	PASS
	Root torque	0.000000	PASS
	Position (x)	0.000000	PASS
	Position (y)	0.000000	PASS
	Position (z)	0.000000	PASS
	Displacement (u)	0.000000	PASS
	Displacement (v)	0.000000	PASS
	Displacement (w)	0.000000	PASS
	Displacement magnitude	0.000000	PASS
	Speed	0.000000	PASS
	Acceleration, magnitude	0.000000	PASS
	Rotational displacement (ru)	0.000000	PASS
	Rotational displacement (rv)	0.000000	PASS
	Rotational displacement (rw)	0.000000	PASS
	Rotational displacement magnitude	0.000000	PASS
	Rotational speed	0.000000	PASS
	Rotational acceleration mag	0.000000	PASS
	Displacement period	0.000000	PASS
	Displacement logarithmic decrement	0.000000	PASS
	Displacement damping ratio	0.000000	PASS
Reduction factor for structural data	Power (aero)	0.000000	PASS
	Torque (aero)	0.000000	PASS
	Thrust (aero)	0.000000	PASS

	RPM	0.000000	PASS
	TSR	0.000000	PASS
	Representative demanded pitch angle	0.000000	PASS
	Power coef. (CP)	0.000000	PASS
	Thrust coef. (CT)	0.000000	PASS
	Torque coef. (CQ)	0.000000	PASS
	Tip speed	0.000000	PASS
	1P (one revolution)	0.000000	PASS
	nP (blade passing)	0.000000	PASS
	Azimuth angle	0.000000	PASS
	Rotation per timestep	0.000000	PASS
	Wind speed at hub, magnitude	0.000000	PASS
	Wind angle at hub	0.000000	PASS
	Yaw angle relative to forward	0.000000	PASS
	Yaw angle to reference direction	0.000000	PASS
	Yaw error	0.000000	PASS
	Torque about yaw axis	0.000000	PASS
	Power (electrical)	0.000000	PASS
	Torque	0.000000	PASS
	Torque on main shaft	0.000000	PASS
	Torque diff. on main shaft	0.000000	PASS
	RPM	0.000000	PASS
	Filtered RPM	0.000000	PASS
	Electricity production	0.000000	PASS
	Region	0.000000	PASS
	Demanded collective pitch angle	0.000000	PASS
	Cumulative demanded collective pitch angle	0.000000	PASS
	Demanded collective pitch angle rate	0.000000	PASS
	Set point	0.000000	PASS
	RPM error	0.000000	PASS
	P term	0.000000	PASS
	I term	0.000000	PASS
	D term	0.000000	PASS
	Gain scheduling factor	0.000000	PASS
	Root force (magnitude)	0.000000	PASS
	Root moment (magnitude)	0.000000	PASS
	Root moment (out-of-plane)	0.000000	PASS
	Root moment (in-plane)	0.000000	PASS
	Root moment about shaft	0.000000	PASS
	Pitch angle	0.000000	PASS
	Tip deflection (out-of-plane)	0.000000	PASS
	Tip deflection (in-plane)	0.000000	PASS

	Root torque	0.000000	PASS
	Position (x)	0.000000	PASS
	Position (y)	0.000000	PASS
	Position (z)	0.000000	PASS
	Displacement (u)	0.000000	PASS
	Displacement (v)	0.000000	PASS
	Displacement (w)	0.000000	PASS
	Displacement magnitude	0.000000	PASS
	Speed	0.000000	PASS
	Acceleration, magnitude	0.000000	PASS
	Rotational displacement (ru)	0.000000	PASS
	Rotational displacement (rv)	0.000000	PASS
	Rotational displacement (rw)	0.000000	PASS
	Rotational displacement magnitude	0.000000	PASS
	Rotational speed	0.000000	PASS
	Rotational acceleration mag	0.000000	PASS
	Displacement period	0.000000	PASS
	Displacement logarithmic decrement	0.000000	PASS
	Displacement damping ratio	0.000000	PASS
Structural scale factor	Power (aero)	0.000000	PASS
	Torque (aero)	0.000000	PASS
	Thrust (aero)	0.000000	PASS
	RPM	0.000000	PASS
	TSR	0.000000	PASS
	Representative demanded pitch angle	0.000000	PASS
	Power coef. (CP)	0.000000	PASS
	Thrust coef. (CT)	0.000000	PASS
	Torque coef. (CQ)	0.000000	PASS
	Tip speed	0.000000	PASS
	1P (one revolution)	0.000000	PASS
	nP (blade passing)	0.000000	PASS
	Azimuth angle	0.000000	PASS
	Rotation per timestep	0.000000	PASS
	Wind speed at hub, magnitude	0.000000	PASS
	Wind angle at hub	0.000000	PASS
	Yaw angle relative to forward	0.000000	PASS
	Yaw angle to reference direction	0.000000	PASS
	Yaw error	0.000000	PASS
	Torque about yaw axis	0.000000	PASS
	Power (electrical)	0.000000	PASS
	Torque	0.000000	PASS
	Torque on main shaft	0.000000	PASS

	Torque diff. on main shaft	0.000000	PASS
	RPM	0.000000	PASS
	Filtered RPM	0.000000	PASS
	Electricity production	0.000000	PASS
	Region	0.000000	PASS
	Demanded collective pitch angle	0.000000	PASS
	Cumulative demanded collective pitch angle	0.000000	PASS
	Demanded collective pitch angle rate	0.000000	PASS
	Set point	0.000000	PASS
	RPM error	0.000000	PASS
	P term	0.000000	PASS
	I term	0.000000	PASS
	D term	0.000000	PASS
	Gain scheduling factor	0.000000	PASS
	Root force (magnitude)	0.000000	PASS
	Root moment (magnitude)	0.000000	PASS
	Root moment (out-of-plane)	0.000000	PASS
	Root moment (in-plane)	0.000000	PASS
	Root moment about shaft	0.000000	PASS
	Pitch angle	0.000000	PASS
	Tip deflection (out-of-plane)	0.000000	PASS
	Tip deflection (in-plane)	0.000000	PASS
	Root torque	0.000000	PASS
	Position (x)	0.000000	PASS
	Position (y)	0.000000	PASS
	Position (z)	0.000000	PASS
	Displacement (u)	0.000000	PASS
	Displacement (v)	0.000000	PASS
	Displacement (w)	0.000000	PASS
	Displacement magnitude	0.000000	PASS
	Speed	0.000000	PASS
	Acceleration, magnitude	0.000000	PASS
	Rotational displacement (ru)	0.000000	PASS
	Rotational displacement (rv)	0.000000	PASS
	Rotational displacement (rw)	0.000000	PASS
	Rotational displacement magnitude	0.000000	PASS
	Rotational speed	0.000000	PASS
	Rotational acceleration mag	0.000000	PASS
	Displacement period	0.000000	PASS
	Displacement logarithmic decrement	0.000000	PASS
	Displacement damping ratio	0.000000	PASS
Torsional Inertia factor	Power (aero)	0.000000	PASS

	Torque (aero)	0.000000	PASS
	Thrust (aero)	0.000000	PASS
	RPM	0.000000	PASS
	TSR	0.000000	PASS
	Representative demanded pitch angle	0.000000	PASS
	Power coef. (CP)	0.000000	PASS
	Thrust coef. (CT)	0.000000	PASS
	Torque coef. (CQ)	0.000000	PASS
	Tip speed	0.000000	PASS
	1P (one revolution)	0.000000	PASS
	nP (blade passing)	0.000000	PASS
	Azimuth angle	0.000000	PASS
	Rotation per timestep	0.000000	PASS
	Wind speed at hub, magnitude	0.000000	PASS
	Wind angle at hub	0.000000	PASS
	Yaw angle relative to forward	0.000000	PASS
	Yaw angle to reference direction	0.000000	PASS
	Yaw error	0.000000	PASS
	Torque about yaw axis	0.000000	PASS
	Power (electrical)	0.000000	PASS
	Torque	0.000000	PASS
	Torque on main shaft	0.000000	PASS
	Torque diff. on main shaft	0.000000	PASS
	RPM	0.000000	PASS
	Filtered RPM	0.000000	PASS
	Electricity production	0.000000	PASS
	Region	0.000000	PASS
	Demanded collective pitch angle	0.000000	PASS
	Cumulative demanded collective pitch angle	0.000000	PASS
	Demanded collective pitch angle rate	0.000000	PASS
	Set point	0.000000	PASS
	RPM error	0.000000	PASS
	P term	0.000000	PASS
	I term	0.000000	PASS
	D term	0.000000	PASS
	Gain scheduling factor	0.000000	PASS
	Root force (magnitude)	0.000000	PASS
	Root moment (magnitude)	0.000000	PASS
	Root moment (out-of-plane)	0.000000	PASS
	Root moment (in-plane)	0.000000	PASS
	Root moment about shaft	0.000000	PASS
	Pitch angle	0.000000	PASS

	Tip deflection (out-of-plane)	0.000000	PASS
	Tip deflection (in-plane)	0.000000	PASS
	Root torque	0.000000	PASS
	Position (x)	0.000000	PASS
	Position (y)	0.000000	PASS
	Position (z)	0.000000	PASS
	Displacement (u)	0.000000	PASS
	Displacement (v)	0.000000	PASS
	Displacement (w)	0.000000	PASS
	Displacement magnitude	0.000000	PASS
	Speed	0.000000	PASS
	Acceleration, magnitude	0.000000	PASS
	Rotational displacement (ru)	0.000000	PASS
	Rotational displacement (rv)	0.000000	PASS
	Rotational displacement (rw)	0.000000	PASS
	Rotational displacement magnitude	0.000000	PASS
	Rotational speed	0.000000	PASS
	Rotational acceleration mag	0.000000	PASS
	Displacement period	0.000000	PASS
	Displacement logarithmic decrement	0.000000	PASS
	Displacement damping ratio	0.000000	PASS
Target Cp	Power (aero)	0.000000	PASS
	Torque (aero)	0.000000	PASS
	Thrust (aero)	0.000000	PASS
	RPM	0.000000	PASS
	TSR	0.000000	PASS
	Representative demanded pitch angle	0.000000	PASS
	Power coef. (CP)	0.000000	PASS
	Thrust coef. (CT)	0.000000	PASS
	Torque coef. (CQ)	0.000000	PASS
	Tip speed	0.000000	PASS
	1P (one revolution)	0.000000	PASS
	nP (blade passing)	0.000000	PASS
	Azimuth angle	0.000000	PASS
	Rotation per timestep	0.000000	PASS
	Wind speed at hub, magnitude	0.000000	PASS
	Wind angle at hub	0.000000	PASS
	Yaw angle relative to forward	0.000000	PASS
	Yaw angle to reference direction	0.000000	PASS
	Yaw error	0.000000	PASS
	Torque about yaw axis	0.000000	PASS
	Power (electrical)	0.000000	PASS

	Torque	0.000000	PASS
	Torque on main shaft	0.000000	PASS
	Torque diff. on main shaft	0.000000	PASS
	RPM	0.000000	PASS
	Filtered RPM	0.000000	PASS
	Electricity production	0.000000	PASS
	Region	0.000000	PASS
	Demanded collective pitch angle	0.000000	PASS
	Cumulative demanded collective pitch angle	0.000000	PASS
	Demanded collective pitch angle rate	0.000000	PASS
	Set point	0.000000	PASS
	RPM error	0.000000	PASS
	P term	0.000000	PASS
	I term	0.000000	PASS
	D term	0.000000	PASS
	Gain scheduling factor	0.000000	PASS
	Root force (magnitude)	0.000000	PASS
	Root moment (magnitude)	0.000000	PASS
	Root moment (out-of-plane)	0.000000	PASS
	Root moment (in-plane)	0.000000	PASS
	Root moment about shaft	0.000000	PASS
	Pitch angle	0.000000	PASS
	Tip deflection (out-of-plane)	0.000000	PASS
	Tip deflection (in-plane)	0.000000	PASS
	Root torque	0.000000	PASS
	Position (x)	0.000000	PASS
	Position (y)	0.000000	PASS
	Position (z)	0.000000	PASS
	Displacement (u)	0.000000	PASS
	Displacement (v)	0.000000	PASS
	Displacement (w)	0.000000	PASS
	Displacement magnitude	0.000000	PASS
	Speed	0.000000	PASS
	Acceleration, magnitude	0.000000	PASS
	Rotational displacement (ru)	0.000000	PASS
	Rotational displacement (rv)	0.000000	PASS
	Rotational displacement (rw)	0.000000	PASS
	Rotational displacement magnitude	0.000000	PASS
	Rotational speed	0.000000	PASS
	Rotational acceleration mag	0.000000	PASS
	Displacement period	0.000000	PASS
	Displacement logarithmic decrement	0.000000	PASS

	Displacement damping ratio	0.000000	PASS
Target RPM	Power (aero)	0.000000	PASS
	Torque (aero)	0.000000	PASS
	Thrust (aero)	0.000000	PASS
	RPM	0.000000	PASS
	TSR	0.000000	PASS
	Representative demanded pitch angle	0.000000	PASS
	Power coef. (CP)	0.000000	PASS
	Thrust coef. (CT)	0.000000	PASS
	Torque coef. (CQ)	0.000000	PASS
	Tip speed	0.000000	PASS
	1P (one revolution)	0.000000	PASS
	nP (blade passing)	0.000000	PASS
	Azimuth angle	0.000000	PASS
	Rotation per timestep	0.000000	PASS
	Wind speed at hub, magnitude	0.000000	PASS
	Wind angle at hub	0.000000	PASS
	Yaw angle relative to forward	0.000000	PASS
	Yaw angle to reference direction	0.000000	PASS
	Yaw error	0.000000	PASS
	Torque about yaw axis	0.000000	PASS
	Power (electrical)	0.000000	PASS
	Torque	0.000000	PASS
	Torque on main shaft	0.000000	PASS
	Torque diff. on main shaft	0.000000	PASS
	RPM	0.000000	PASS
	Filtered RPM	0.000000	PASS
	Electricity production	0.000000	PASS
	Region	0.000000	PASS
	Demanded collective pitch angle	0.000000	PASS
	Cumulative demanded collective pitch angle	0.000000	PASS
	Demanded collective pitch angle rate	0.000000	PASS
	Set point	0.000000	PASS
	RPM error	0.000000	PASS
	P term	0.000000	PASS
	I term	0.000000	PASS
	D term	0.000000	PASS
	Gain scheduling factor	0.000000	PASS
	Root force (magnitude)	0.000000	PASS
	Root moment (magnitude)	0.000000	PASS
	Root moment (out-of-plane)	0.000000	PASS
	Root moment (in-plane)	0.000000	PASS

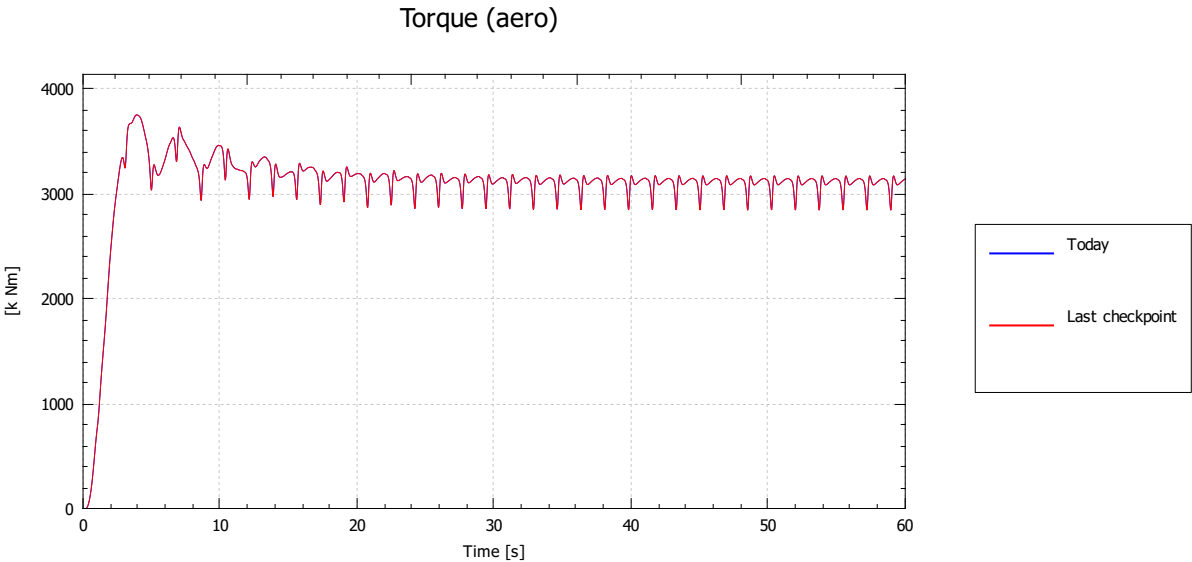
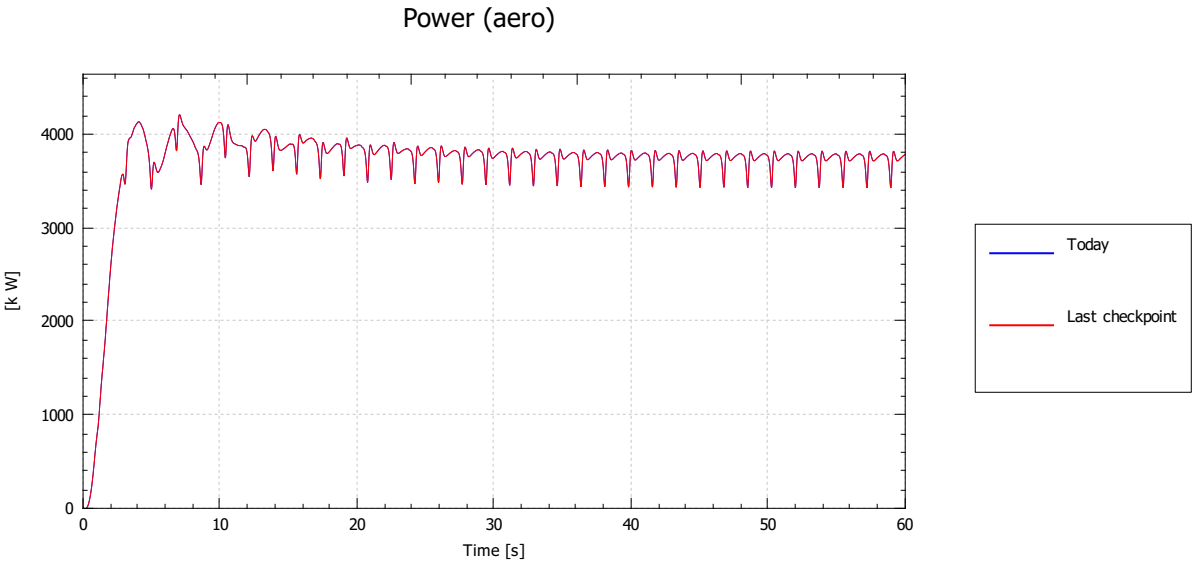
	Root moment about shaft	0.000000	PASS
	Pitch angle	0.000000	PASS
	Tip deflection (out-of-plane)	0.000000	PASS
	Tip deflection (in-plane)	0.000000	PASS
	Root torque	0.000000	PASS
	Position (x)	0.000000	PASS
	Position (y)	0.000000	PASS
	Position (z)	0.000000	PASS
	Displacement (u)	0.000000	PASS
	Displacement (v)	0.000000	PASS
	Displacement (w)	0.000000	PASS
	Displacement magnitude	0.000000	PASS
	Speed	0.000000	PASS
	Acceleration, magnitude	0.000000	PASS
	Rotational displacement (ru)	0.000000	PASS
	Rotational displacement (rv)	0.000000	PASS
	Rotational displacement (rw)	0.000000	PASS
	Rotational displacement magnitude	0.000000	PASS
	Rotational speed	0.000000	PASS
	Rotational acceleration mag	0.000000	PASS
	Displacement period	0.000000	PASS
	Displacement logarithmic decrement	0.000000	PASS
	Displacement damping ratio	0.000000	PASS
Target cut-in RPM	Power (aero)	0.000000	PASS
	Torque (aero)	0.000000	PASS
	Thrust (aero)	0.000000	PASS
	RPM	0.000000	PASS
	TSR	0.000000	PASS
	Representative demanded pitch angle	0.000000	PASS
	Power coef. (CP)	0.000000	PASS
	Thrust coef. (CT)	0.000000	PASS
	Torque coef. (CQ)	0.000000	PASS
	Tip speed	0.000000	PASS
	1P (one revolution)	0.000000	PASS
	nP (blade passing)	0.000000	PASS
	Azimuth angle	0.000000	PASS
	Rotation per timestep	0.000000	PASS
	Wind speed at hub, magnitude	0.000000	PASS
	Wind angle at hub	0.000000	PASS
	Yaw angle relative to forward	0.000000	PASS
	Yaw angle to reference direction	0.000000	PASS
	Yaw error	0.000000	PASS

	Torque about yaw axis	0.000000	PASS
	Power (electrical)	0.000000	PASS
	Torque	0.000000	PASS
	Torque on main shaft	0.000000	PASS
	Torque diff. on main shaft	0.000000	PASS
	RPM	0.000000	PASS
	Filtered RPM	0.000000	PASS
	Electricity production	0.000000	PASS
	Region	0.000000	PASS
	Demanded collective pitch angle	0.000000	PASS
	Cumulative demanded collective pitch angle	0.000000	PASS
	Demanded collective pitch angle rate	0.000000	PASS
	Set point	0.000000	PASS
	RPM error	0.000000	PASS
	P term	0.000000	PASS
	I term	0.000000	PASS
	D term	0.000000	PASS
	Gain scheduling factor	0.000000	PASS
	Root force (magnitude)	0.000000	PASS
	Root moment (magnitude)	0.000000	PASS
	Root moment (out-of-plane)	0.000000	PASS
	Root moment (in-plane)	0.000000	PASS
	Root moment about shaft	0.000000	PASS
	Pitch angle	0.000000	PASS
	Tip deflection (out-of-plane)	0.000000	PASS
	Tip deflection (in-plane)	0.000000	PASS
	Root torque	0.000000	PASS
	Position (x)	0.000000	PASS
	Position (y)	0.000000	PASS
	Position (z)	0.000000	PASS
	Displacement (u)	0.000000	PASS
	Displacement (v)	0.000000	PASS
	Displacement (w)	0.000000	PASS
	Displacement magnitude	0.000000	PASS
	Speed	0.000000	PASS
	Acceleration, magnitude	0.000000	PASS
	Rotational displacement (ru)	0.000000	PASS
	Rotational displacement (rv)	0.000000	PASS
	Rotational displacement (rw)	0.000000	PASS
	Rotational displacement magnitude	0.000000	PASS
	Rotational speed	0.000000	PASS
	Rotational acceleration mag	0.000000	PASS

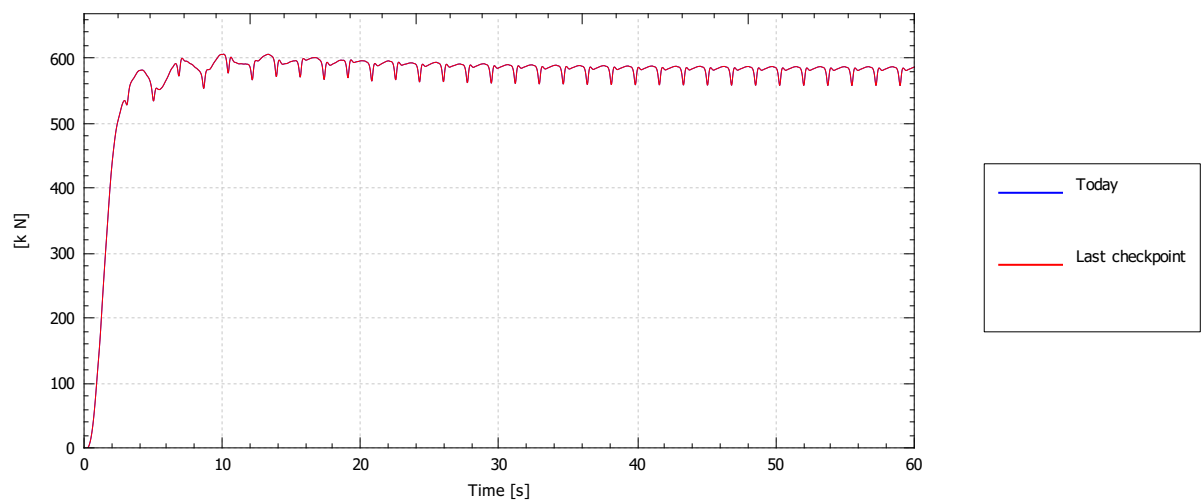
	Displacement period	0.000000	PASS
	Displacement logarithmic decrement	0.000000	PASS
	Displacement damping ratio	0.000000	PASS

Load case: Default

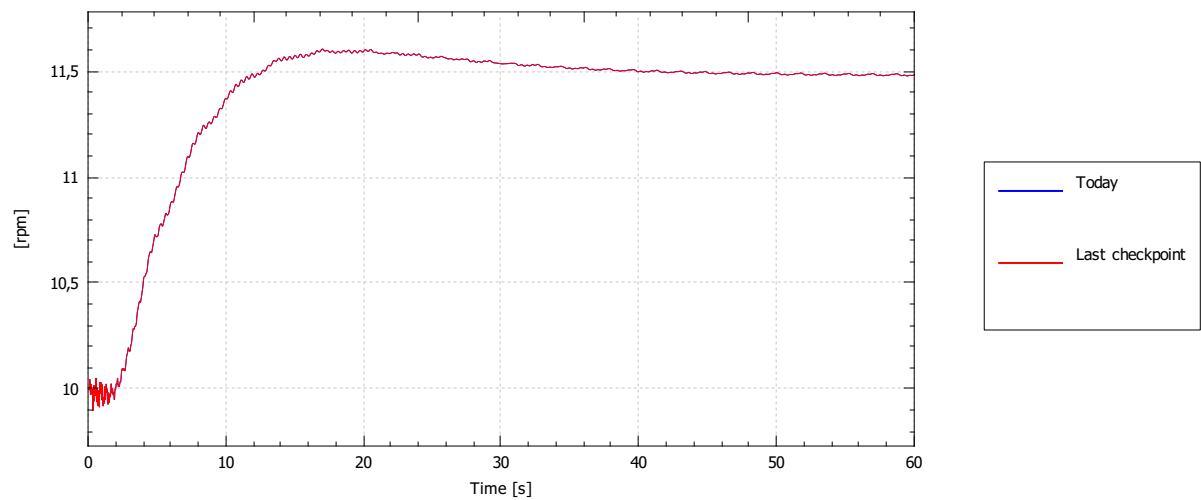
Rotor



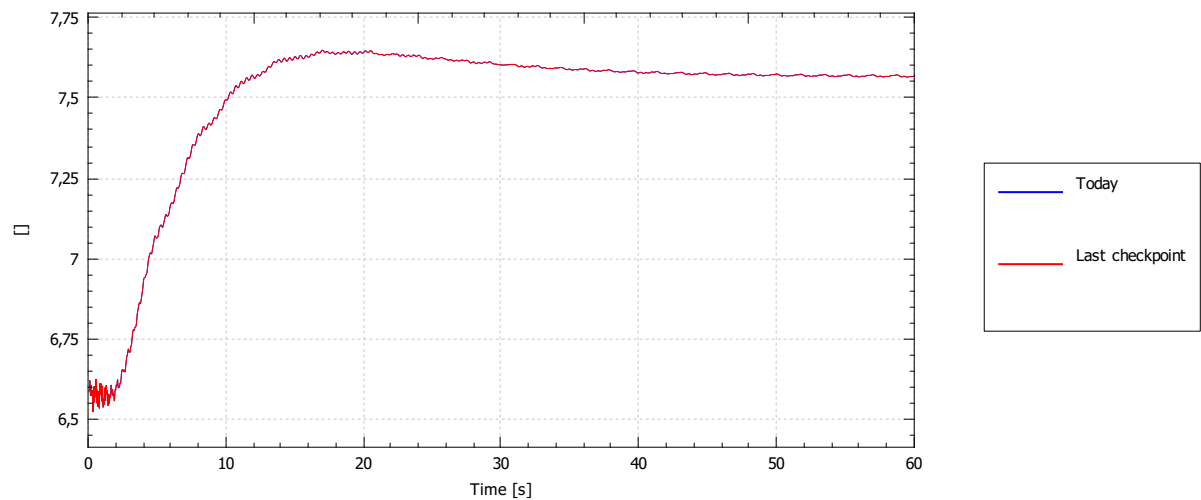
Thrust (aero)



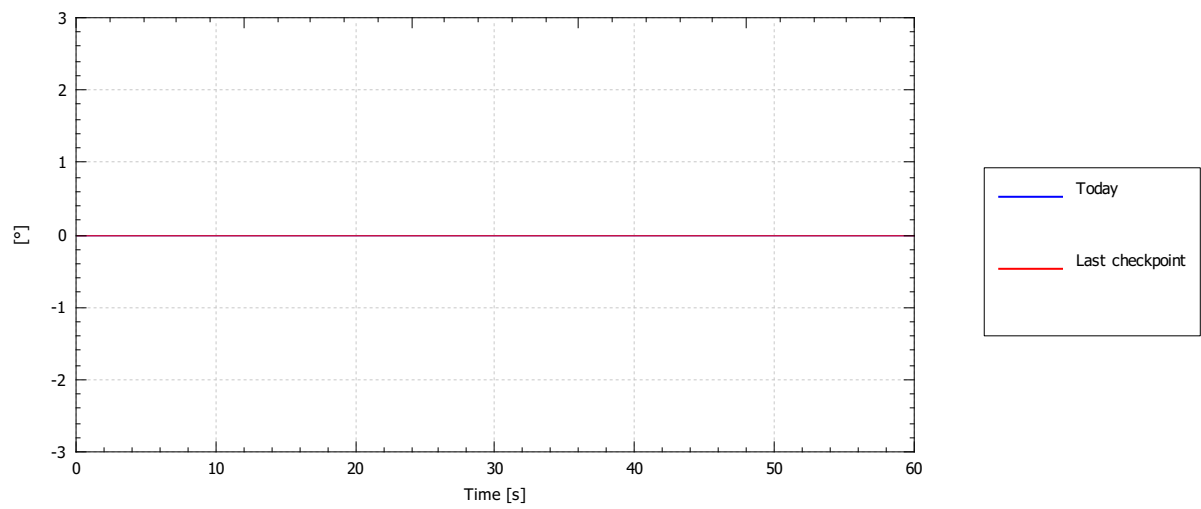
RPM



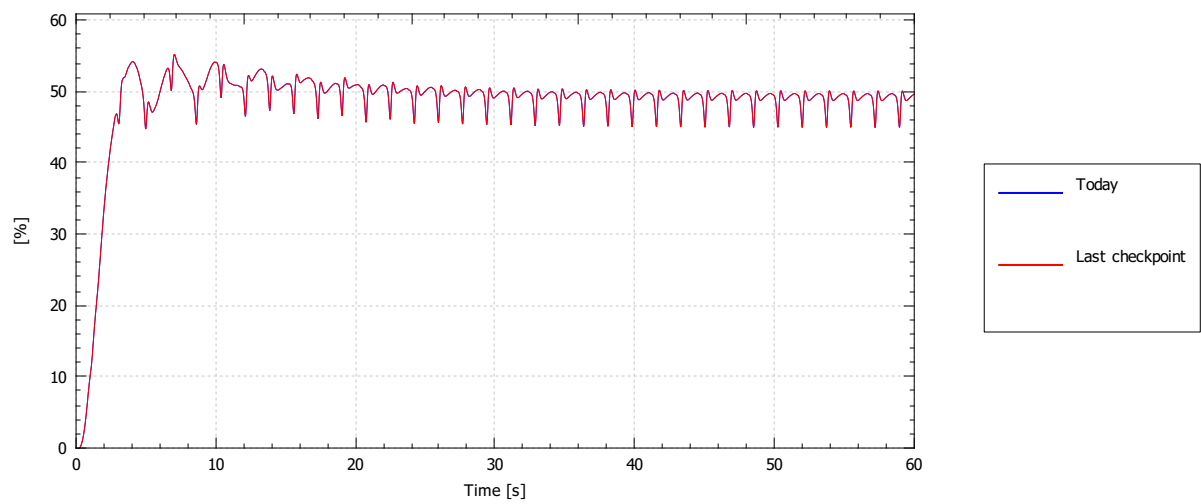
TSR



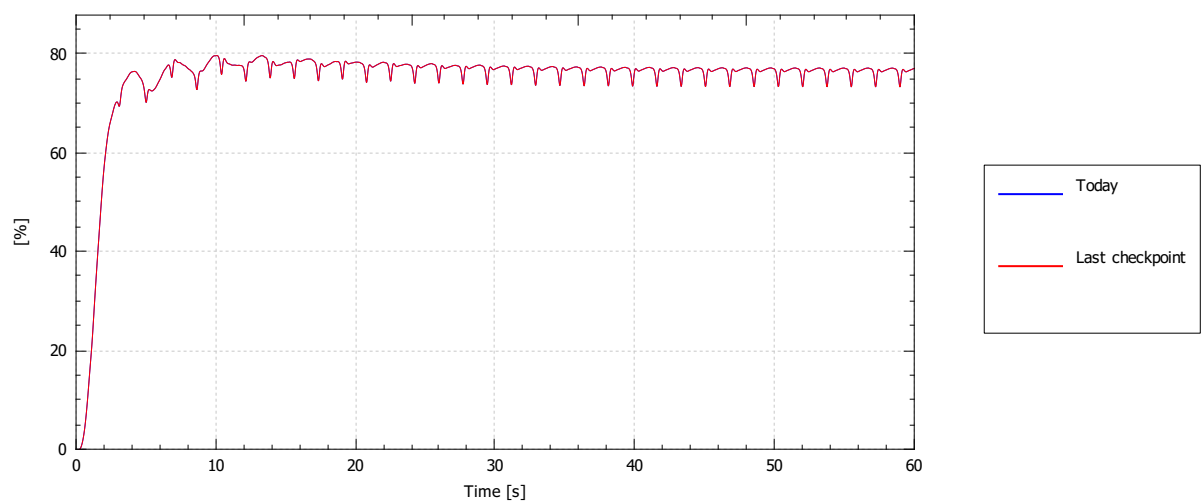
Representative demanded pitch angle



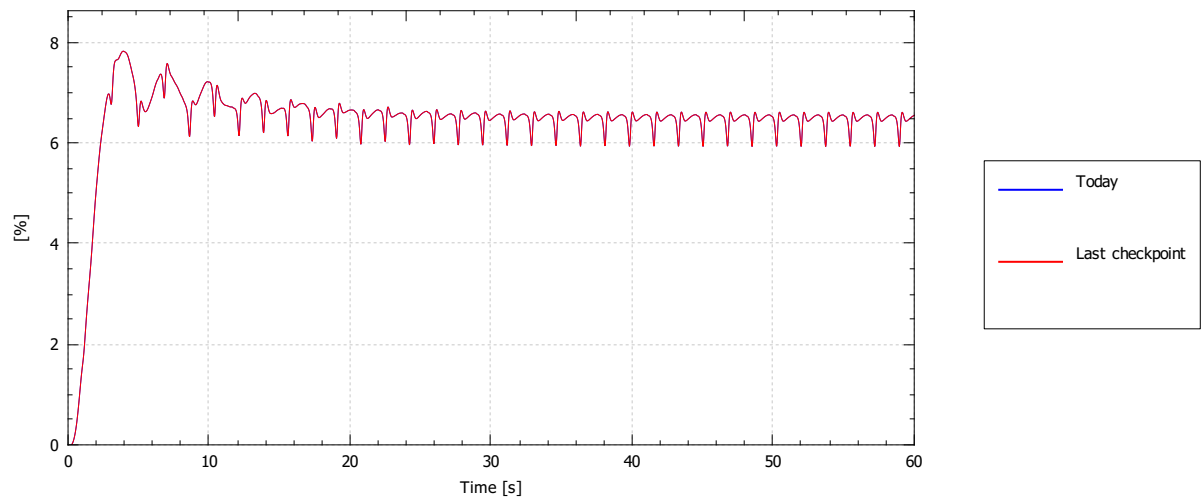
Power coef. (CP)



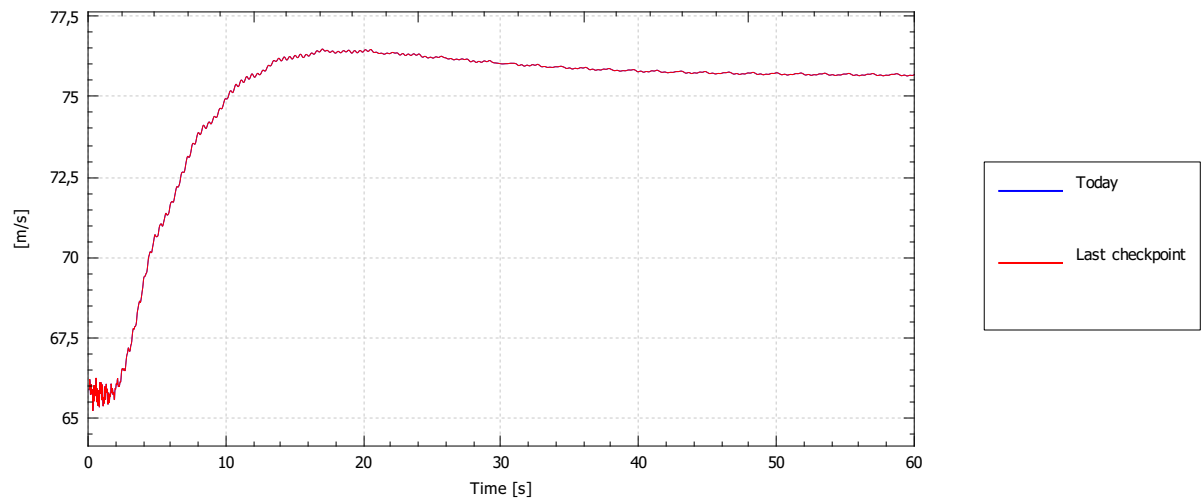
Thrust coef. (CT)



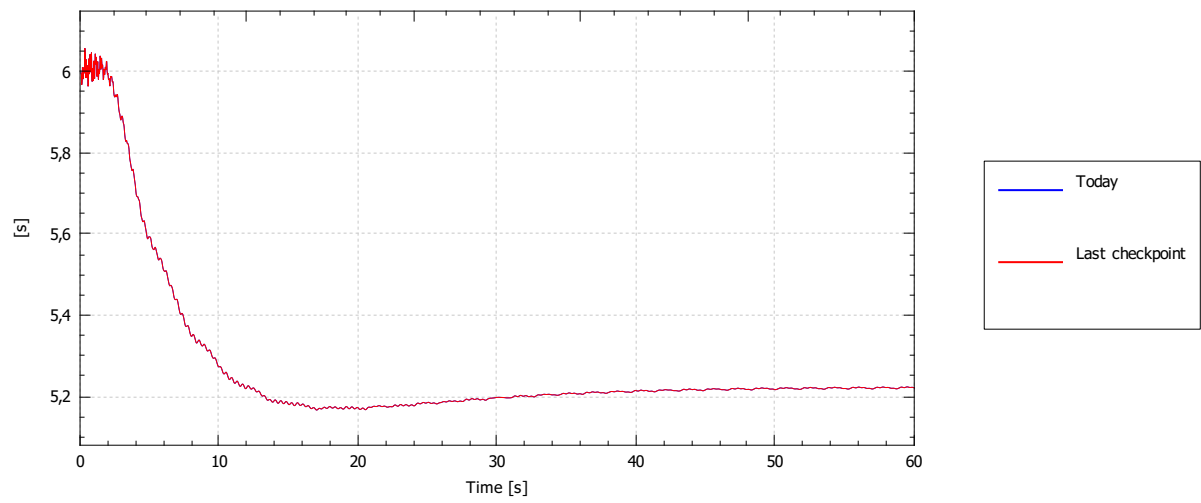
Torque coef. (CQ)



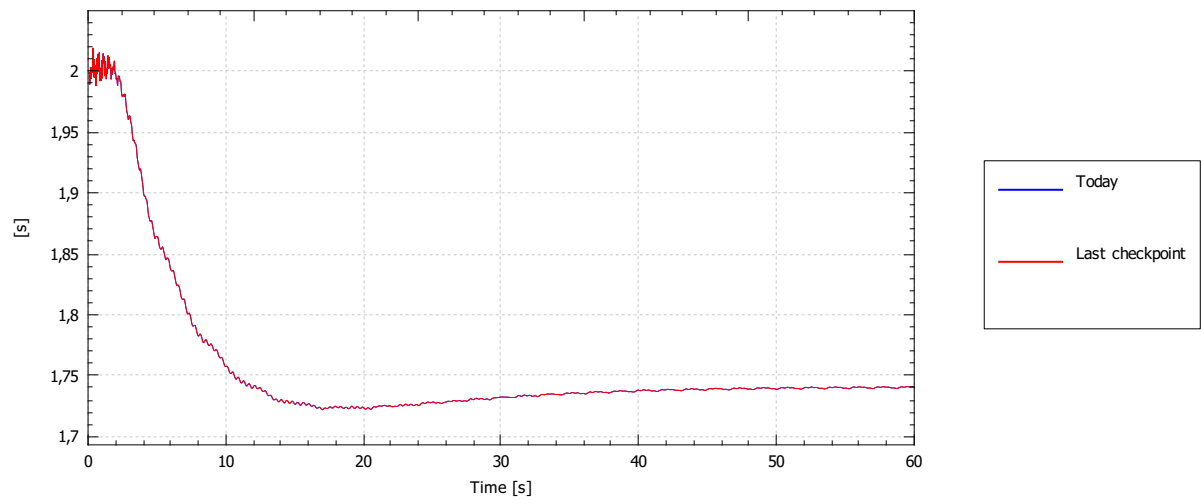
Tip speed



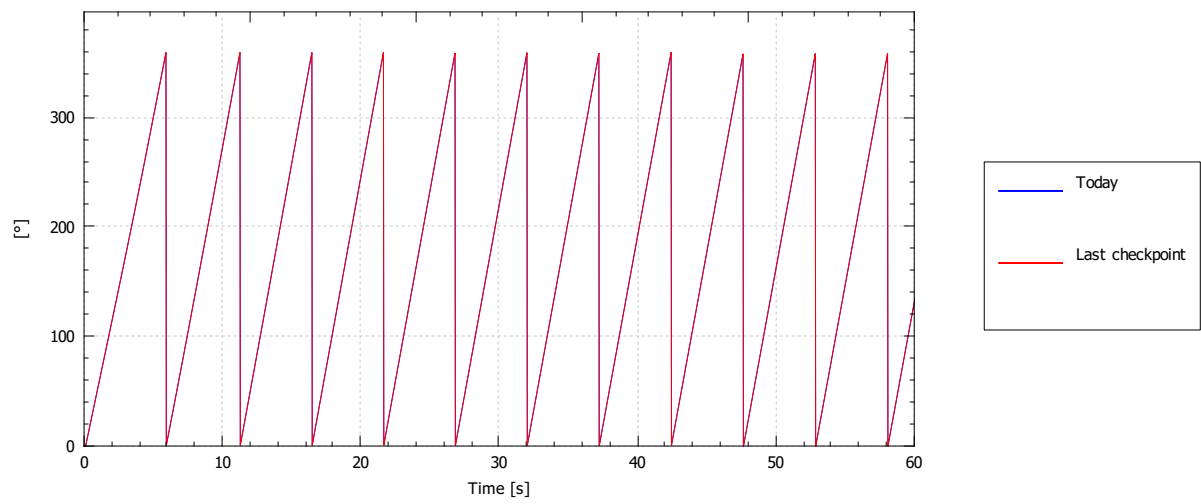
1P (one revolution)



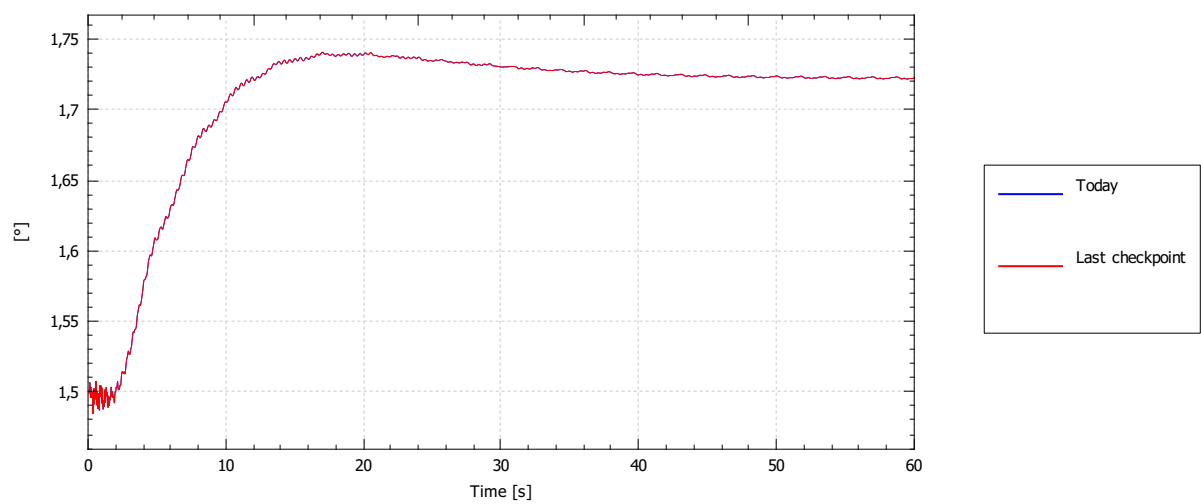
nP (blade passing)



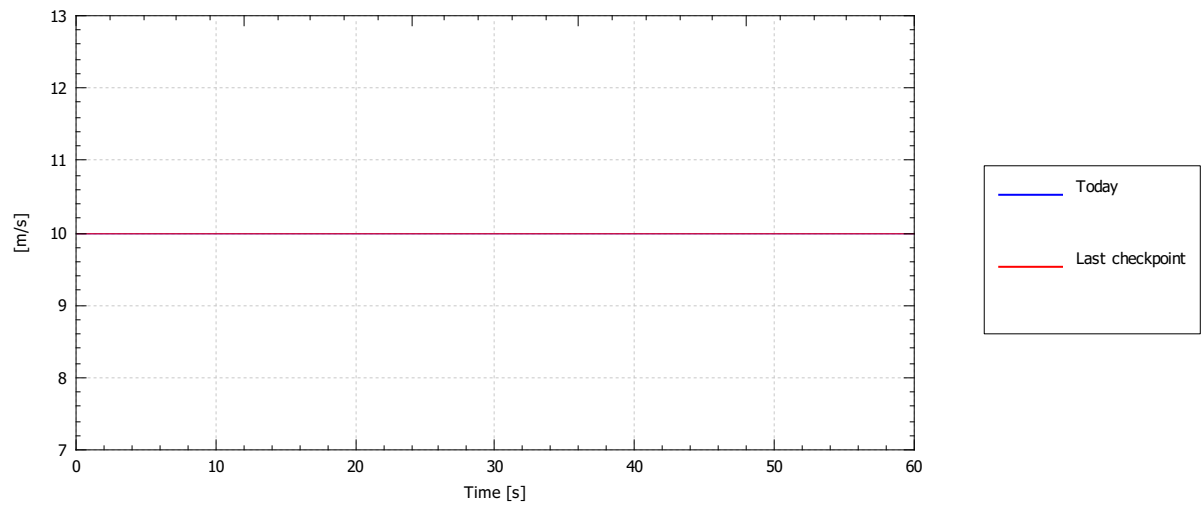
Azimuth angle



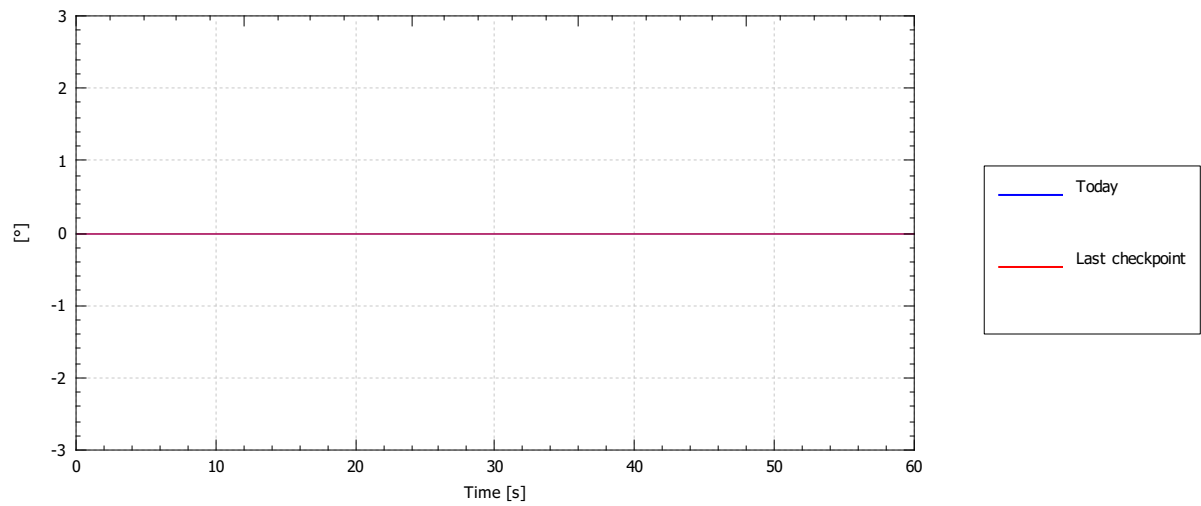
Rotation per timestep



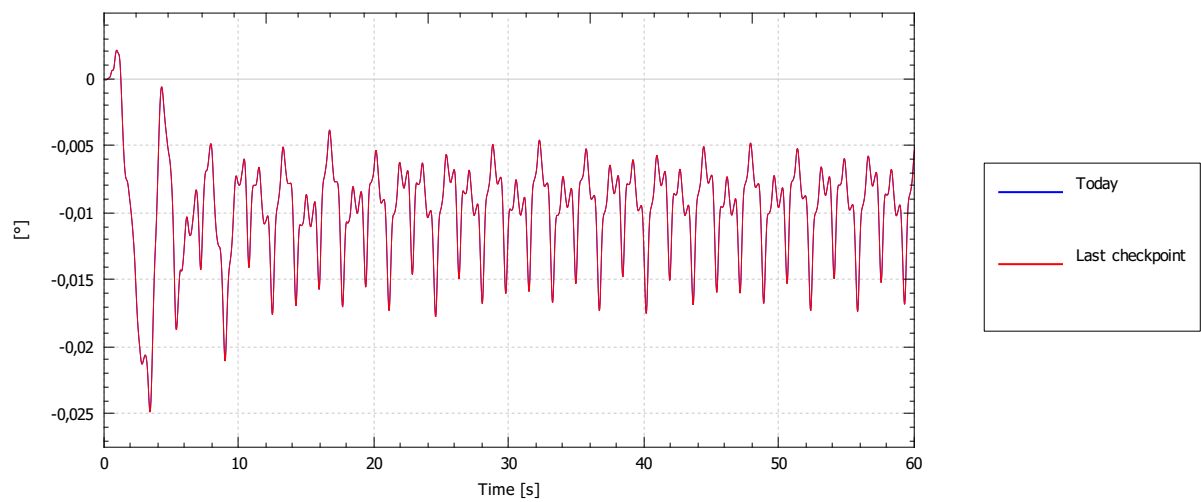
Wind speed at hub, magnitude



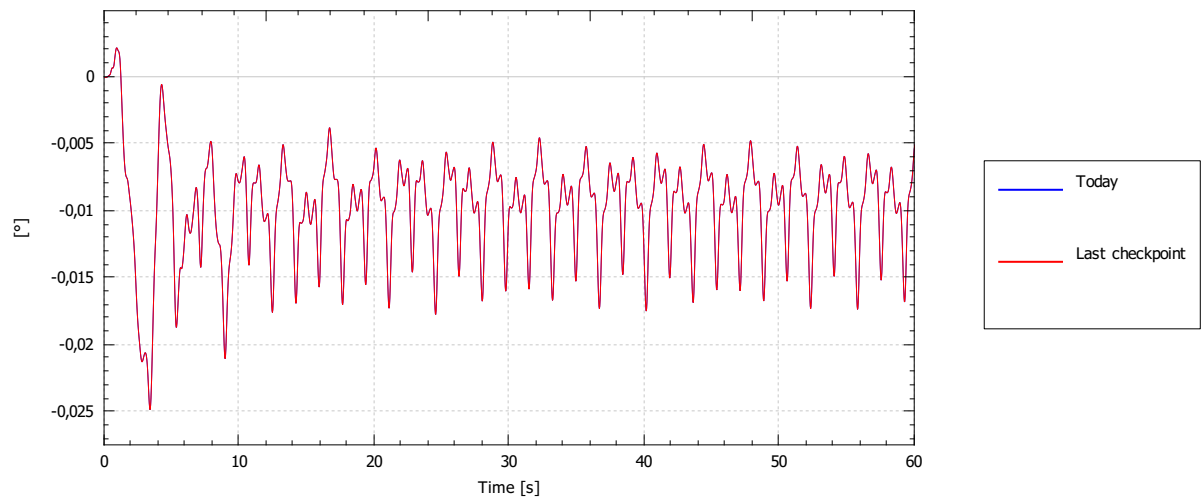
Wind angle at hub



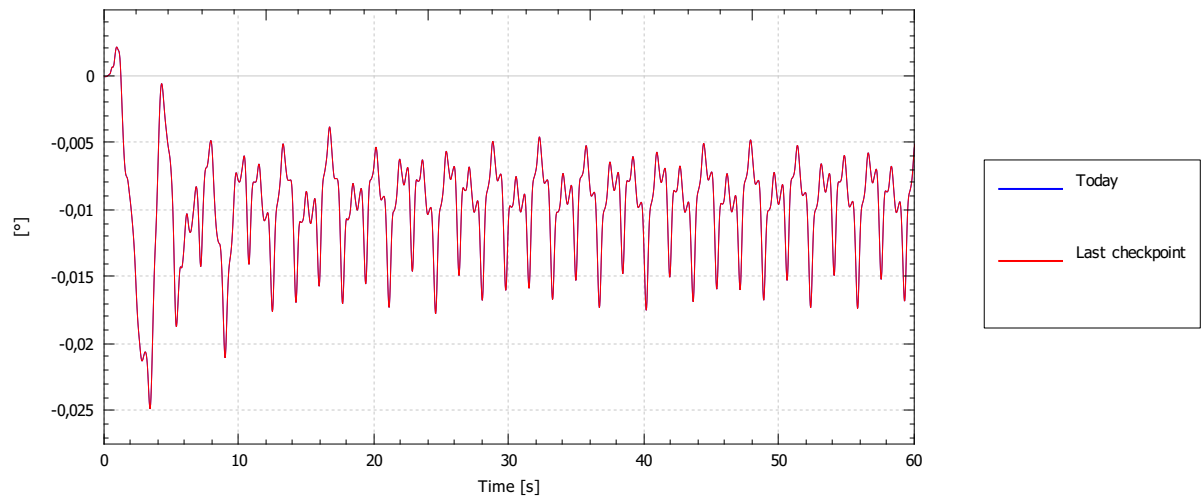
Yaw angle relative to forward



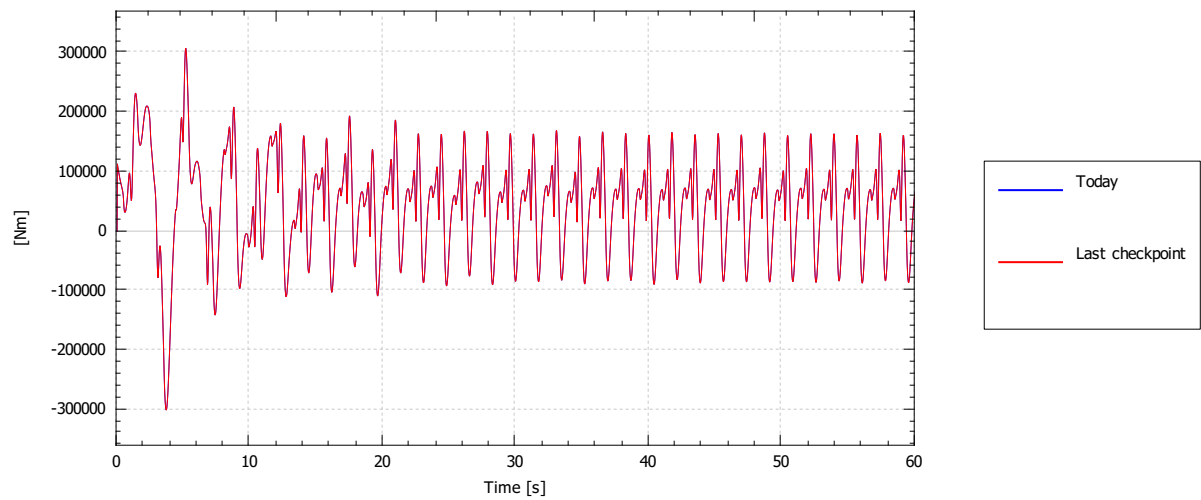
Yaw angle to reference direction



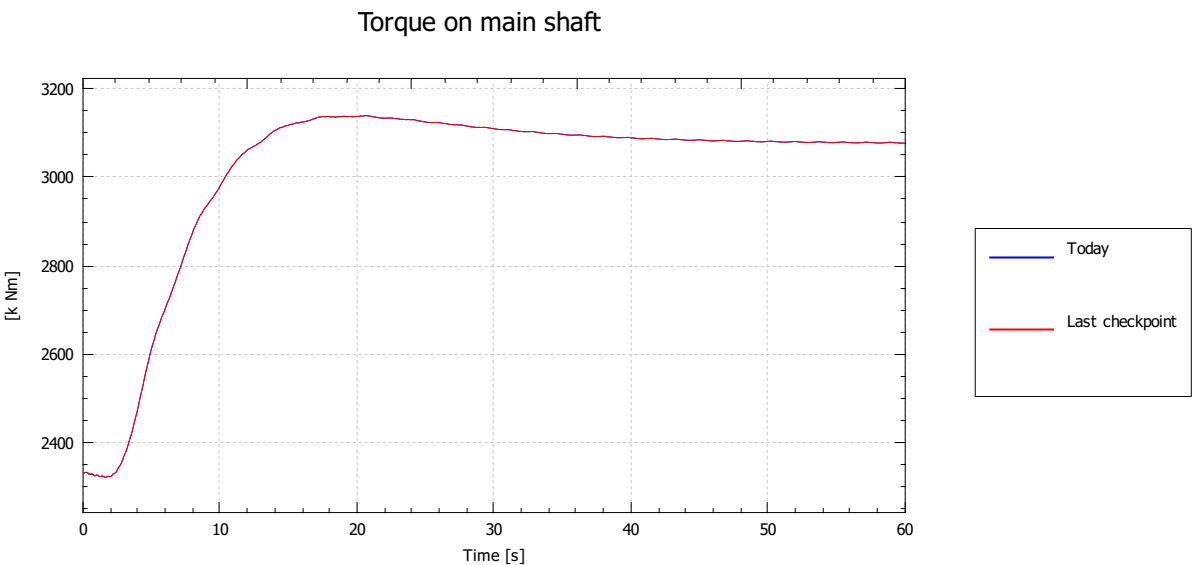
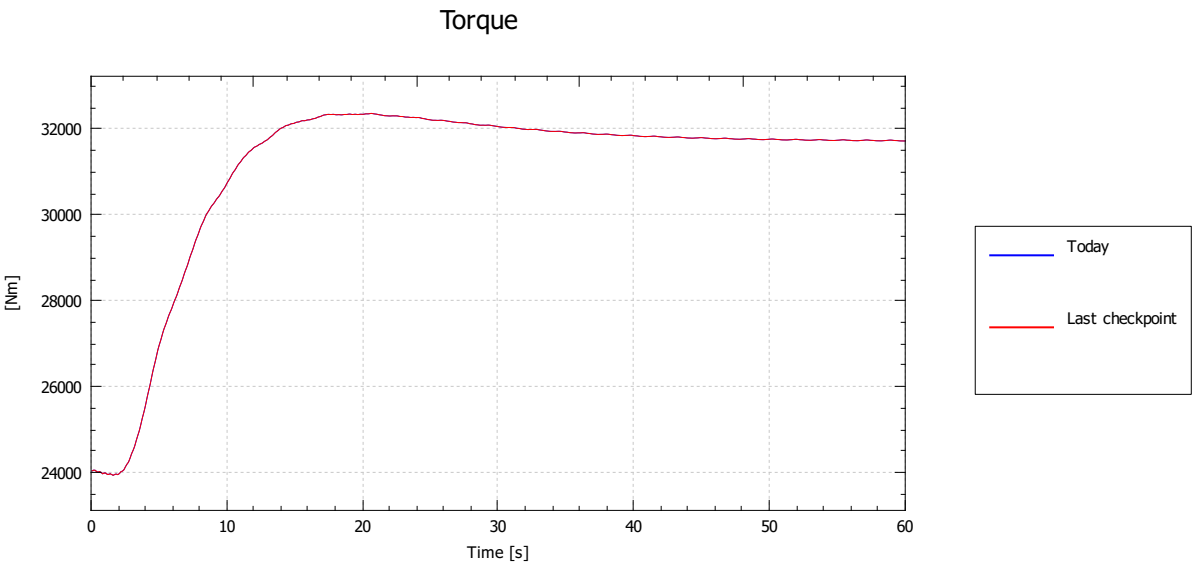
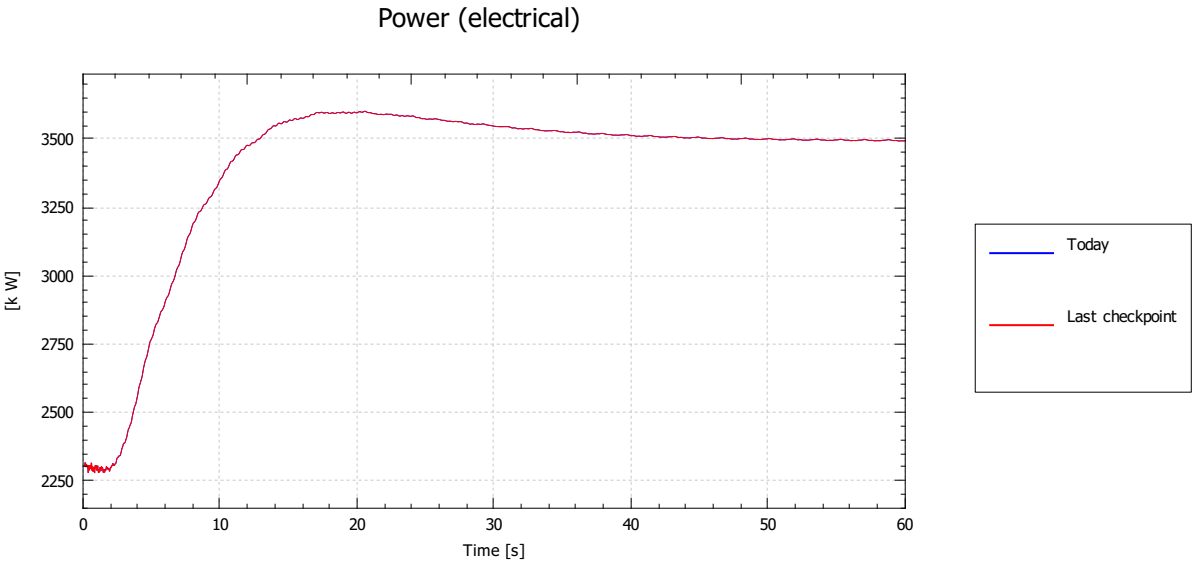
Yaw error



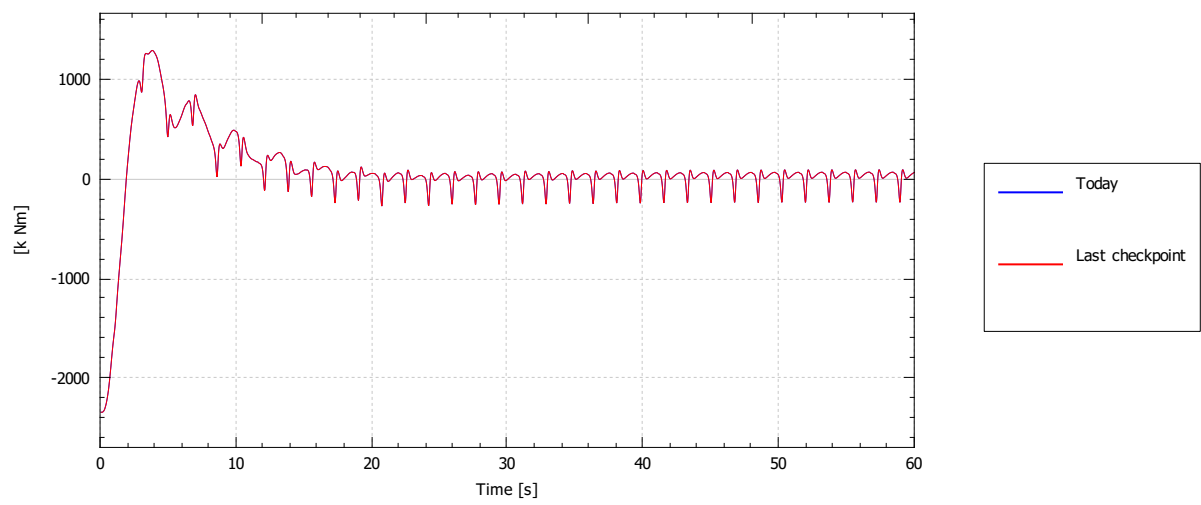
Torque about yaw axis



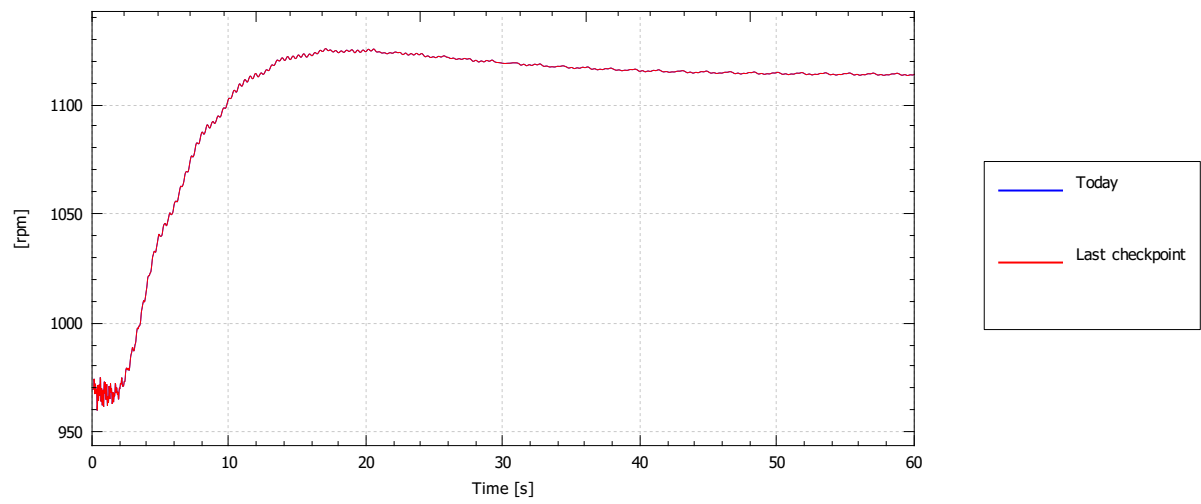
Generator



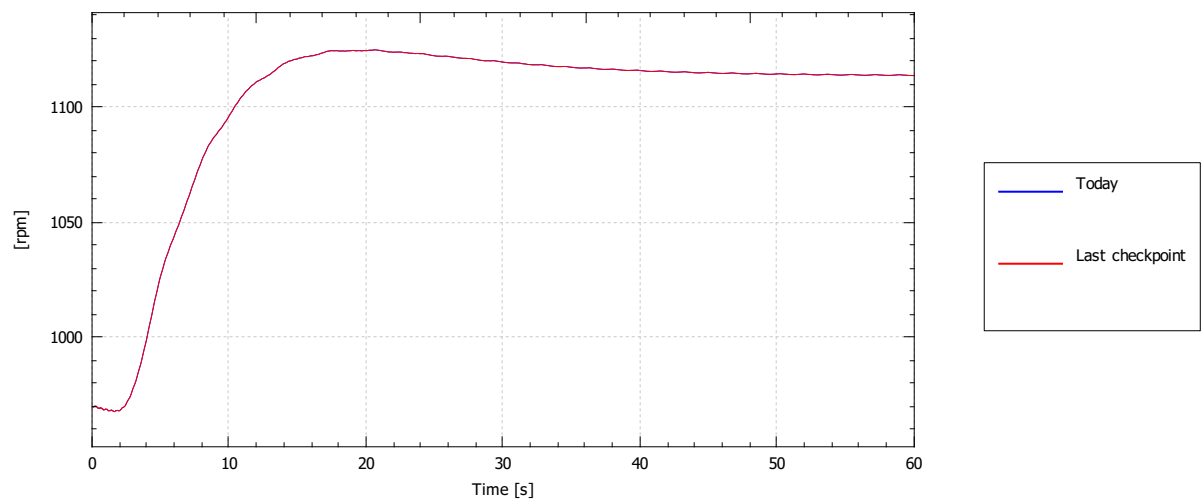
Torque diff. on main shaft



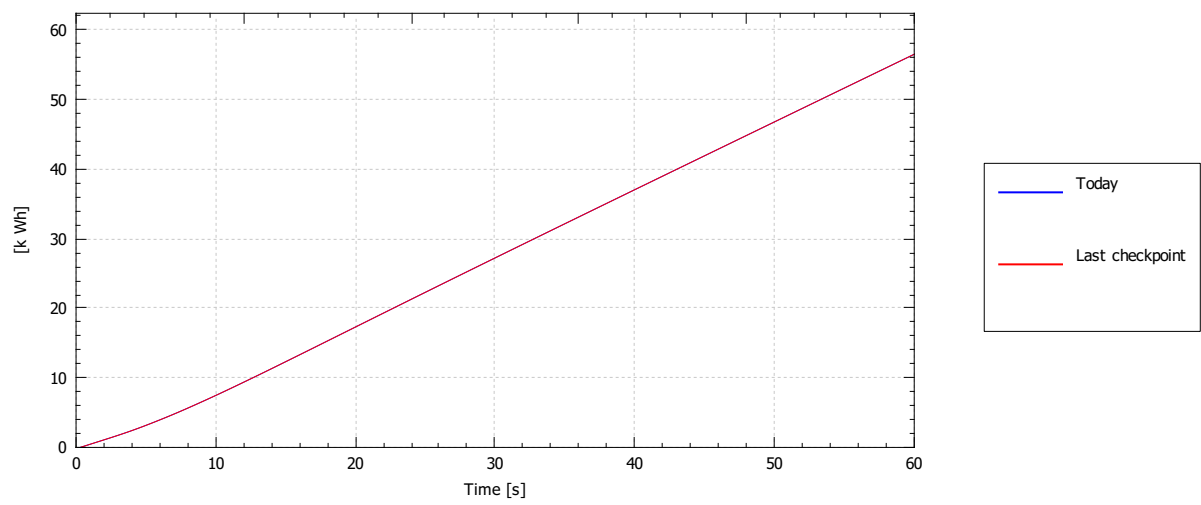
RPM



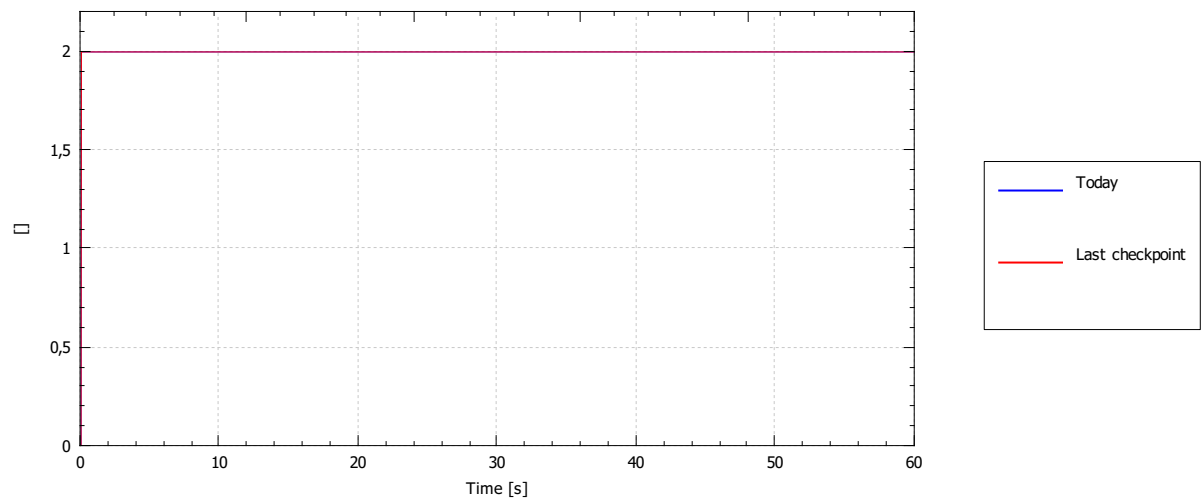
Filtered RPM



Electricity production

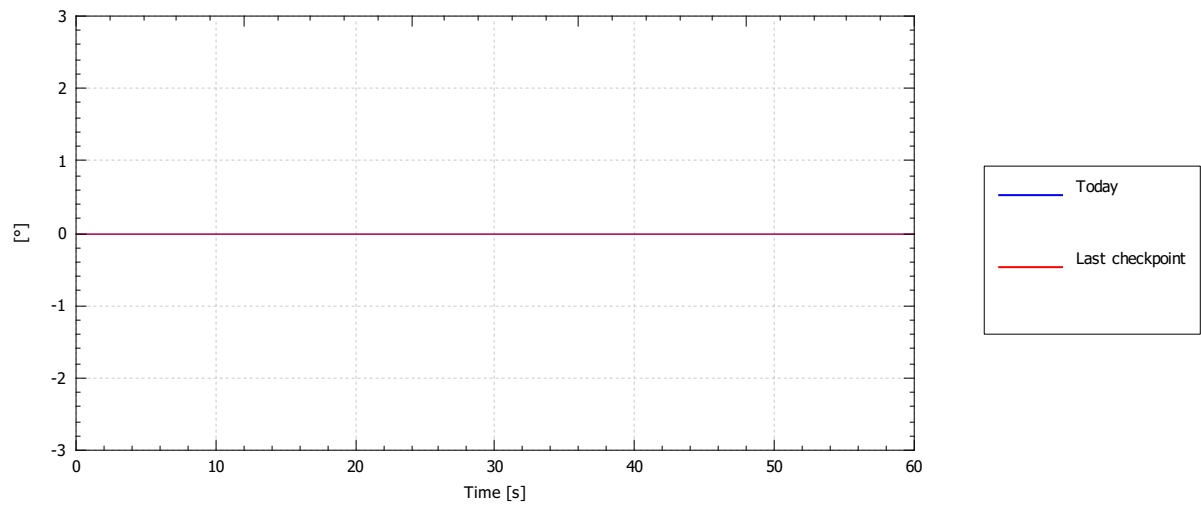


Region

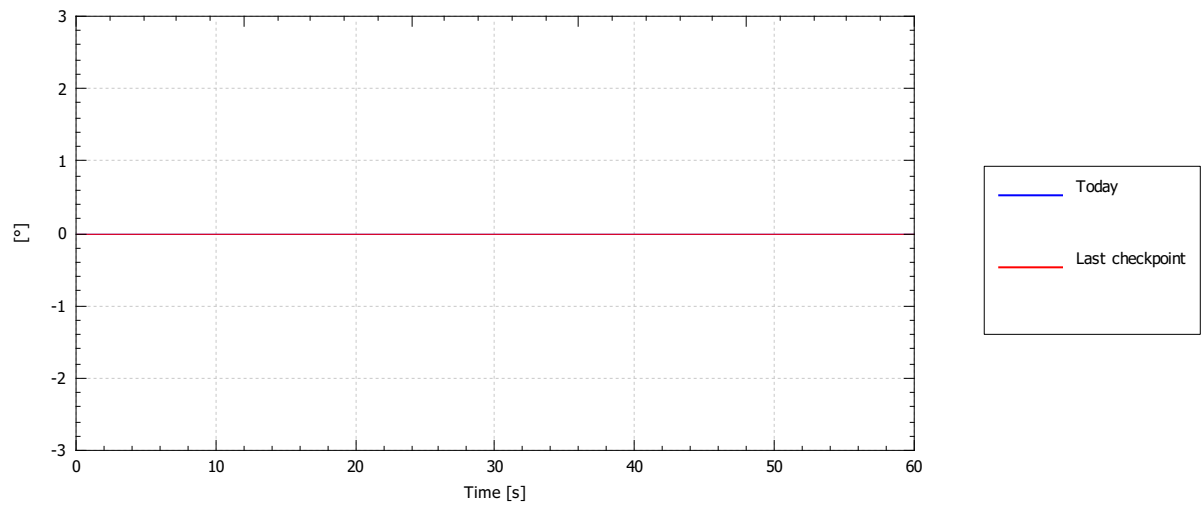


Demanded pitch controller

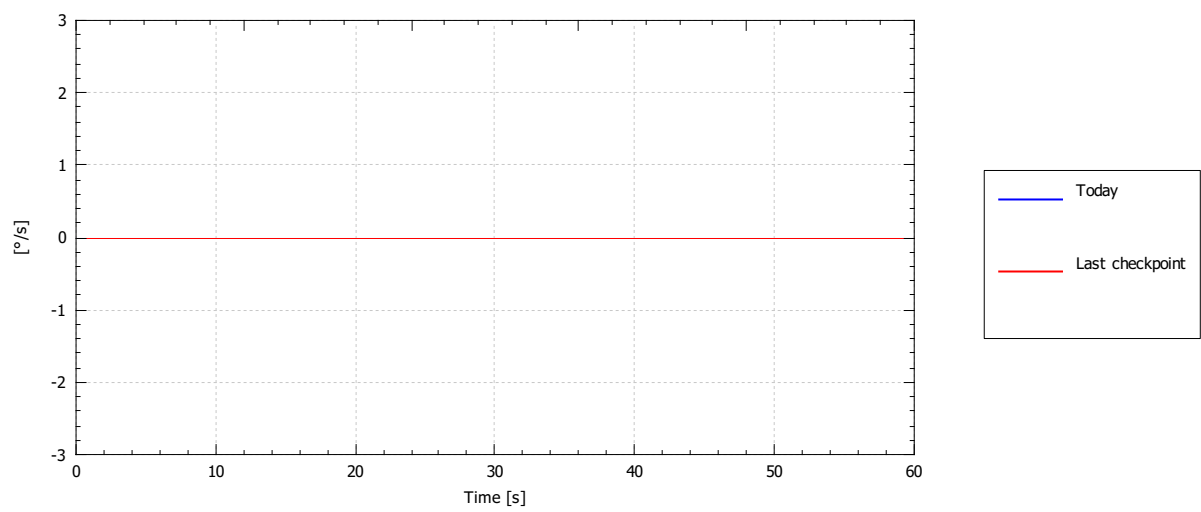
Demanded collective pitch angle



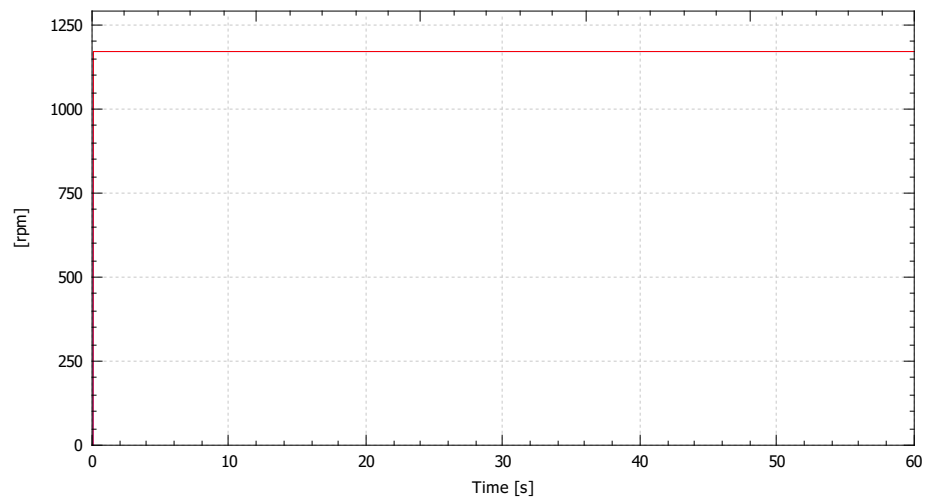
Cumulative demanded collective pitch angle



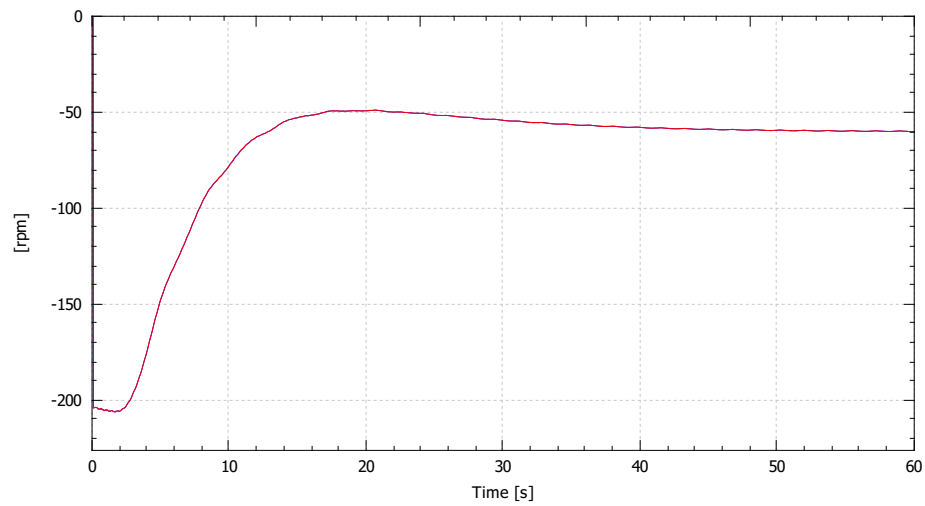
Demanded collective pitch angle rate



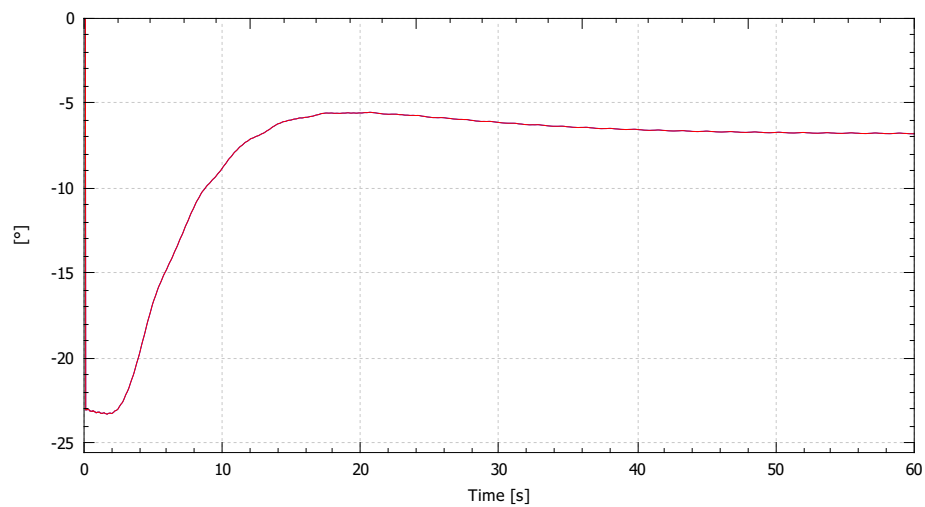
Set point



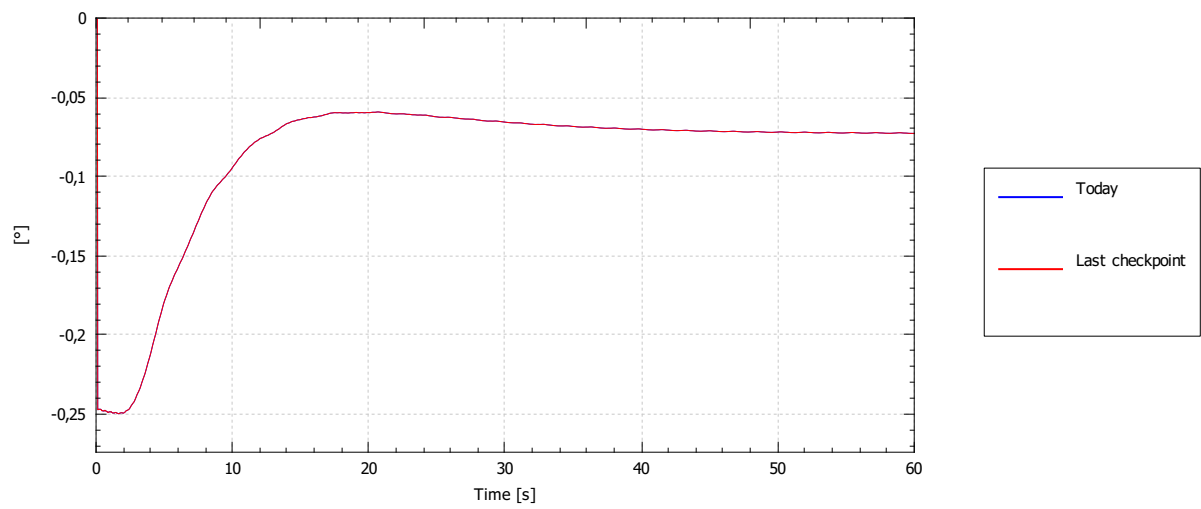
RPM error



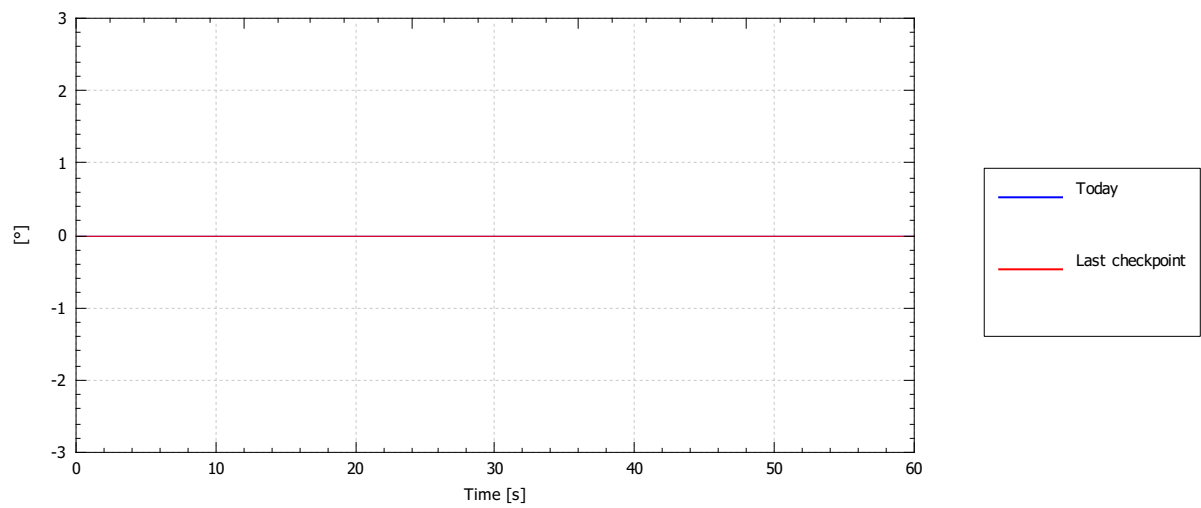
P term



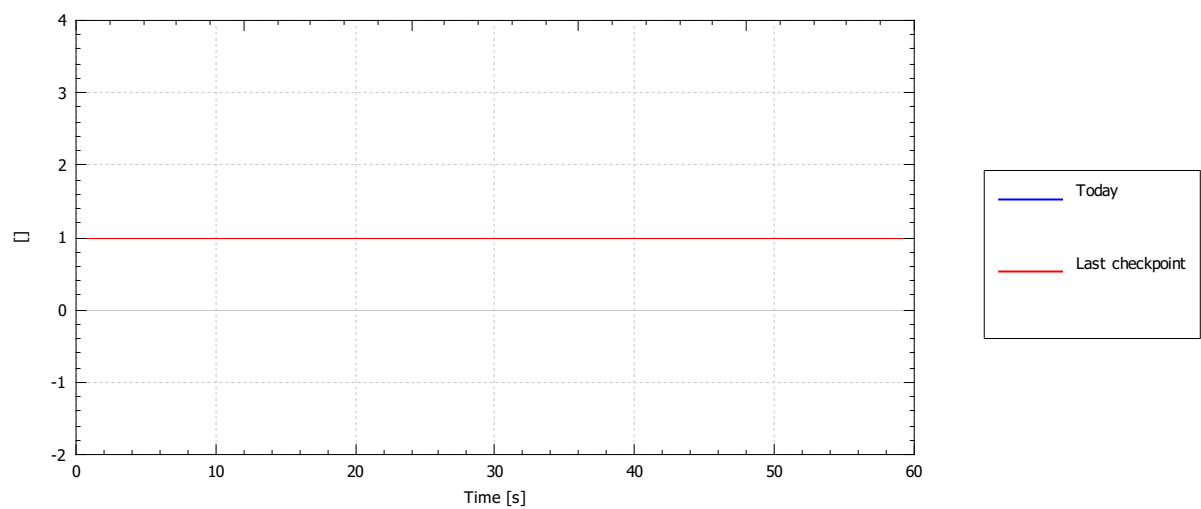
I term

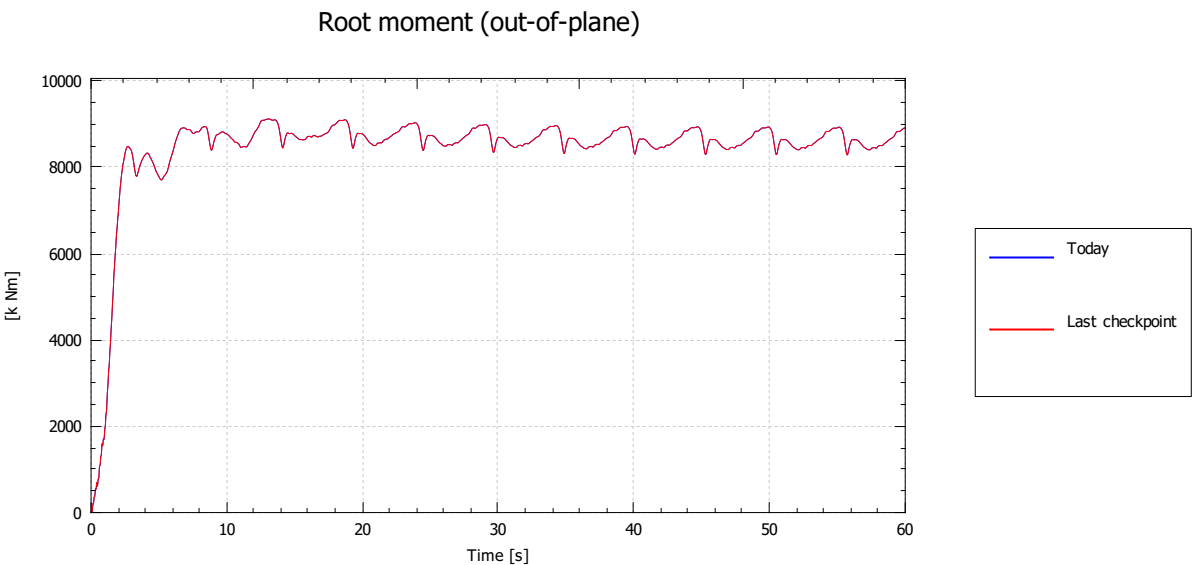
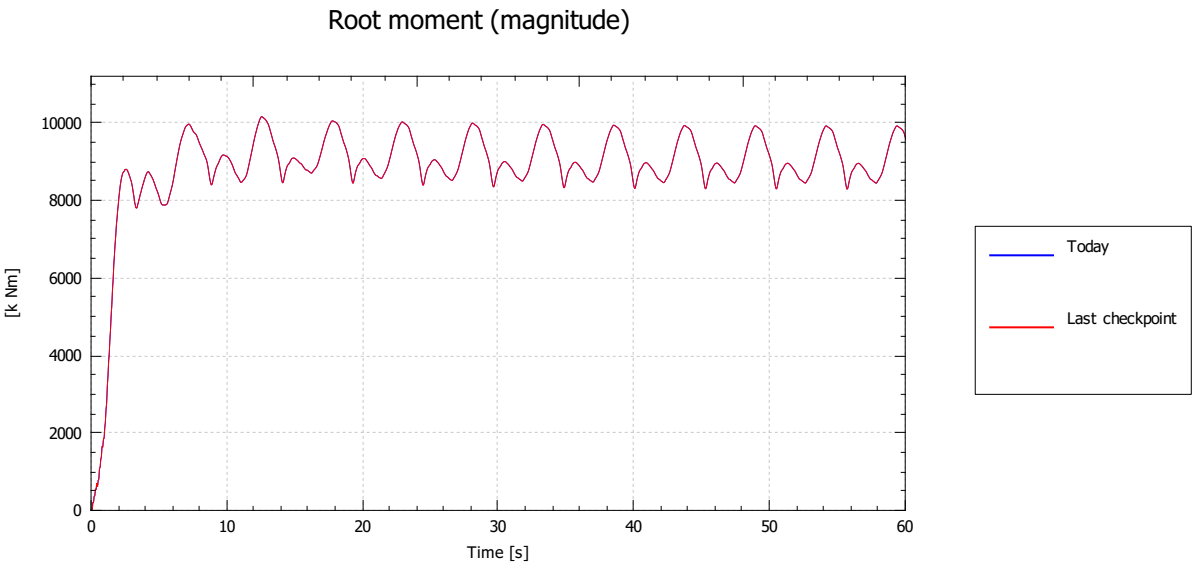
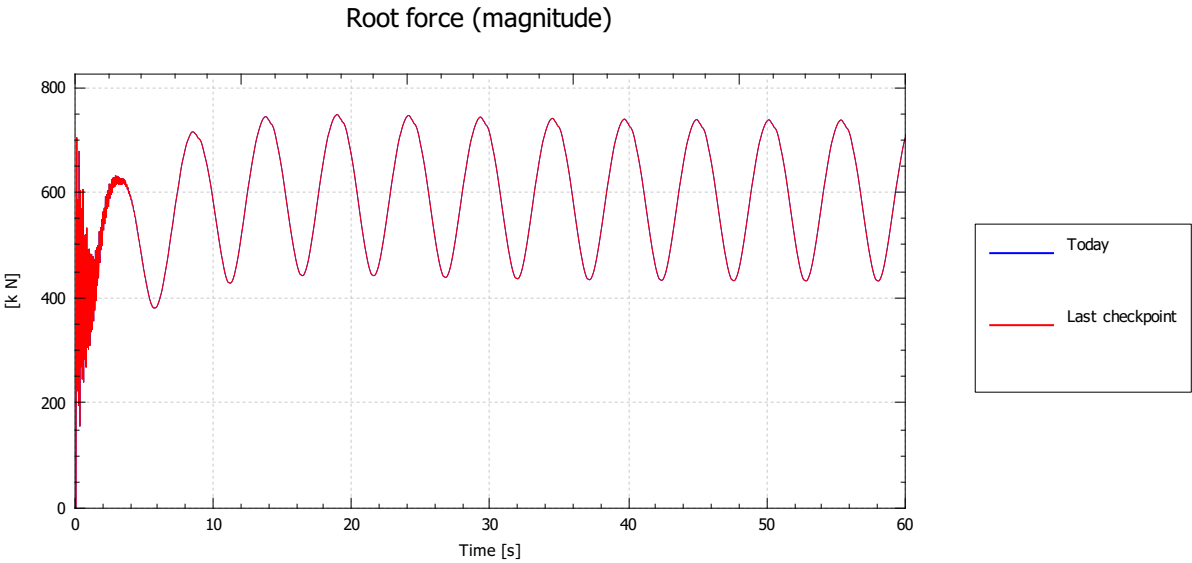


D term

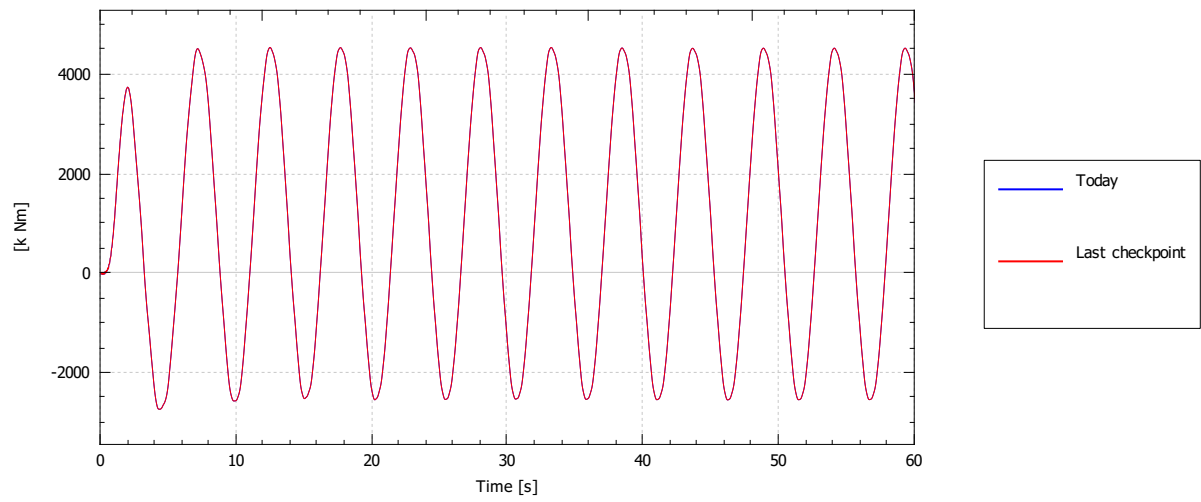


Gain scheduling factor

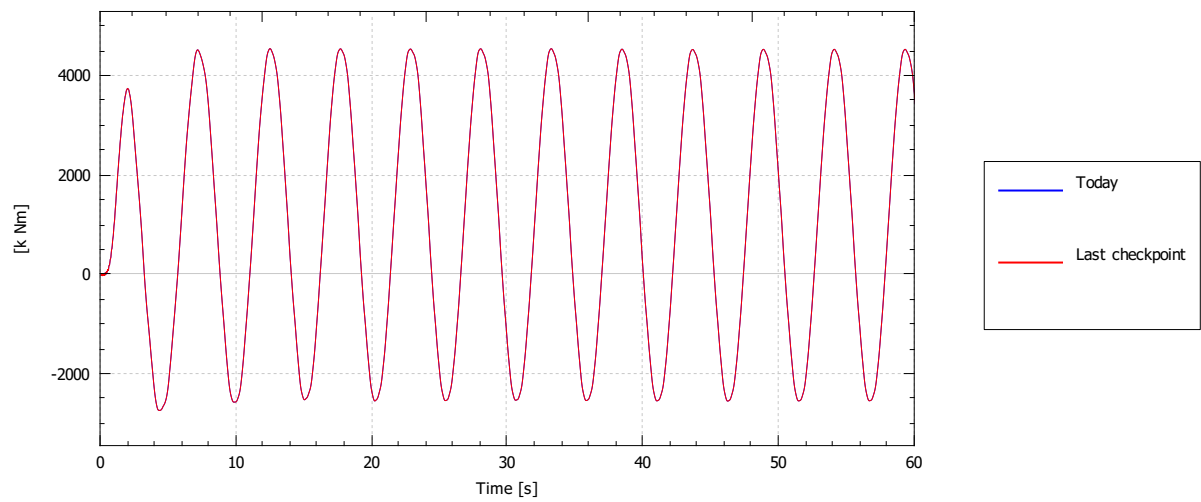




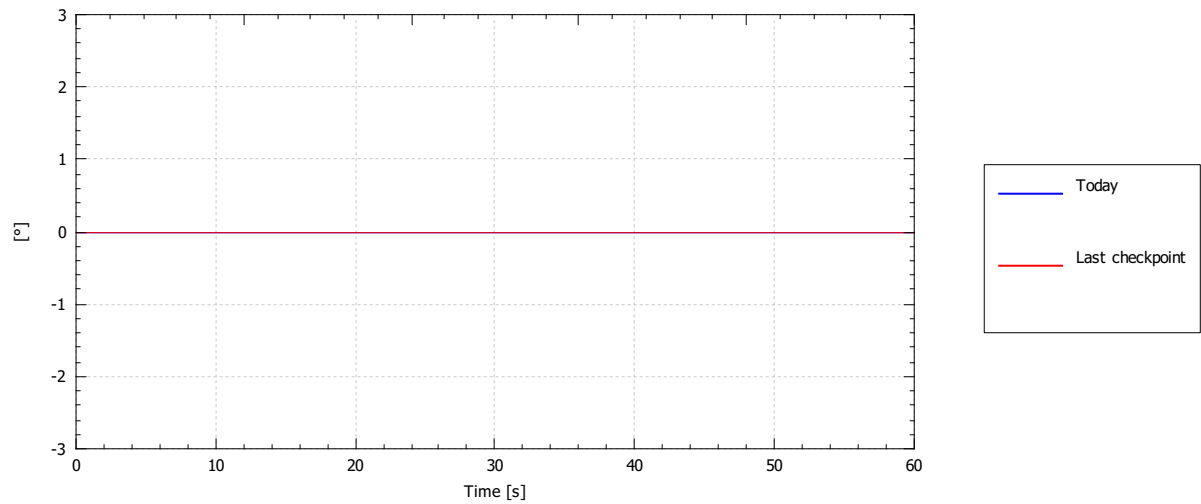
Root moment (in-plane)



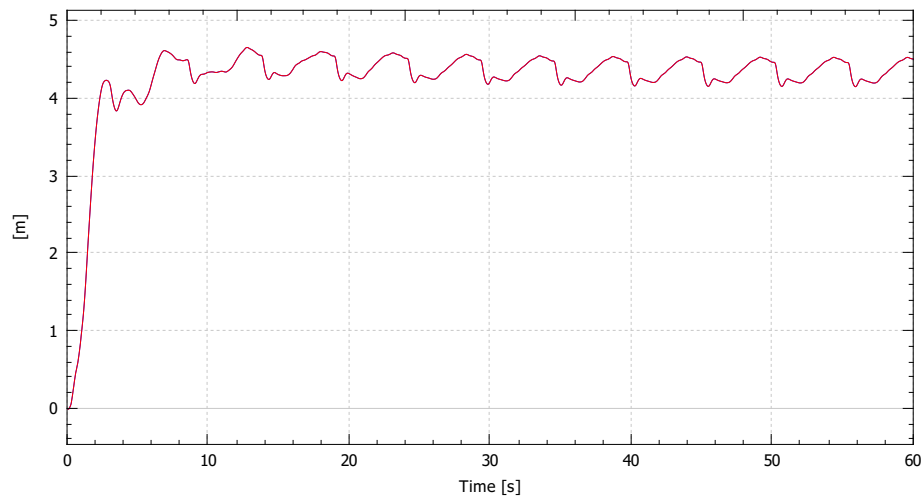
Root moment about shaft



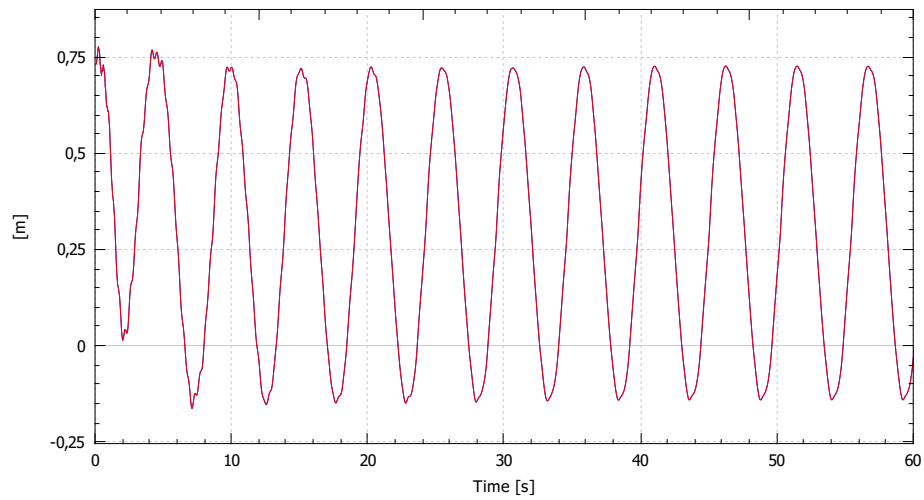
Pitch angle



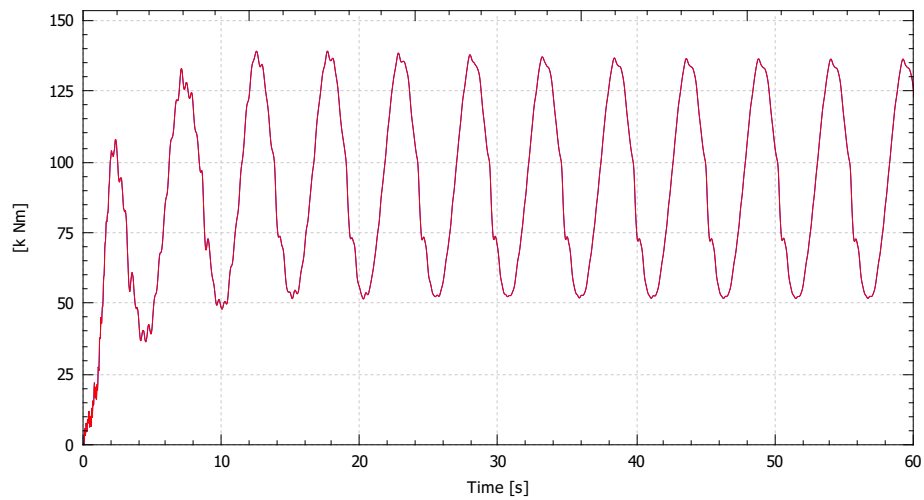
Tip deflection (out-of-plane)

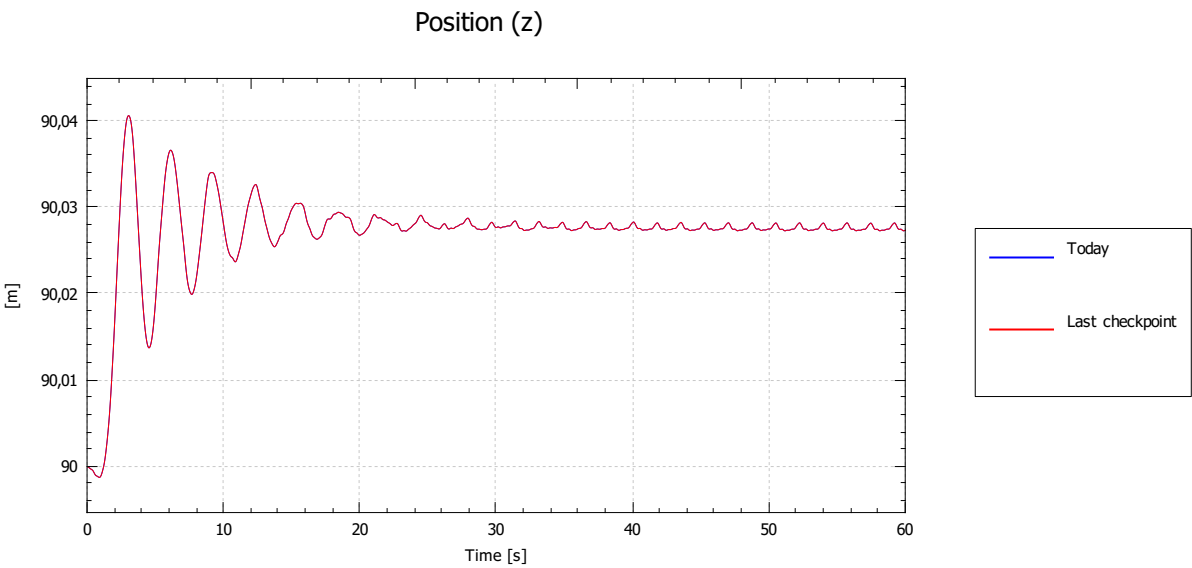
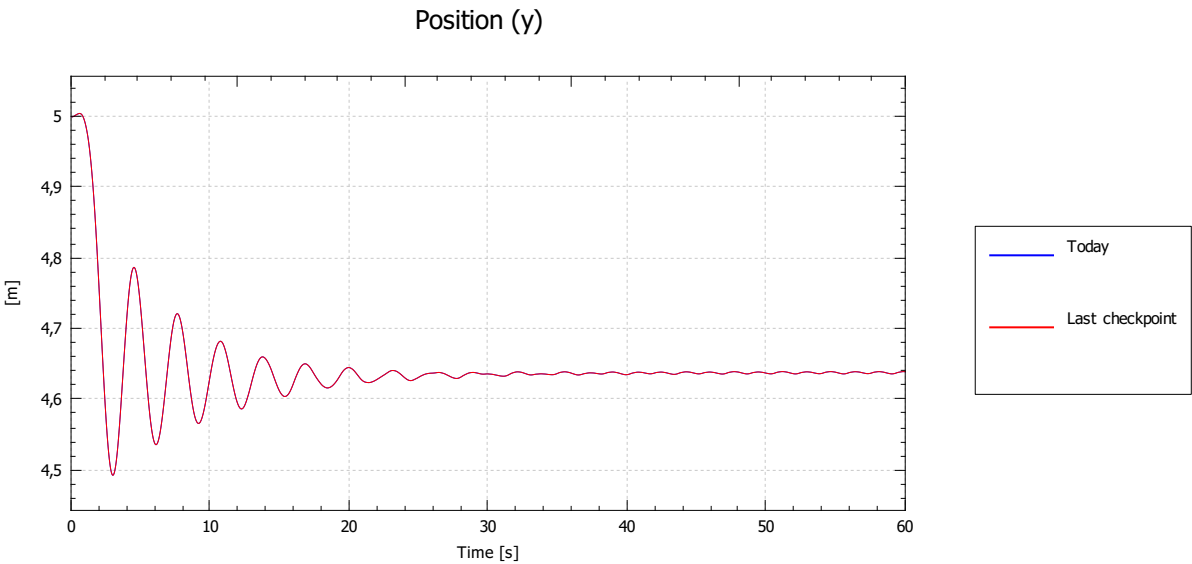
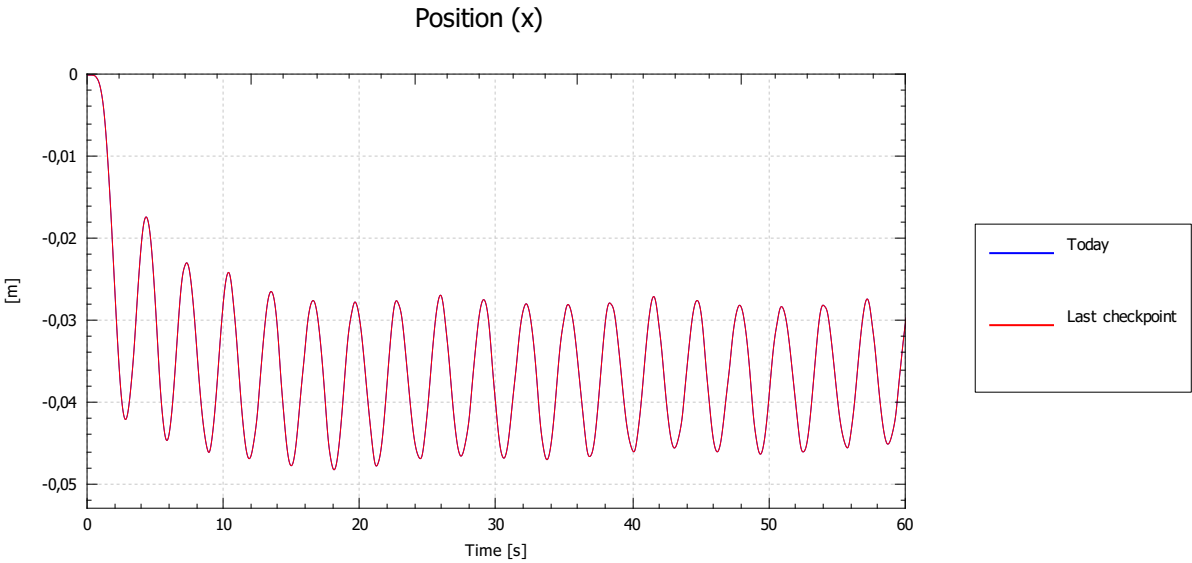


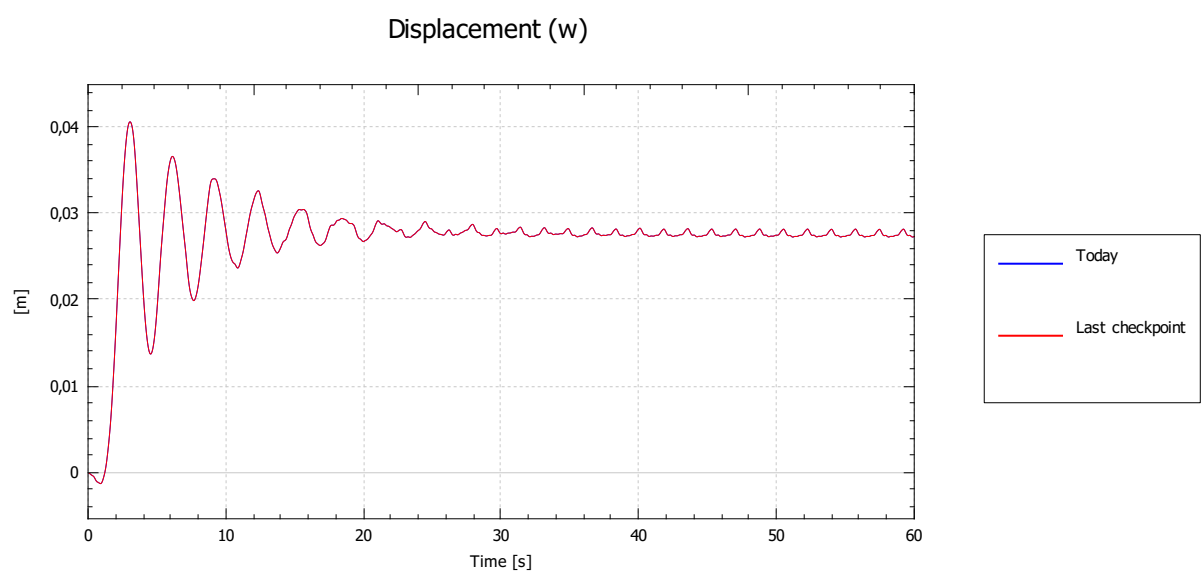
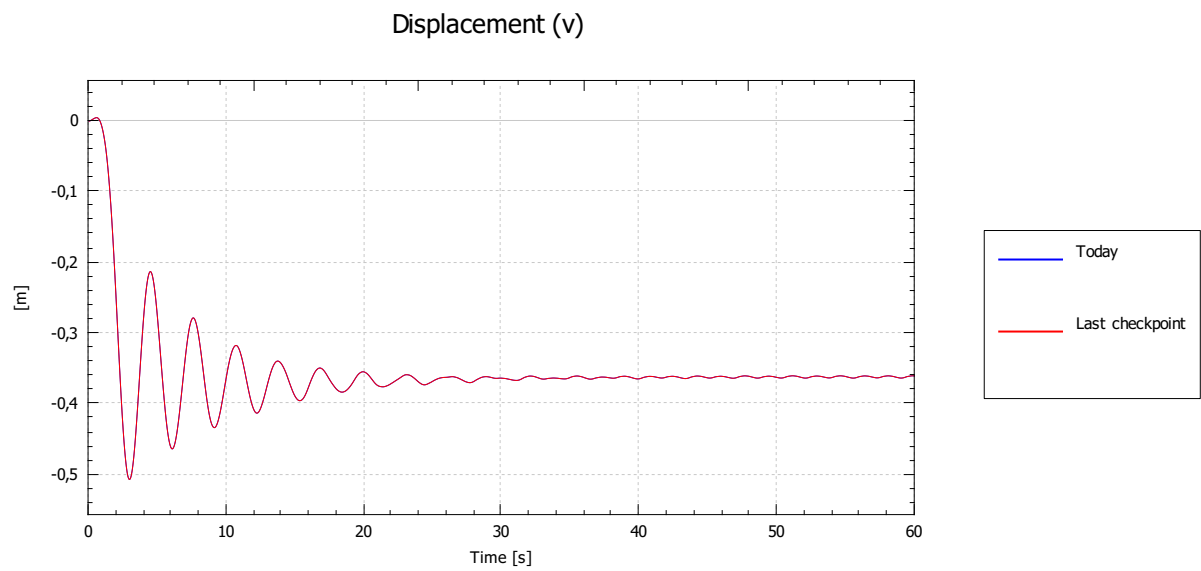
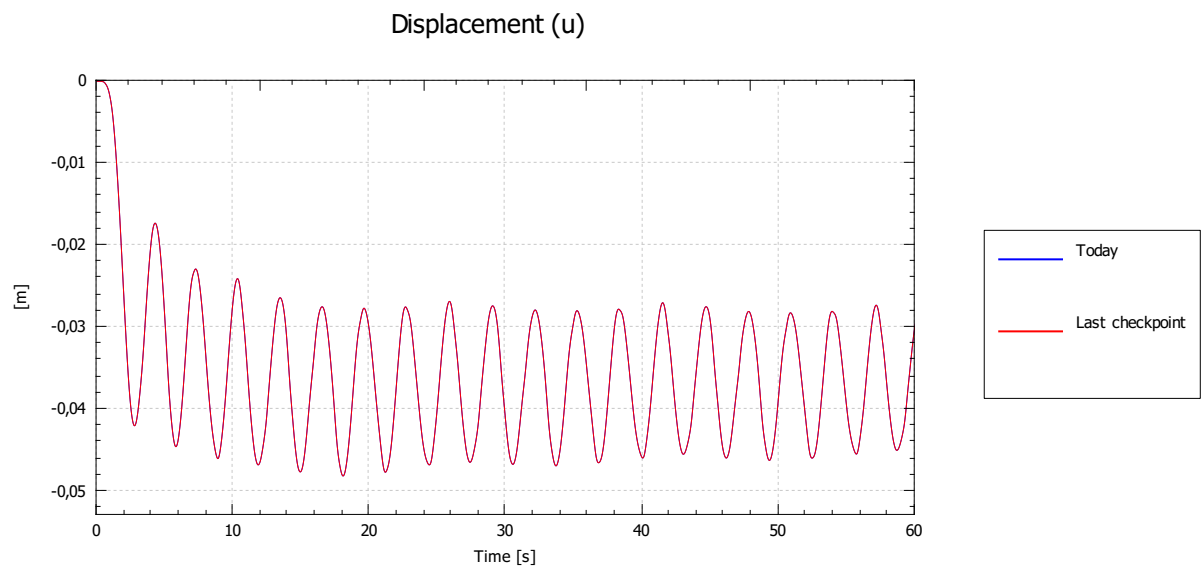
Tip deflection (in-plane)



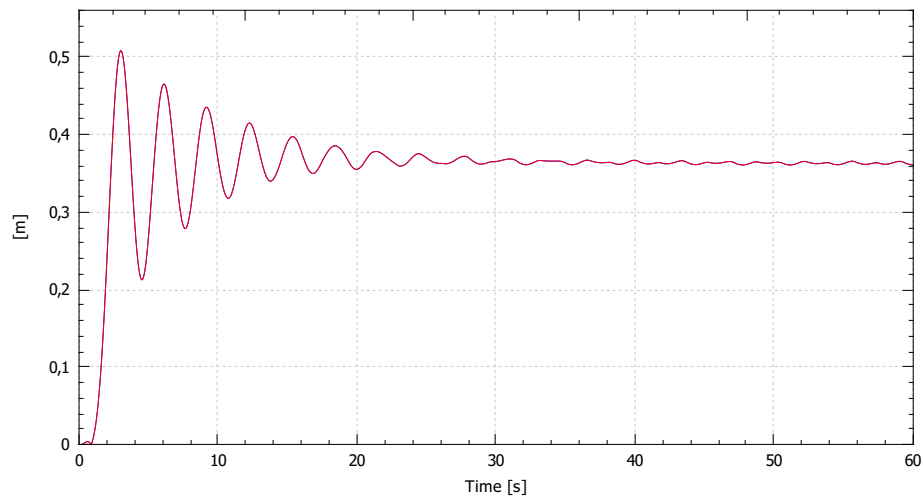
Root torque



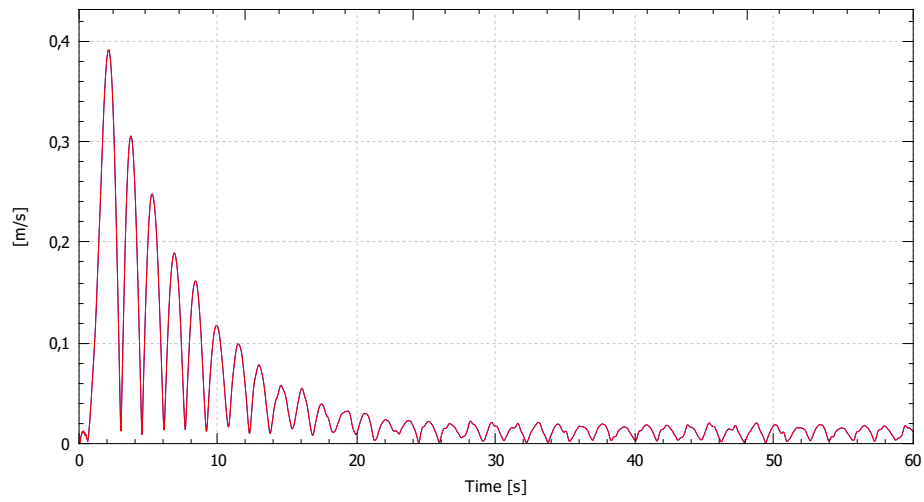




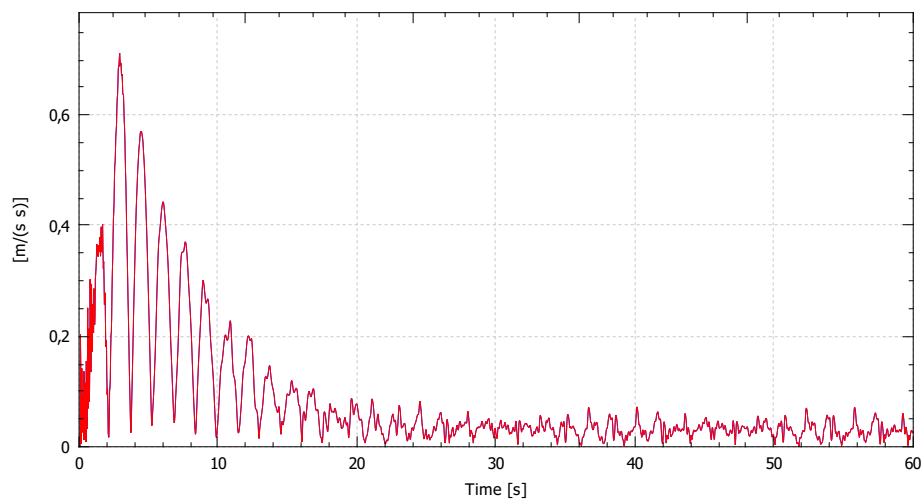
Displacement magnitude



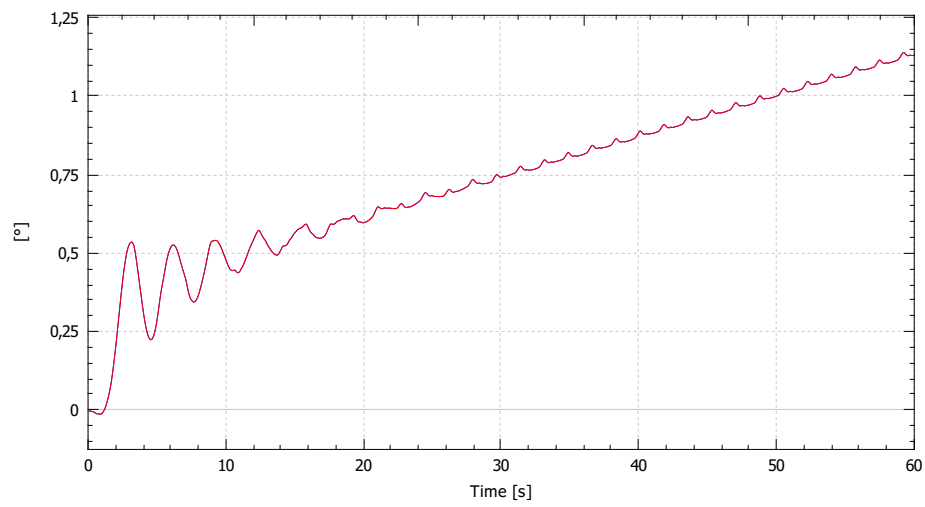
Speed



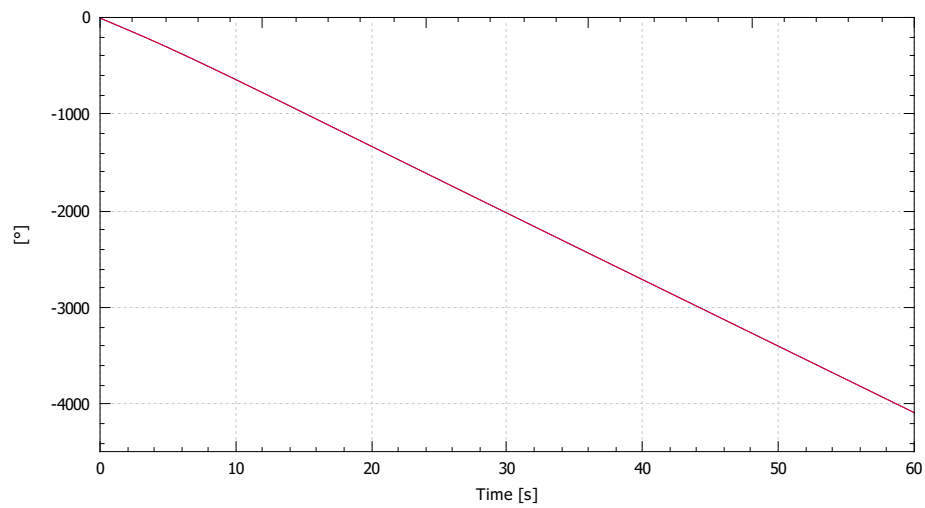
Acceleration, magnitude



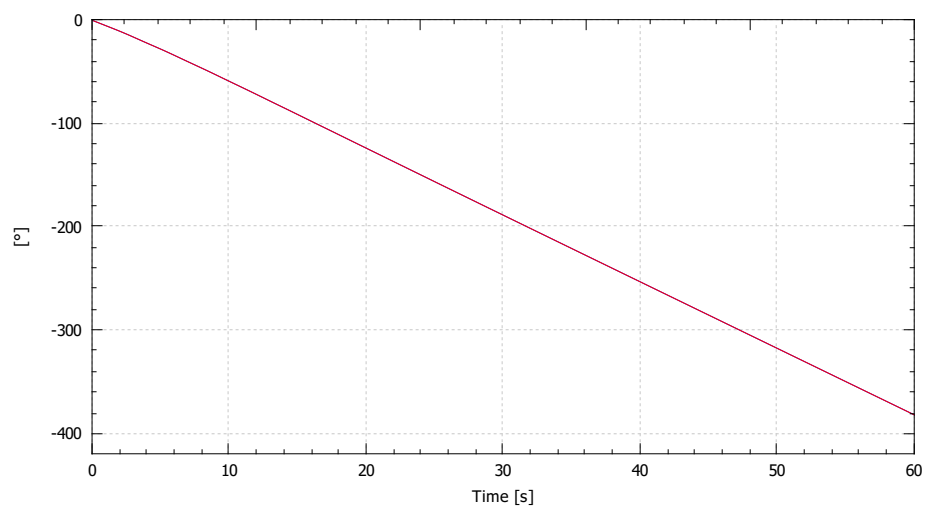
Rotational displacement (ru)



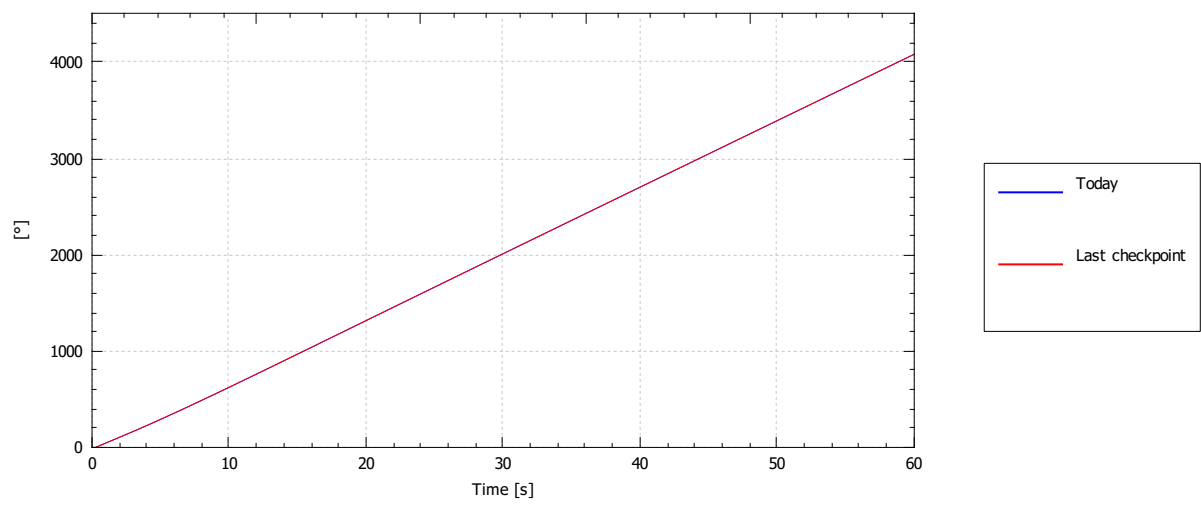
Rotational displacement (rv)



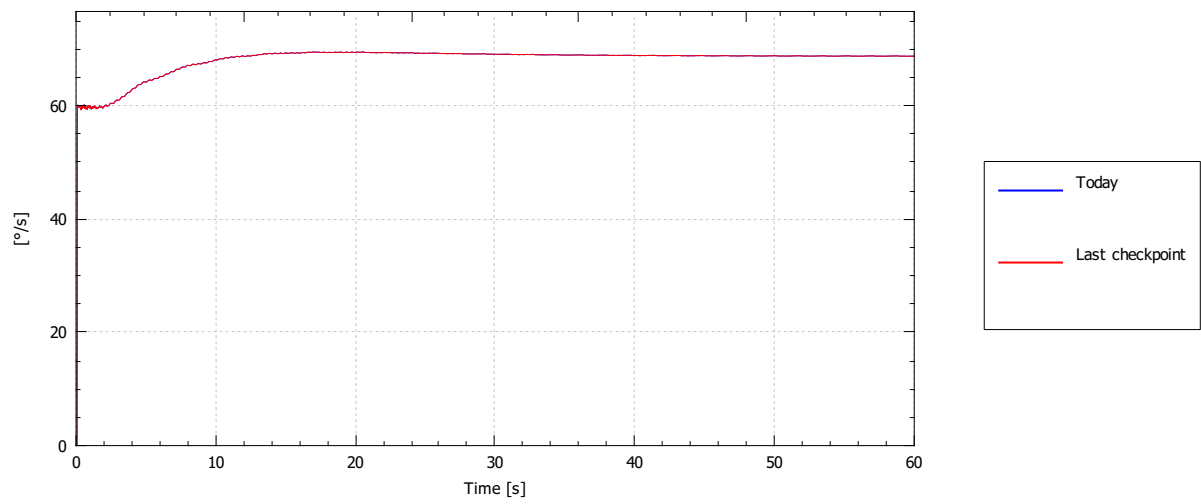
Rotational displacement (rw)



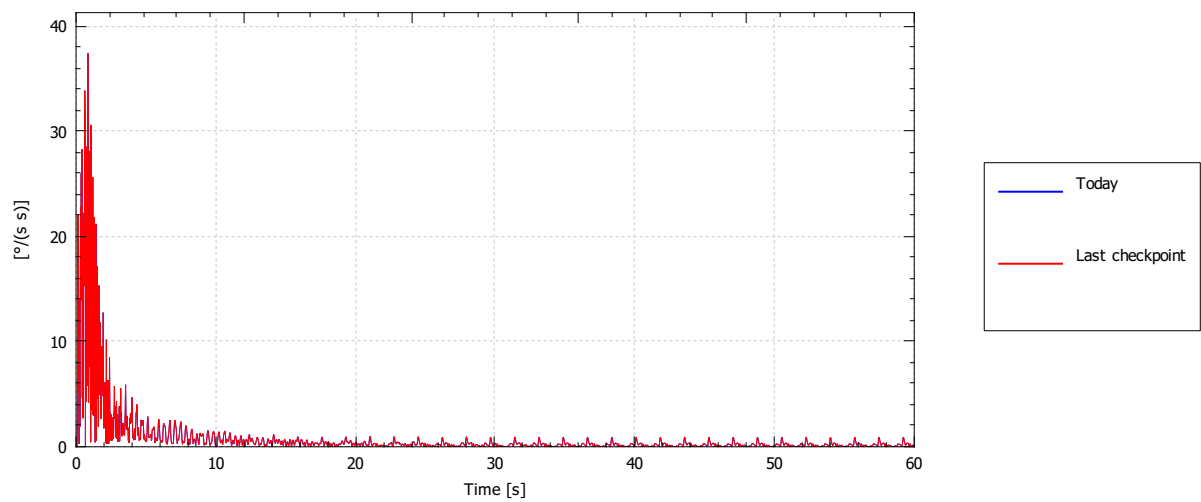
Rotational displacement magnitude



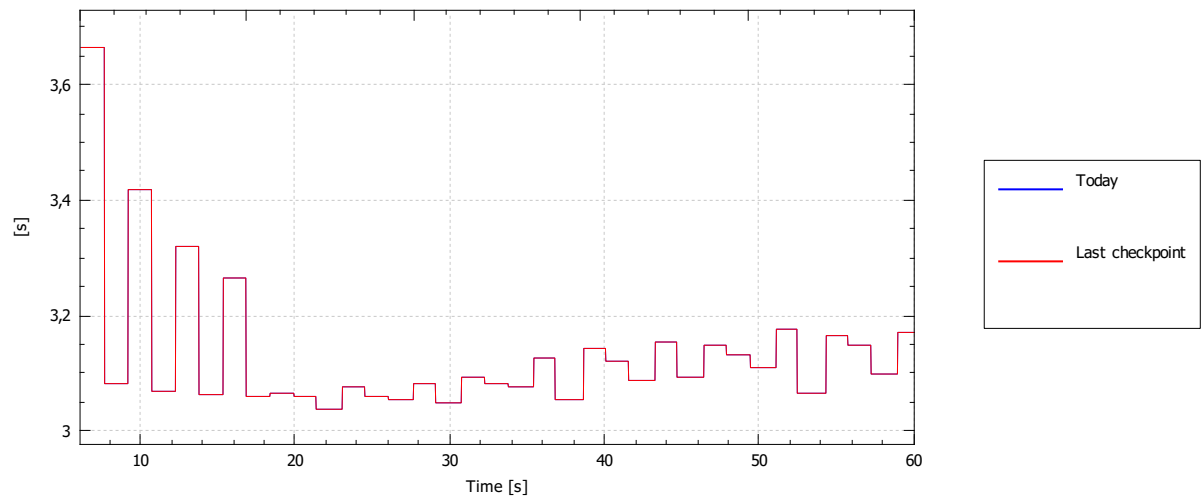
Rotational speed



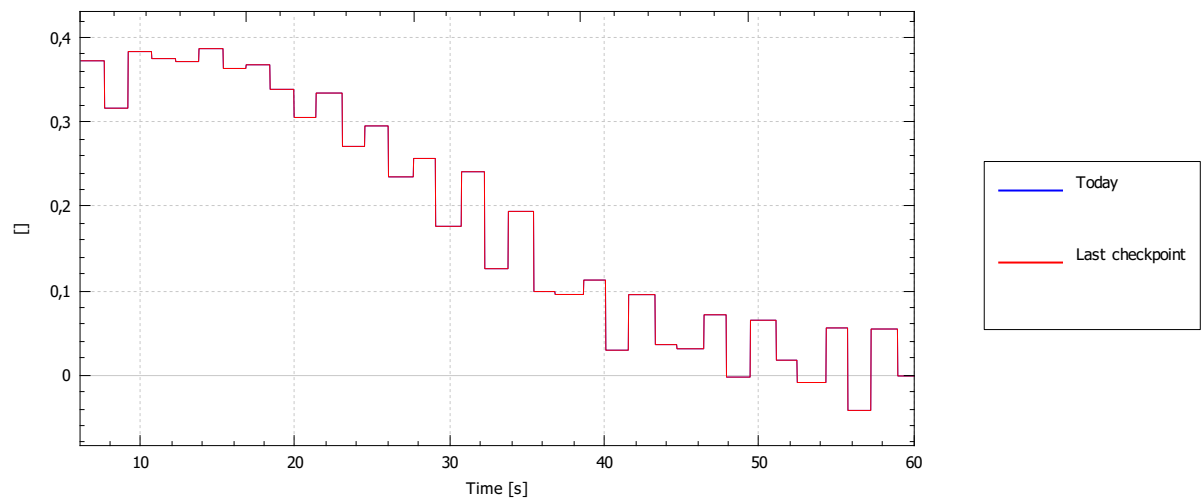
Rotational acceleration mag



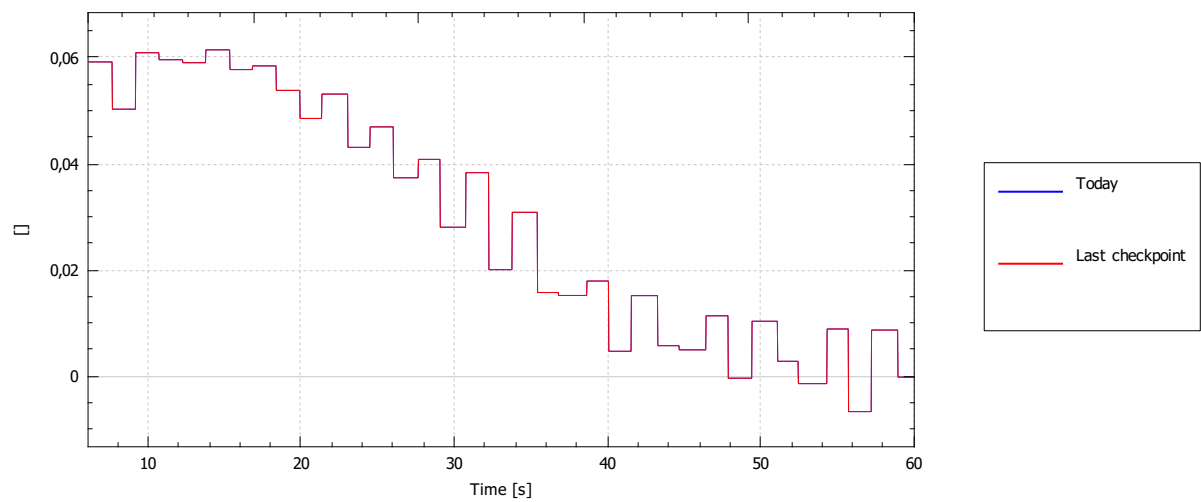
Displacement period



Displacement logarithmic decrement

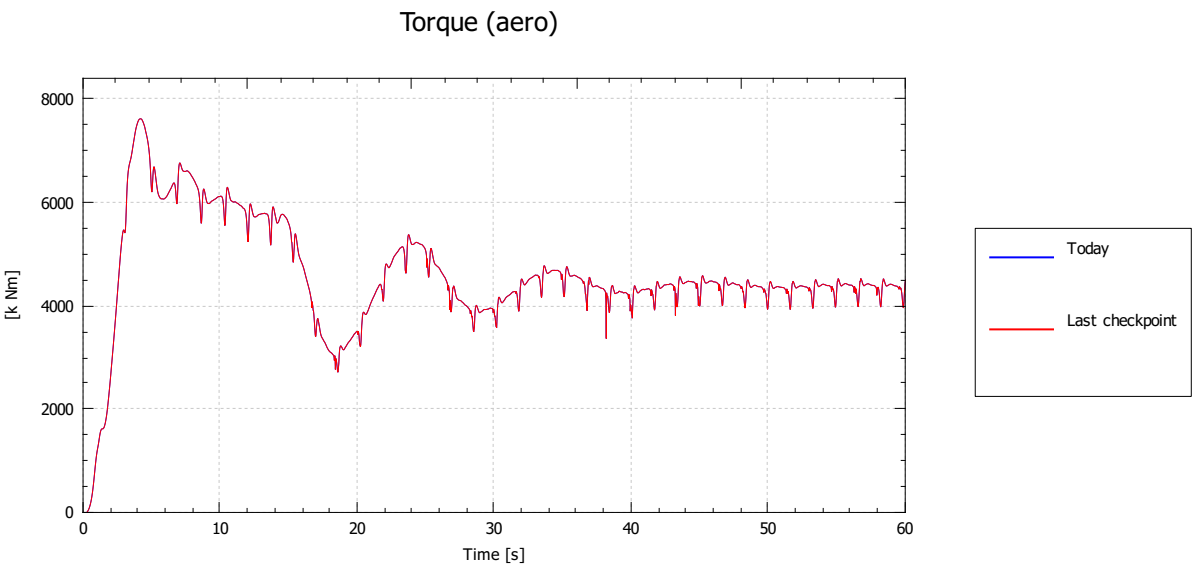
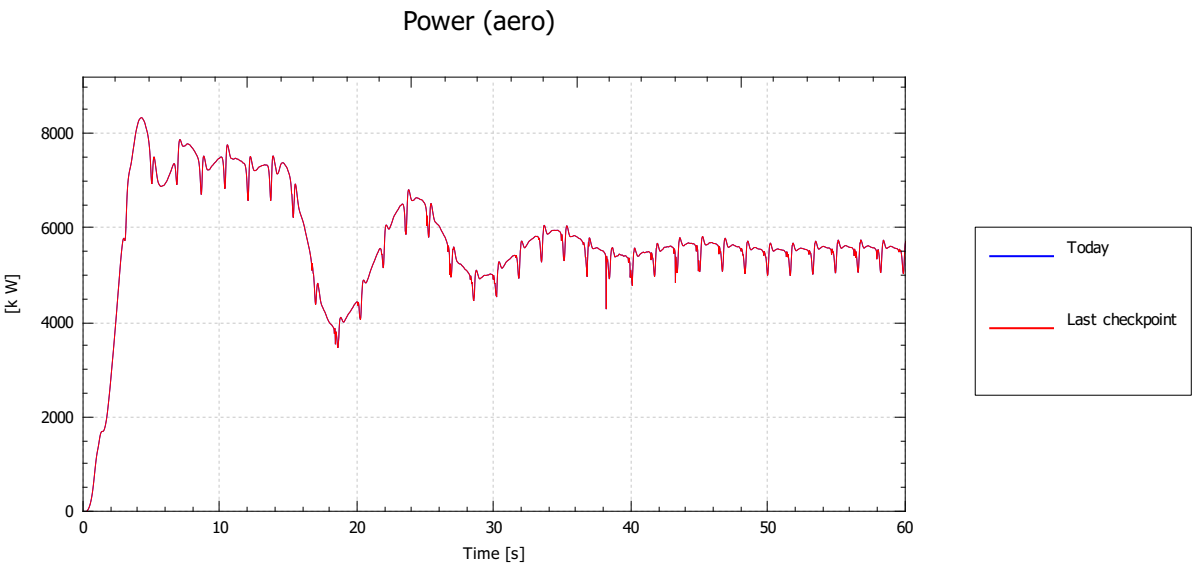


Displacement damping ratio

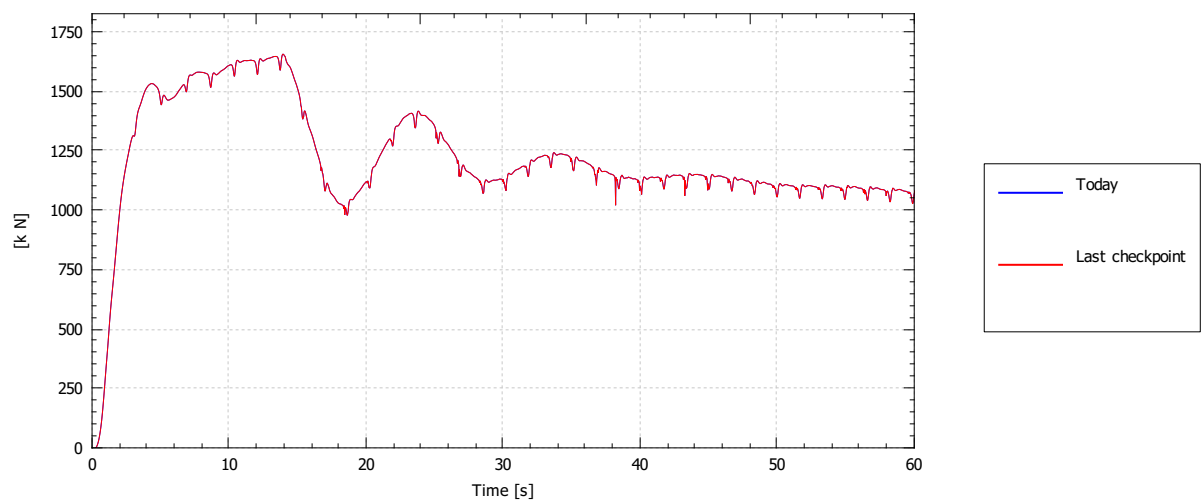


Load case: Blade type

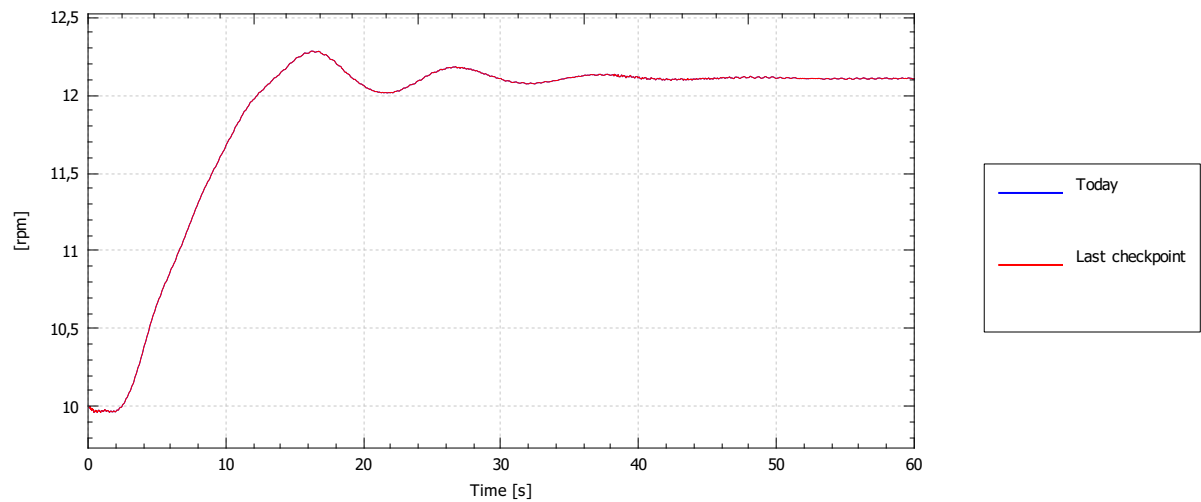
Rotor



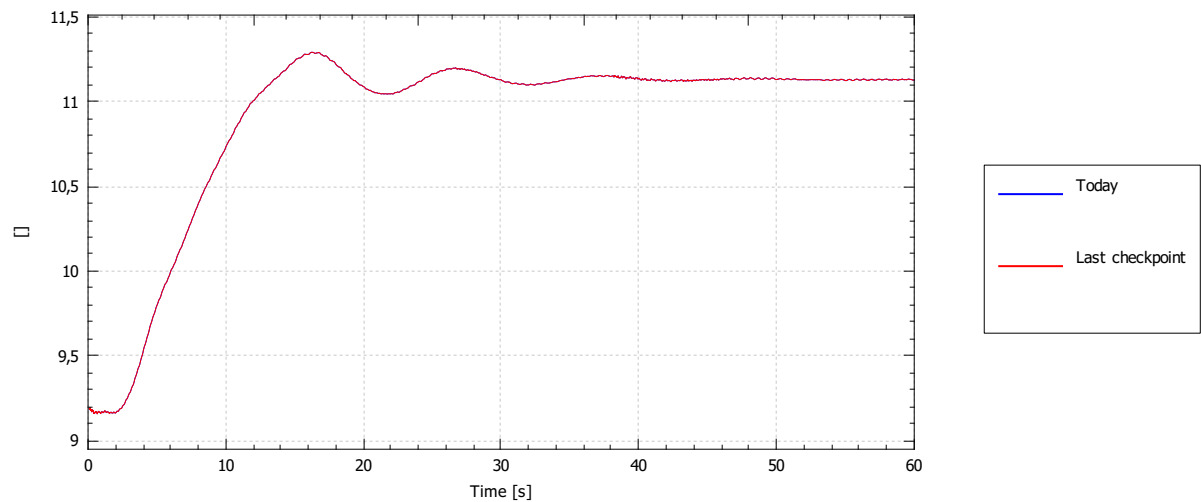
Thrust (aero)



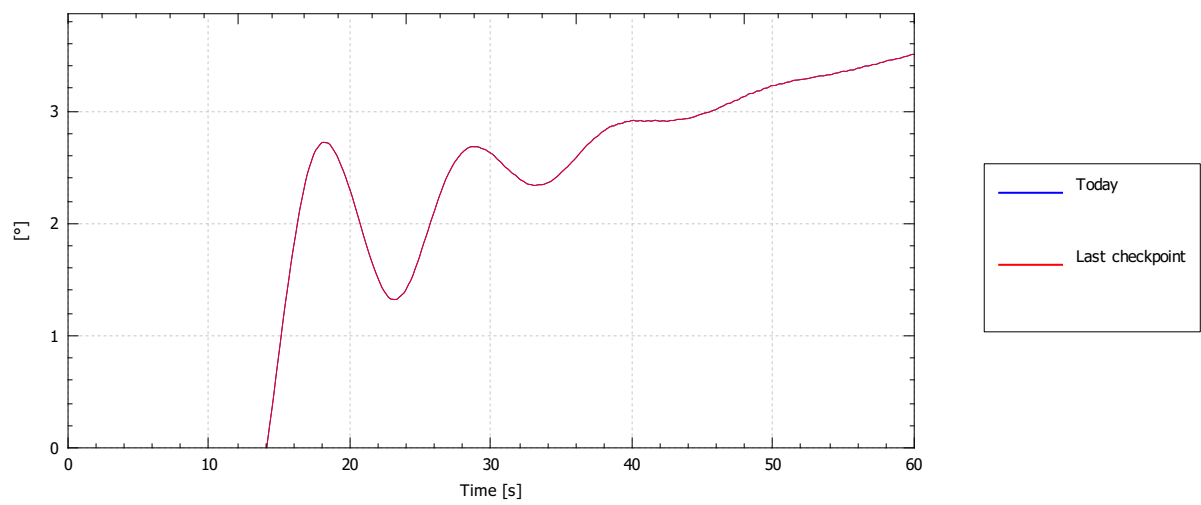
RPM



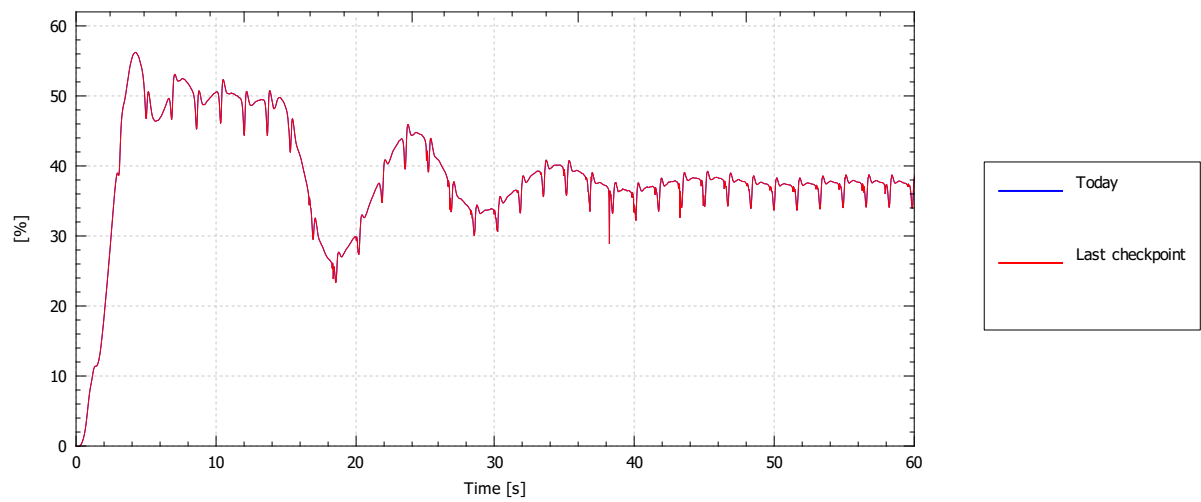
TSR



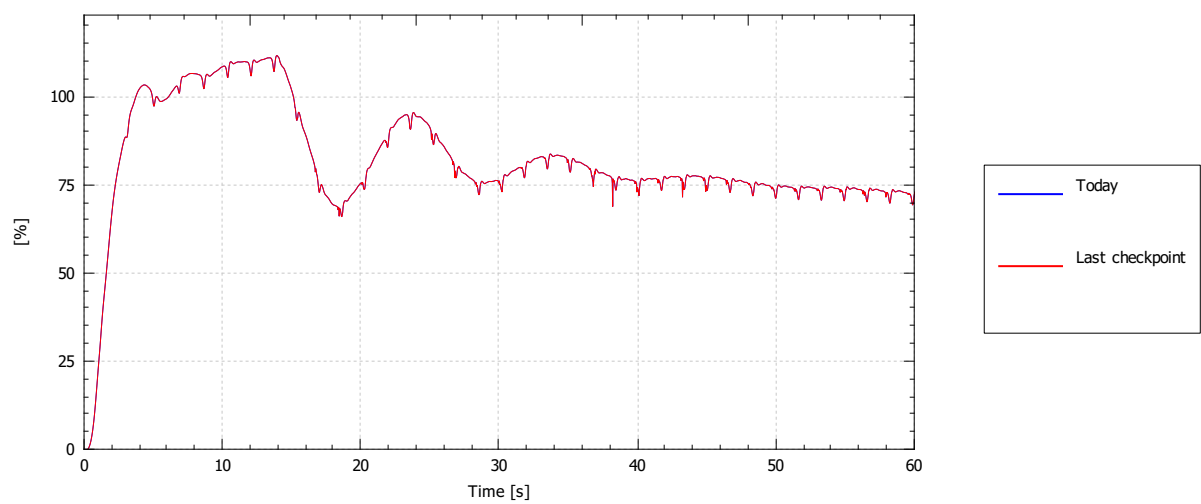
Representative demanded pitch angle



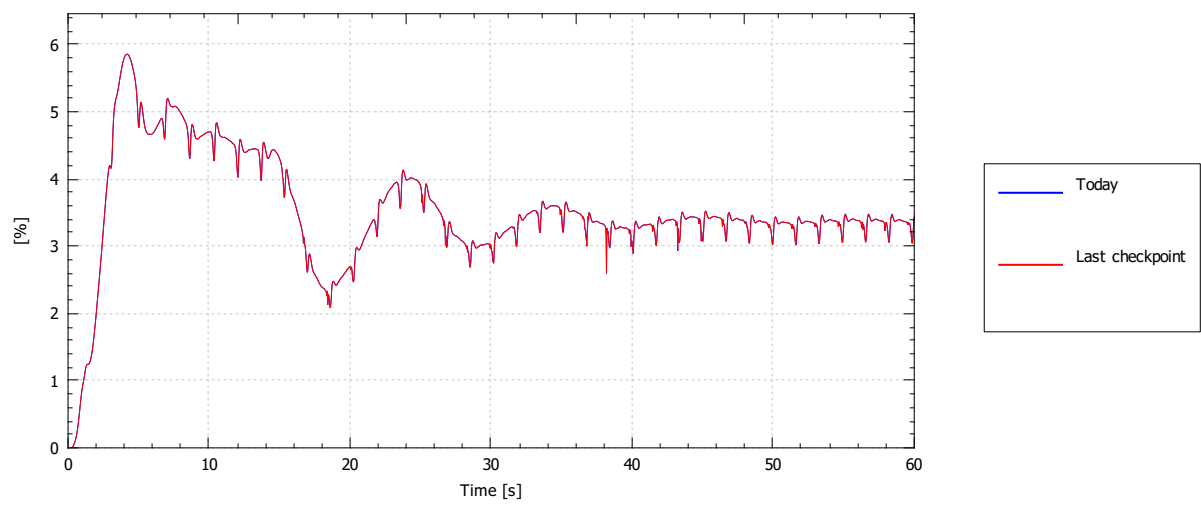
Power coef. (CP)



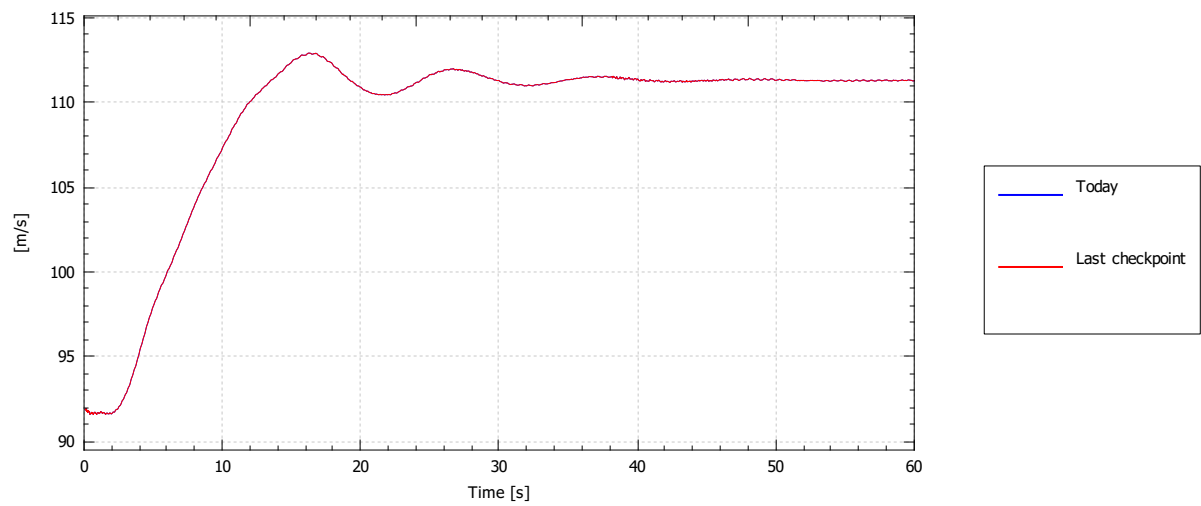
Thrust coef. (CT)



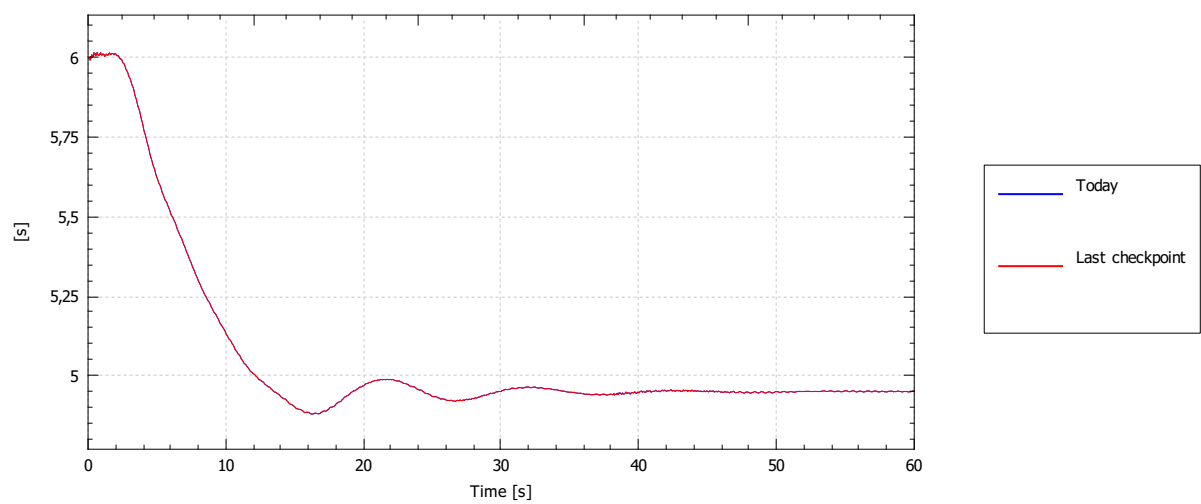
Torque coef. (CQ)



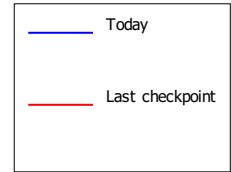
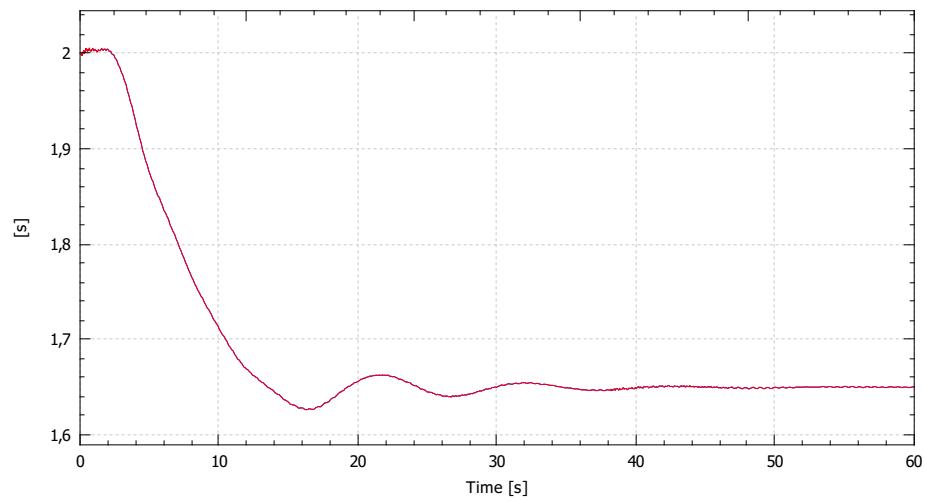
Tip speed



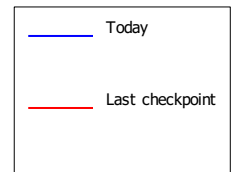
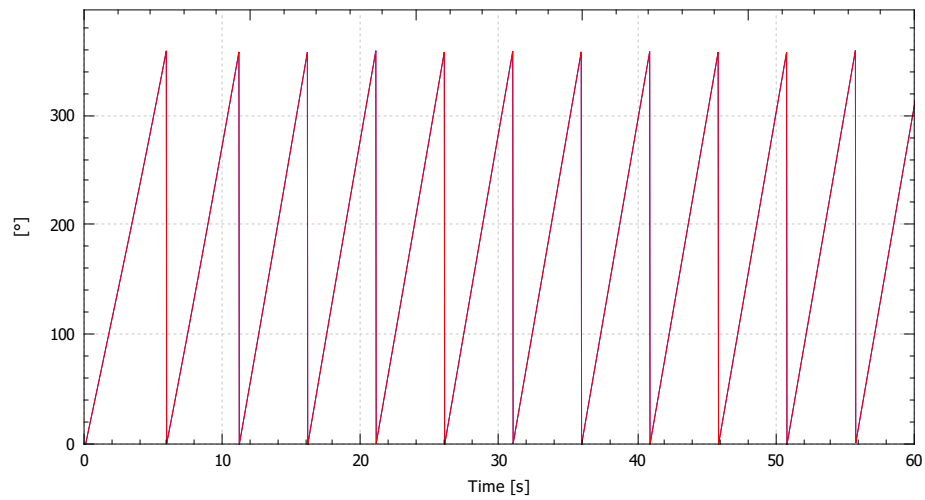
1P (one revolution)



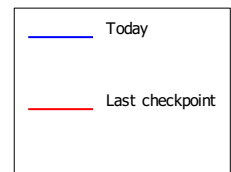
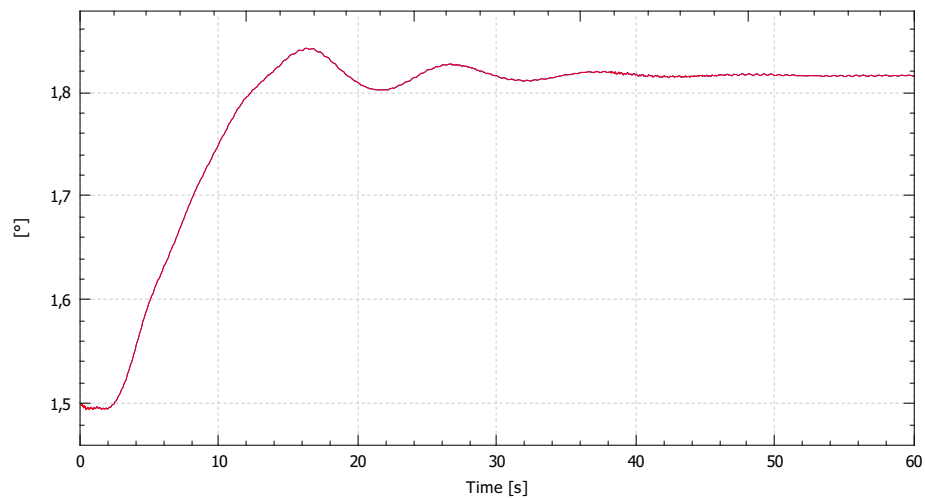
nP (blade passing)



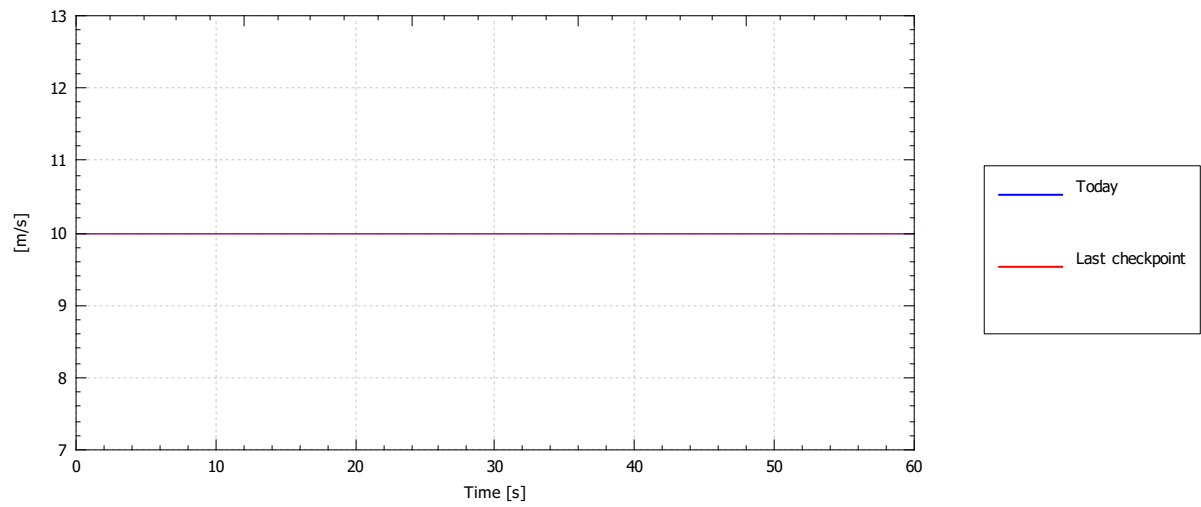
Azimuth angle



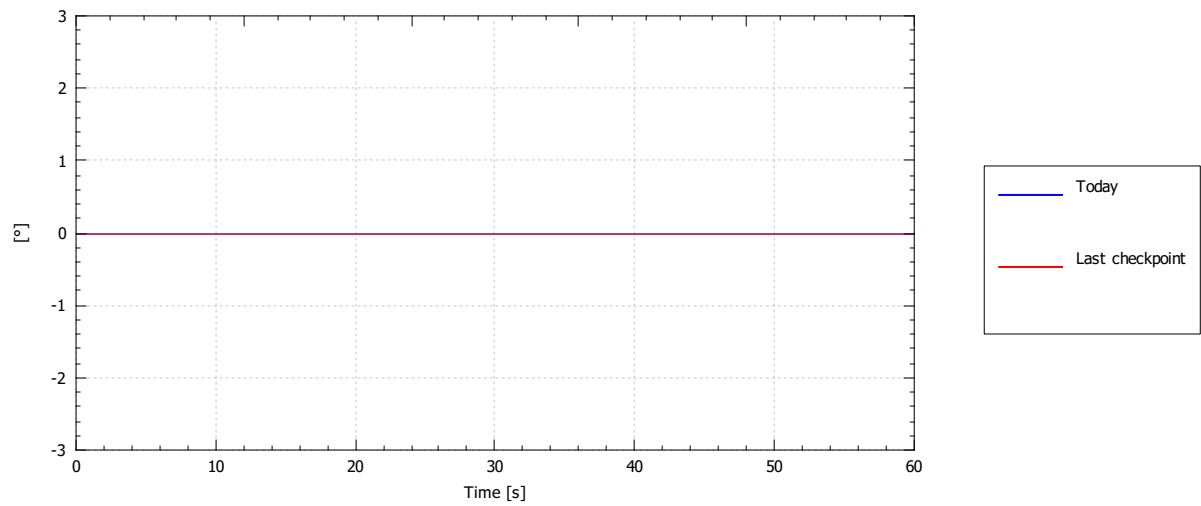
Rotation per timestep



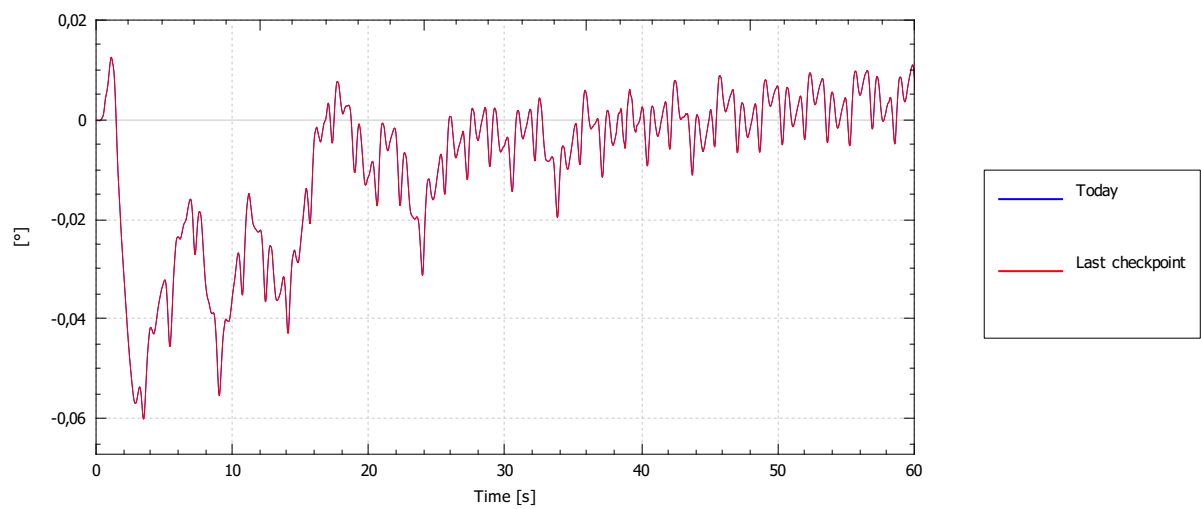
Wind speed at hub, magnitude

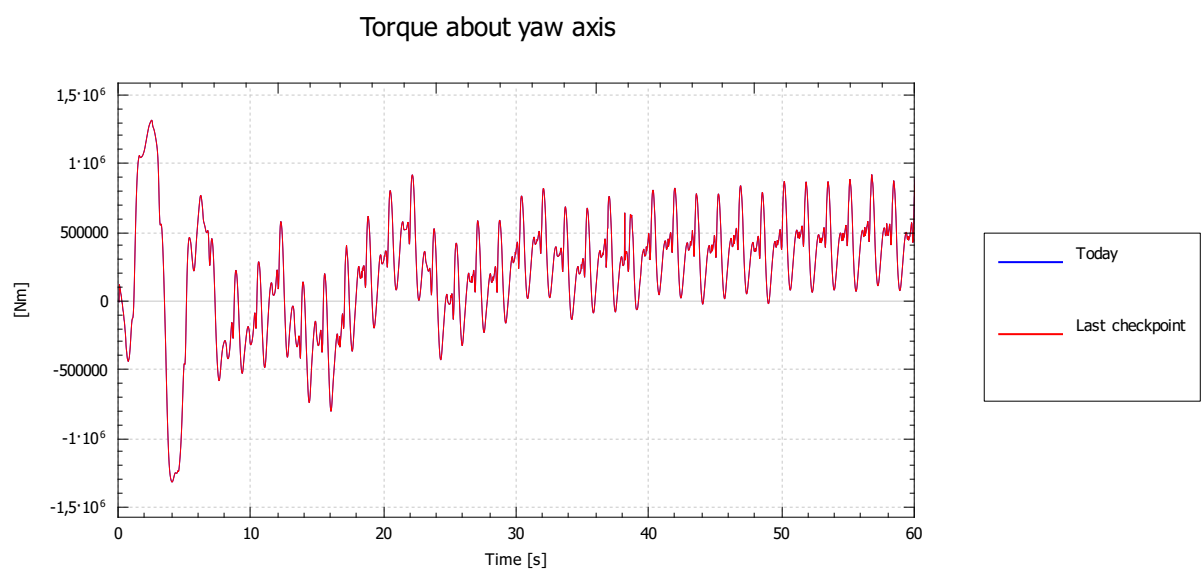
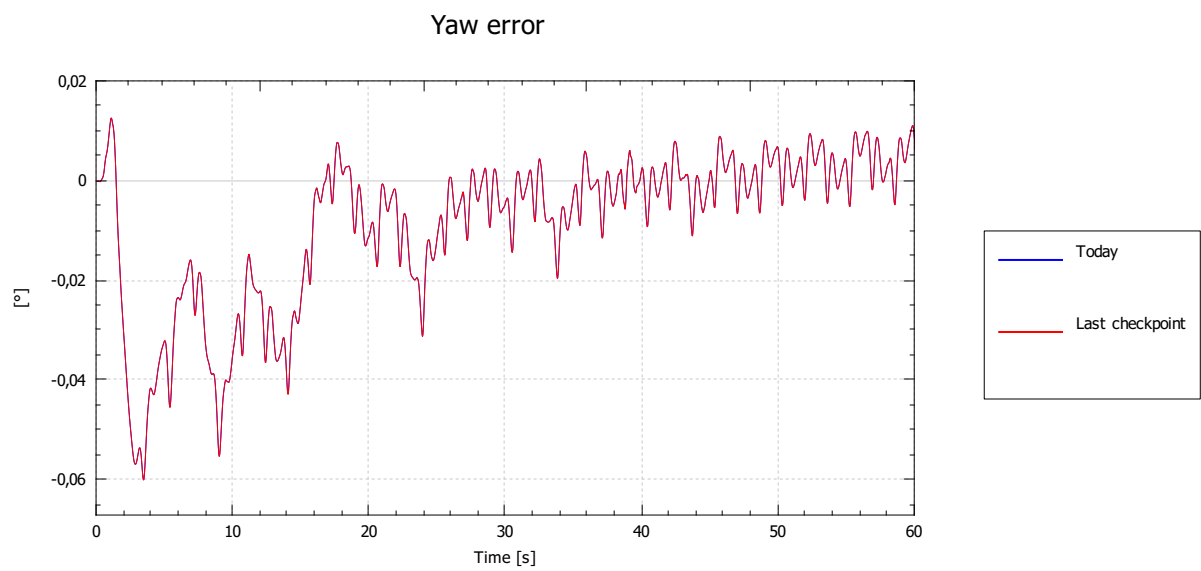
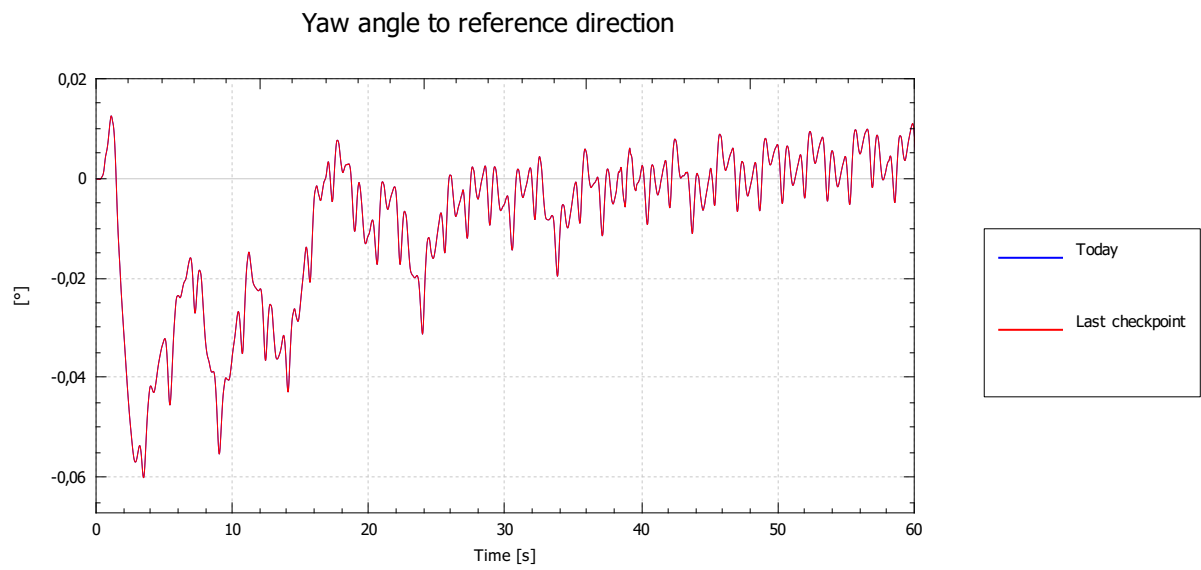


Wind angle at hub

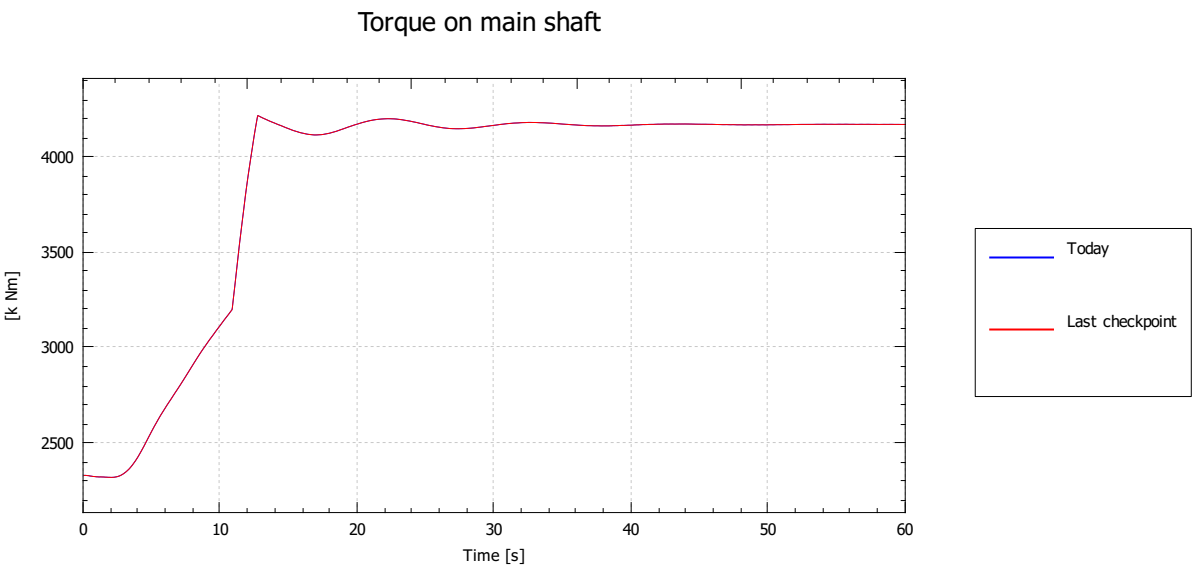
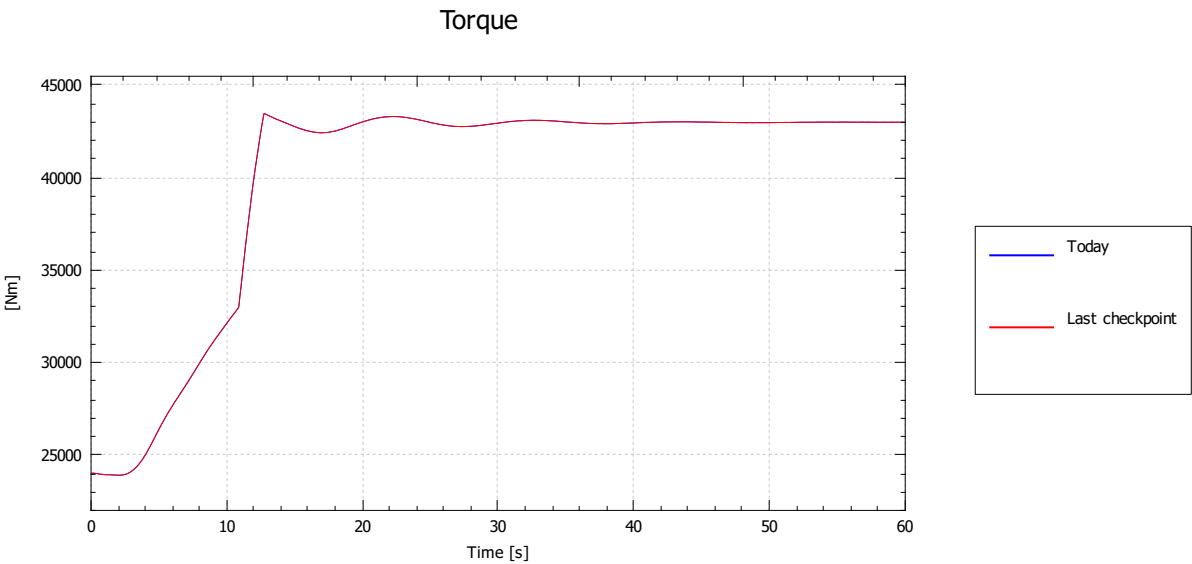
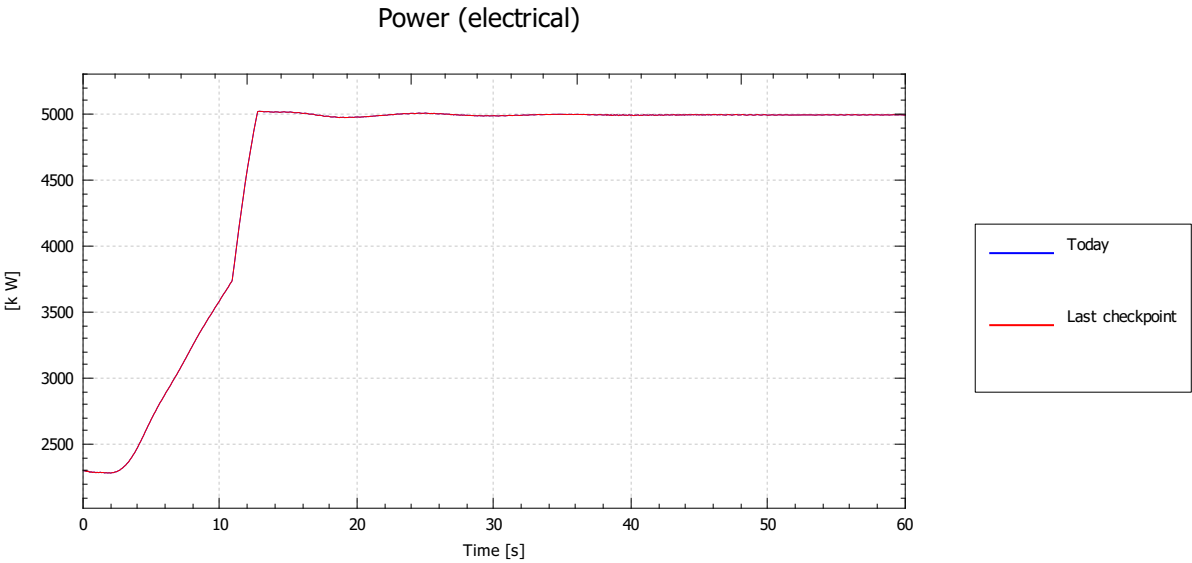


Yaw angle relative to forward

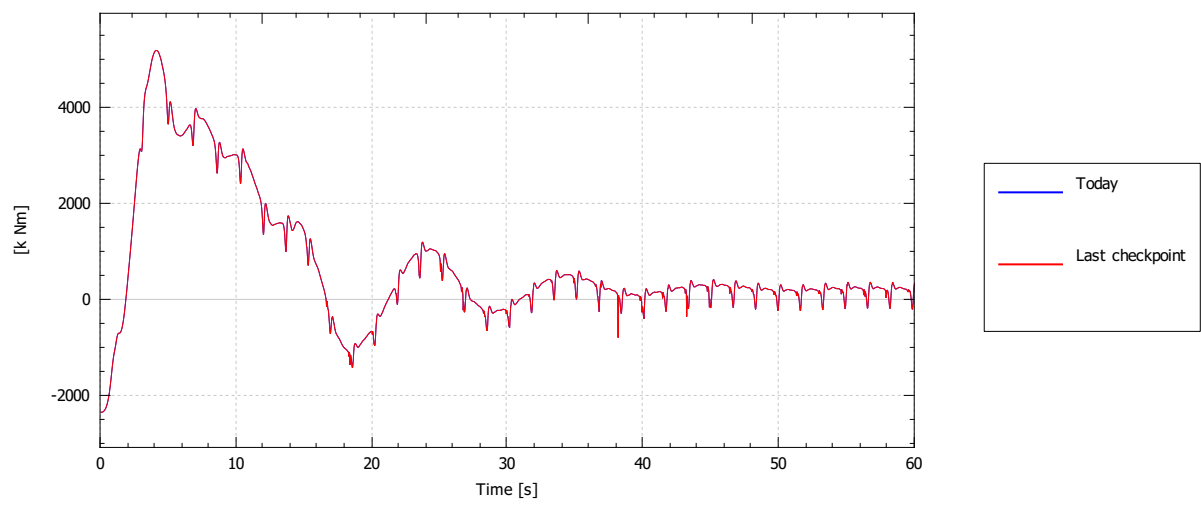




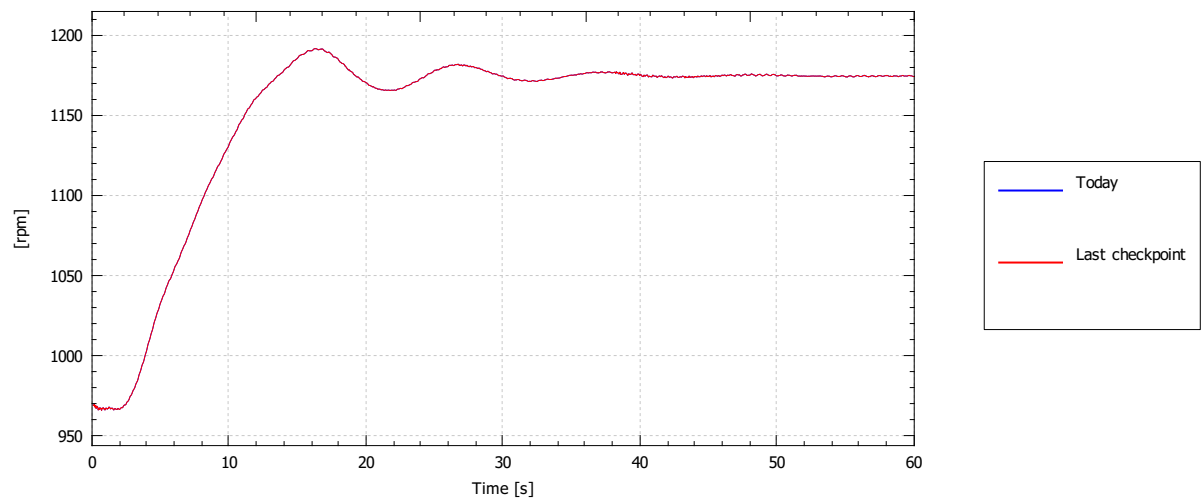
Generator



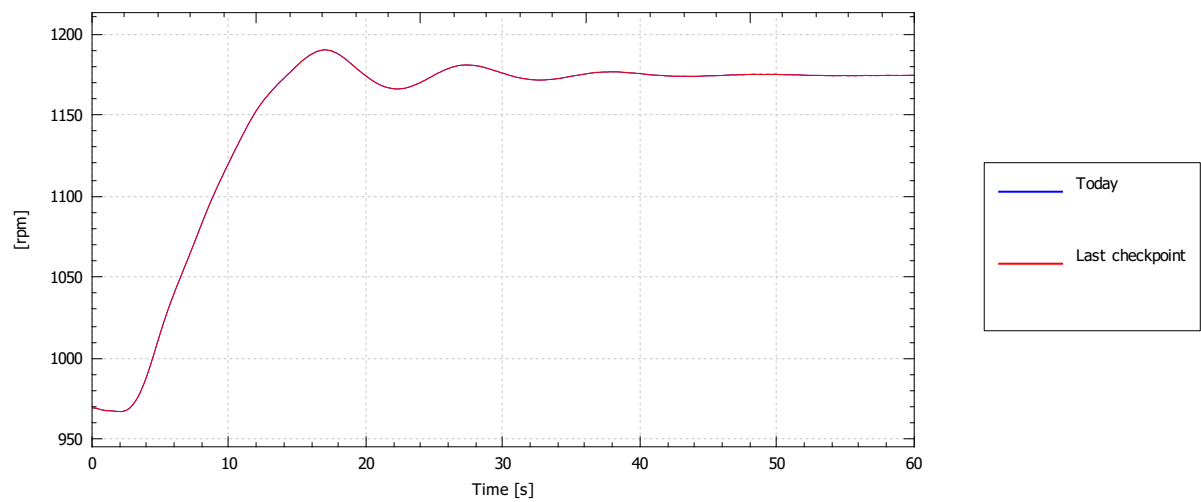
Torque diff. on main shaft



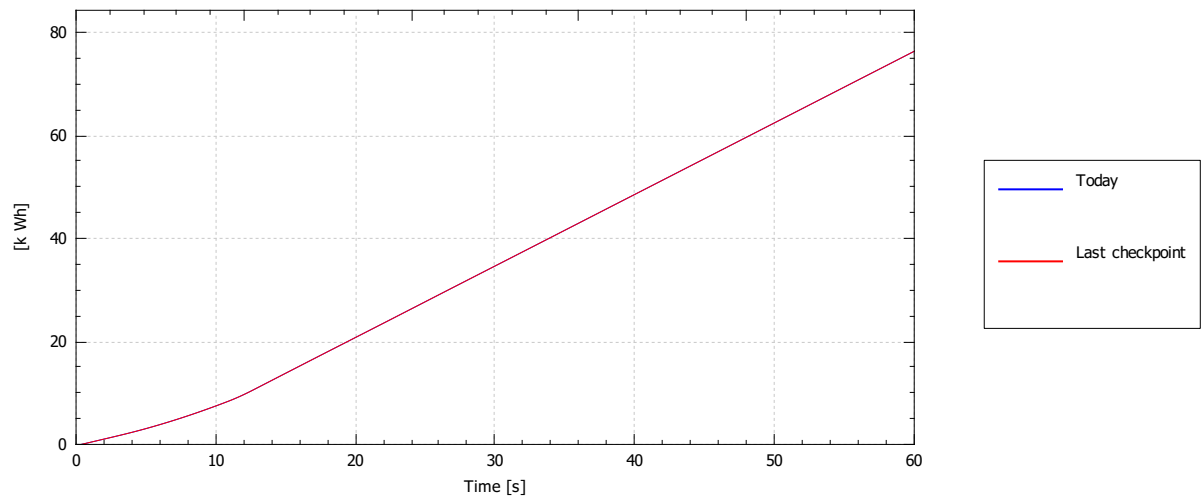
RPM



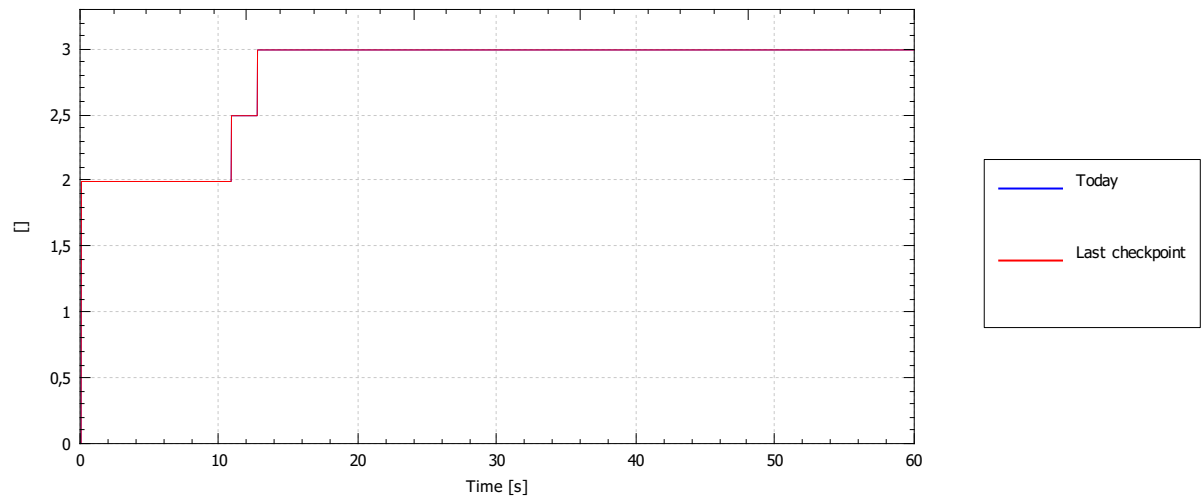
Filtered RPM



Electricity production

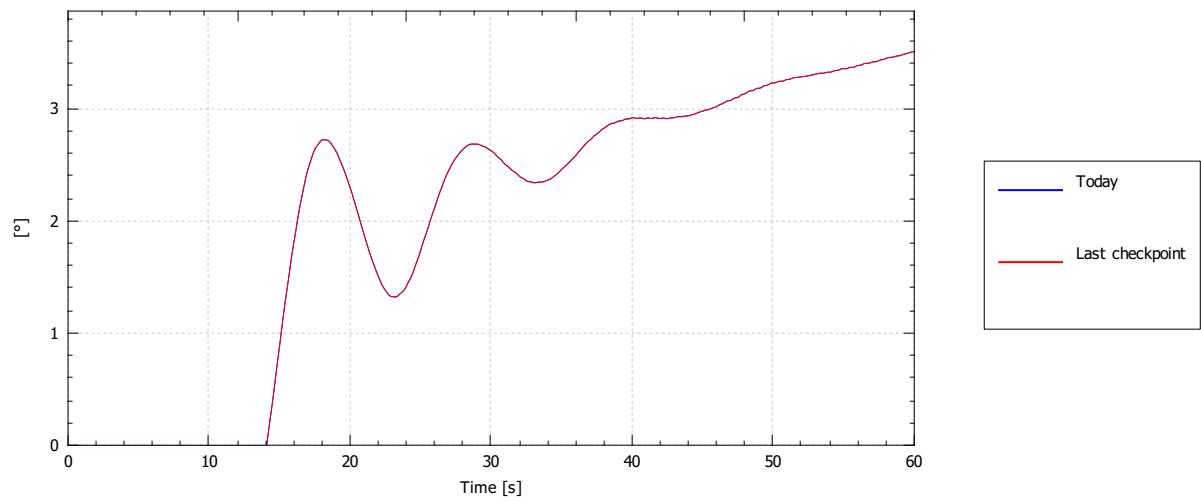


Region

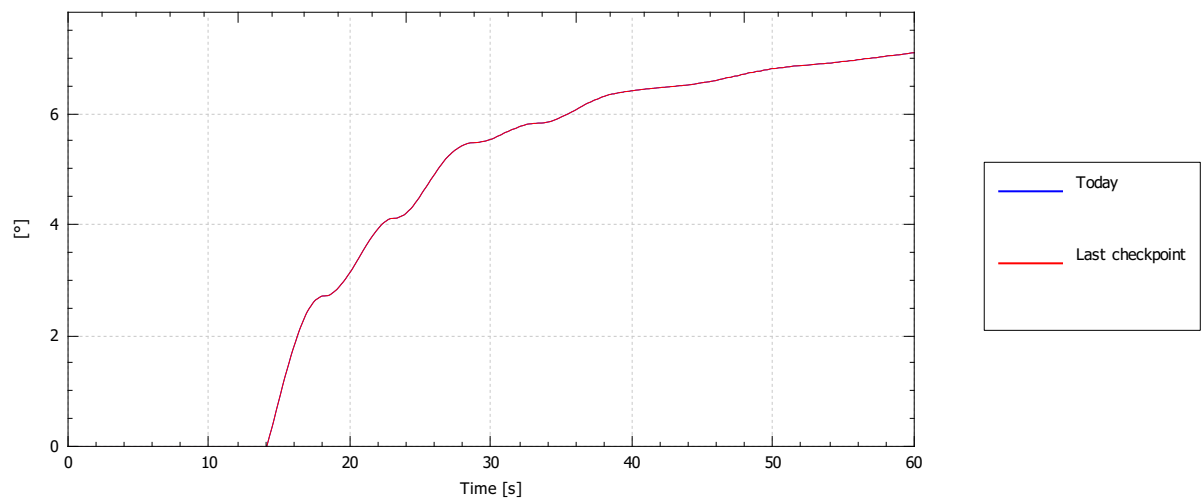


Demanded pitch controller

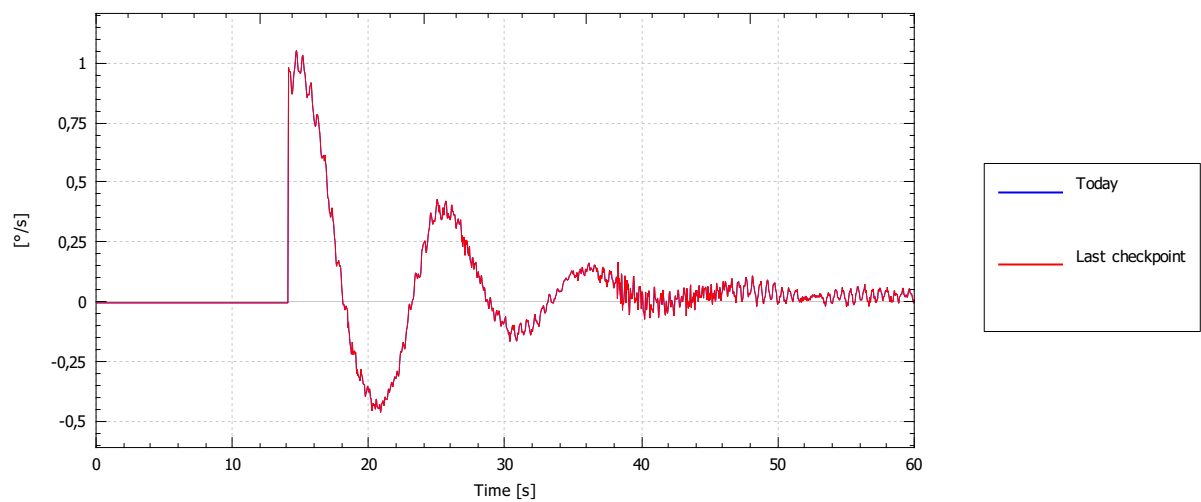
Demanded collective pitch angle



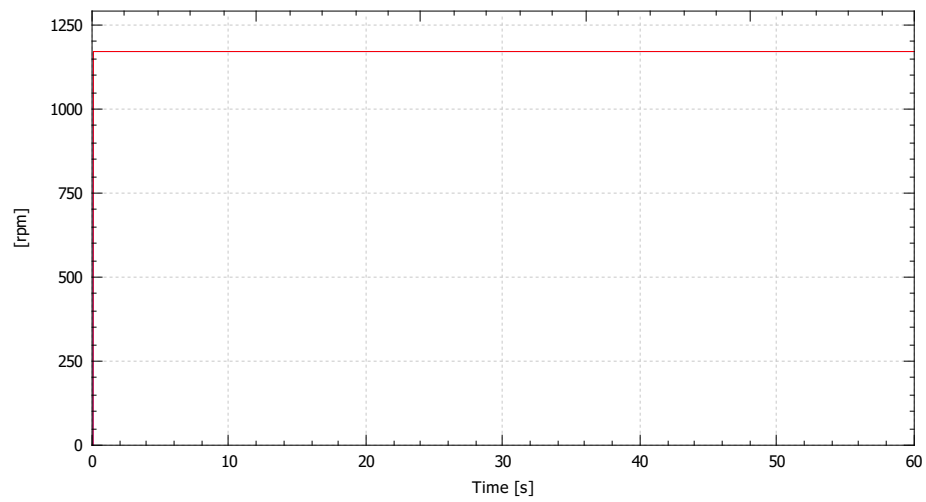
Cumulative demanded collective pitch angle



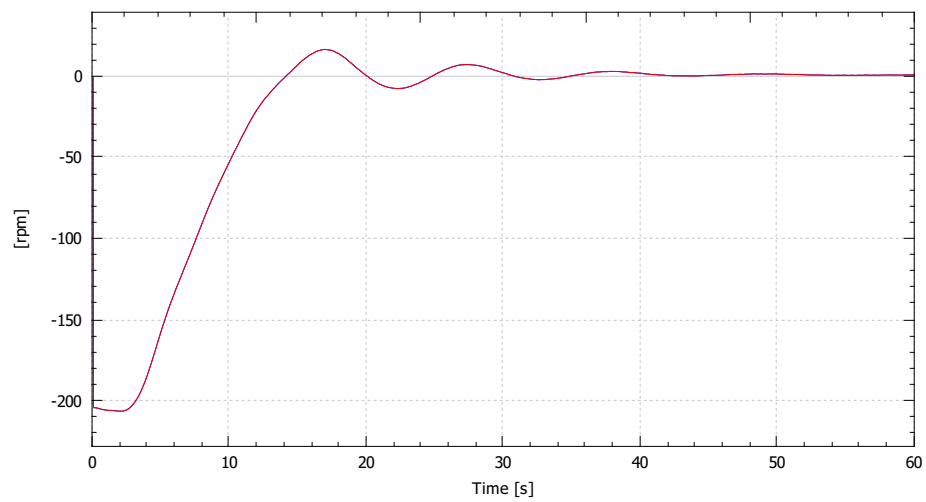
Demanded collective pitch angle rate



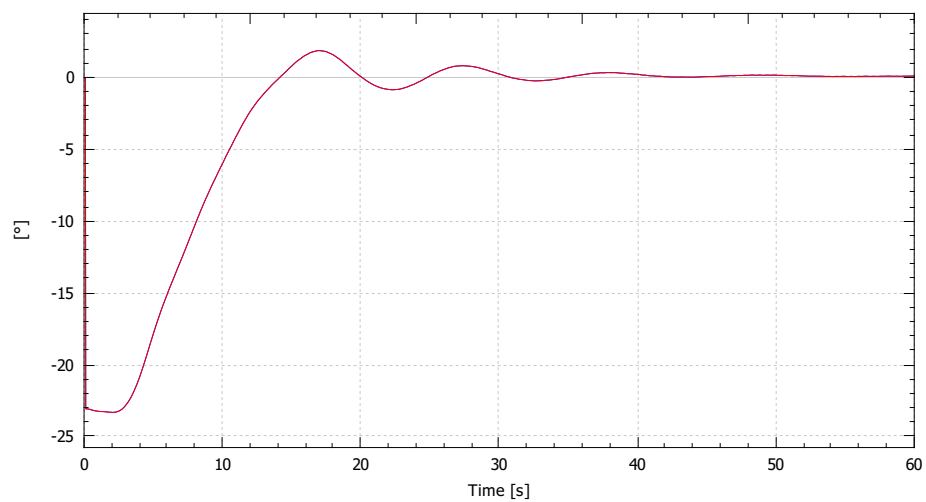
Set point



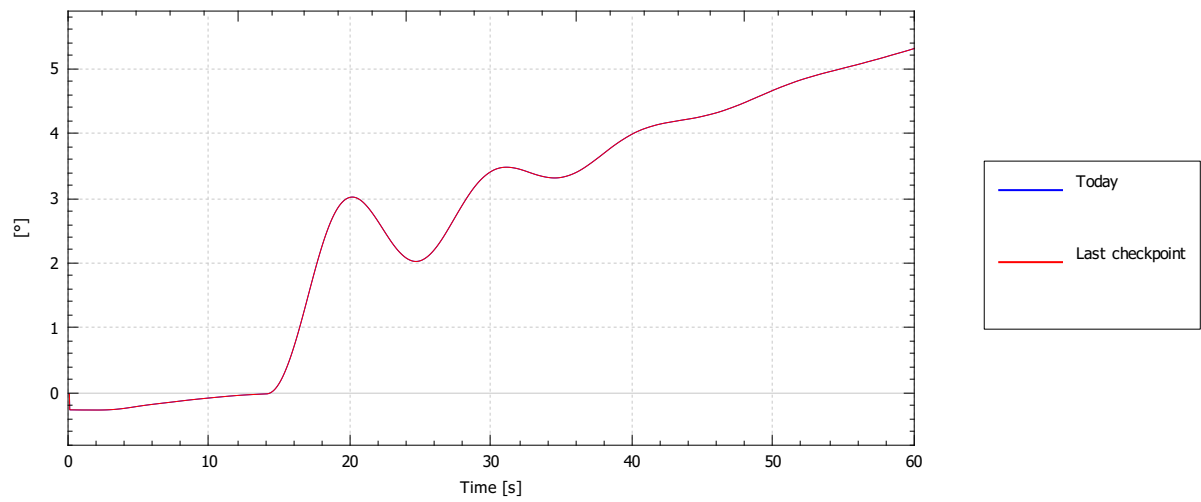
RPM error



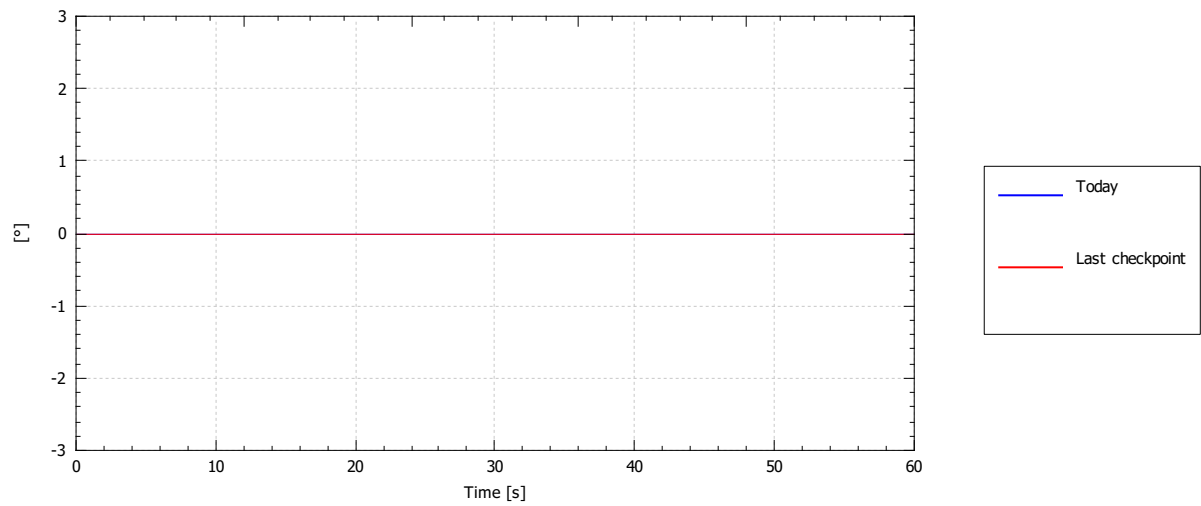
P term



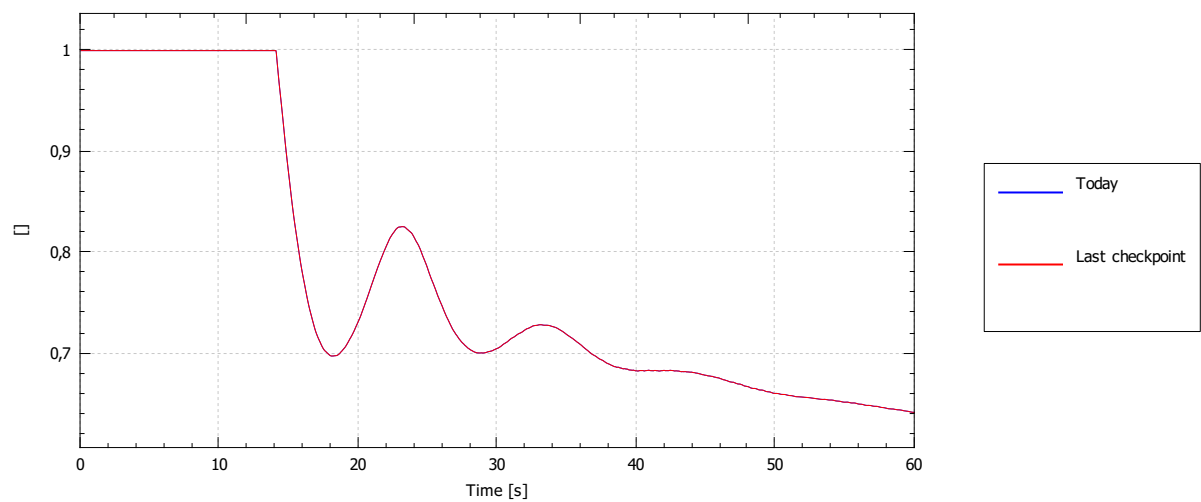
I term

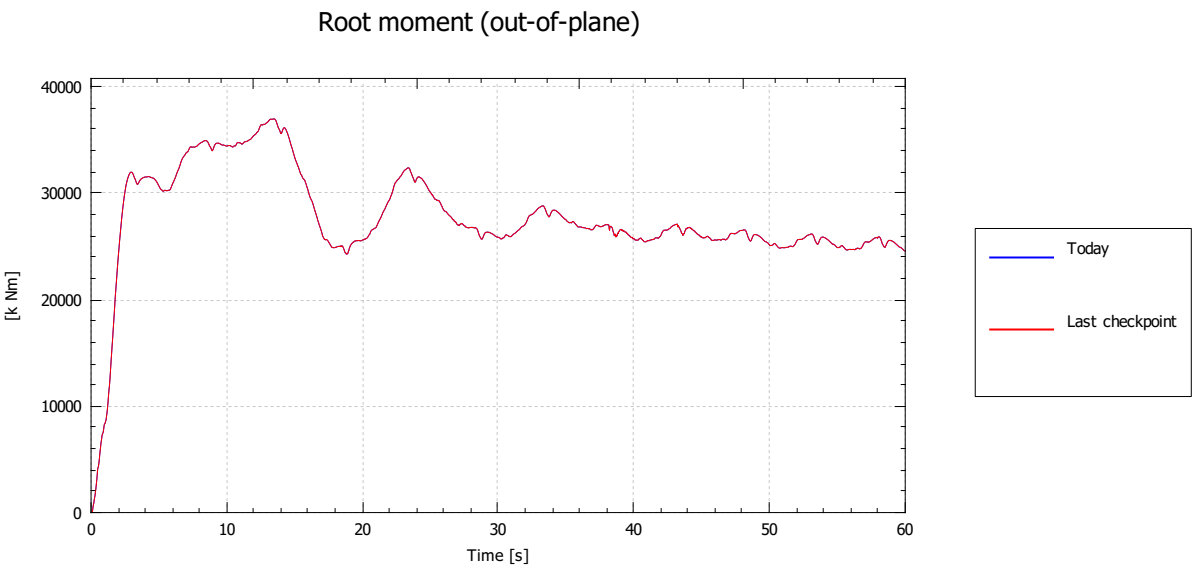
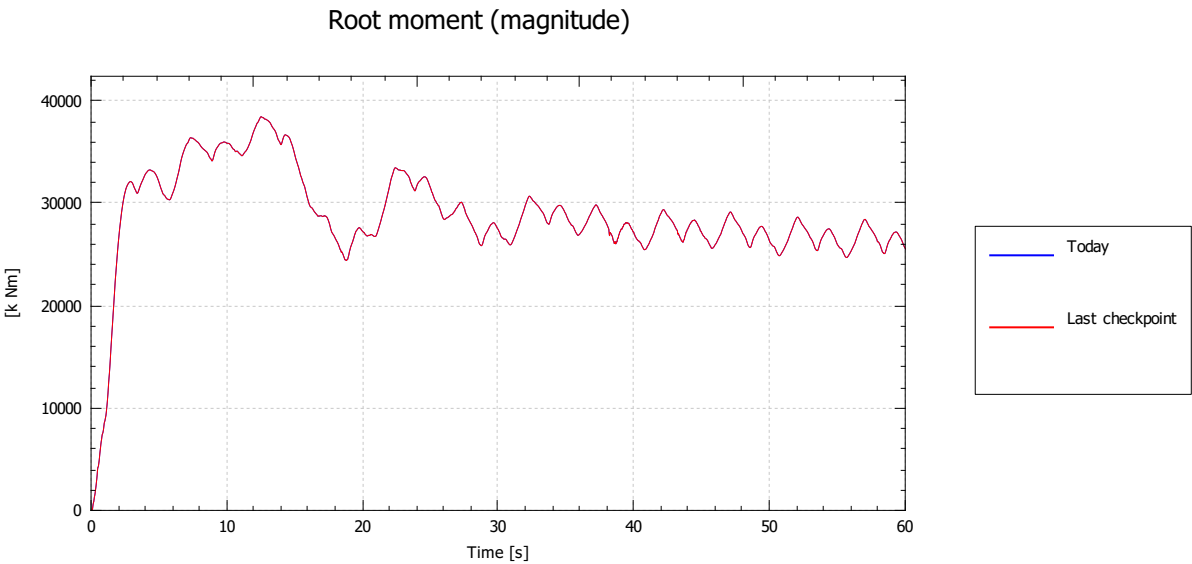
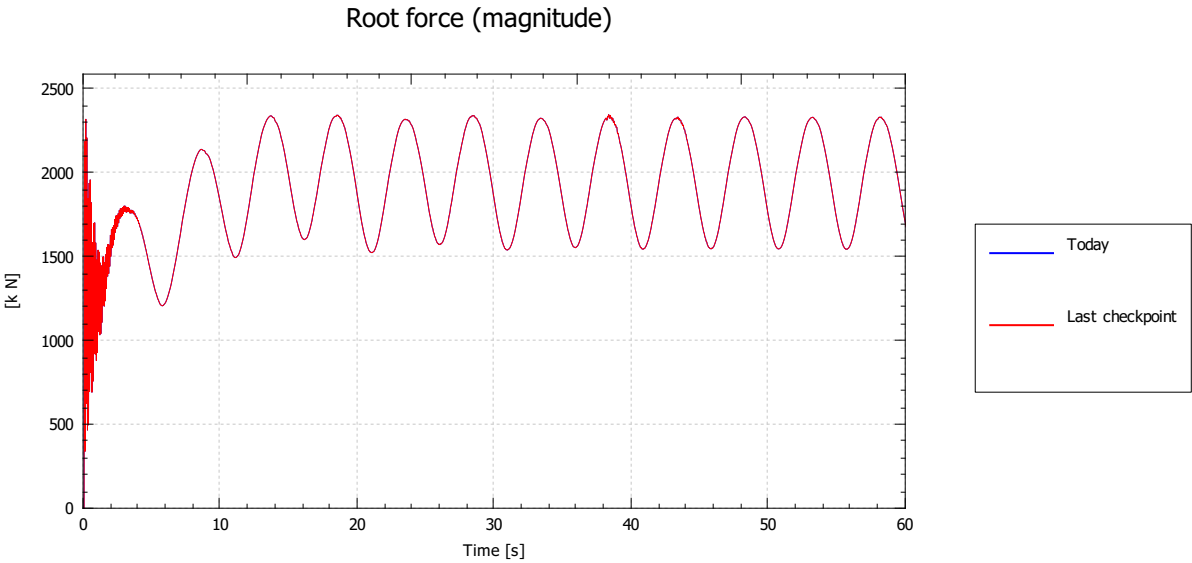


D term

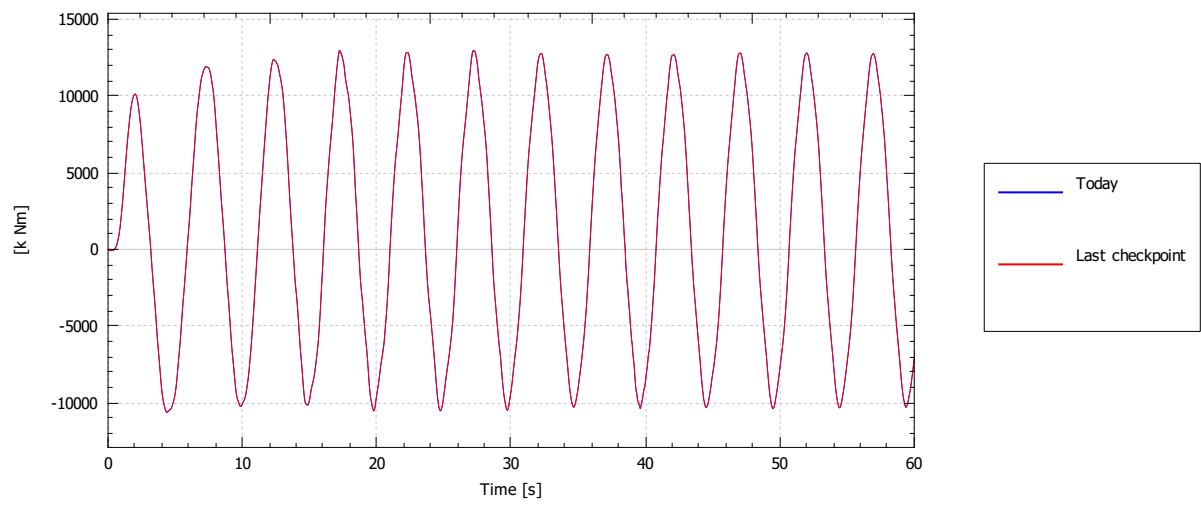


Gain scheduling factor

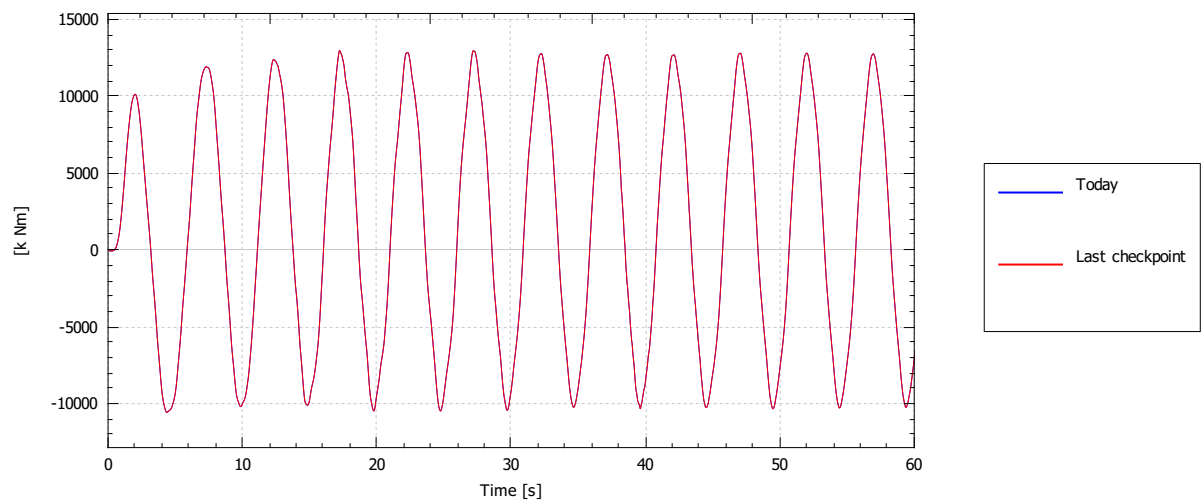




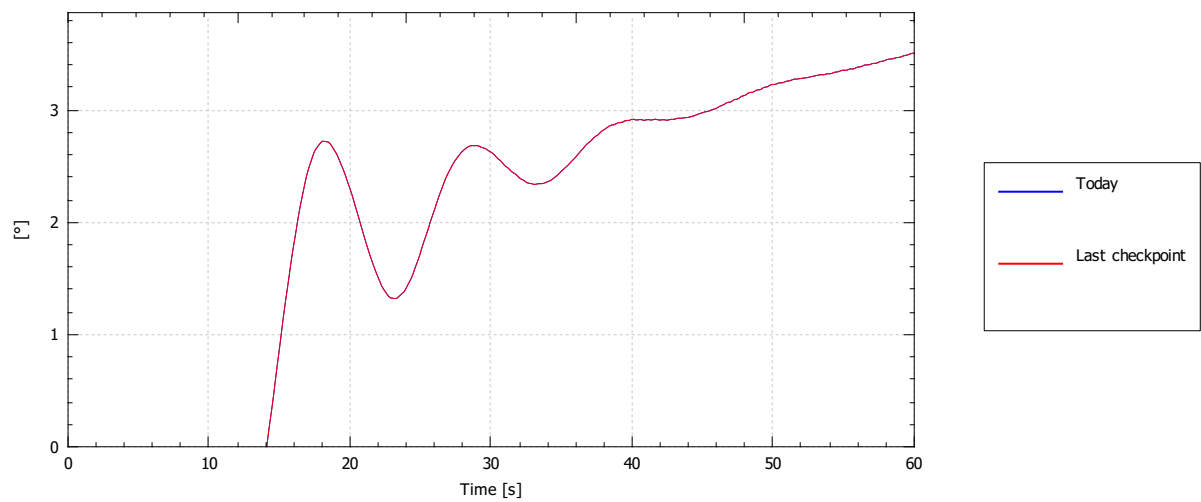
Root moment (in-plane)



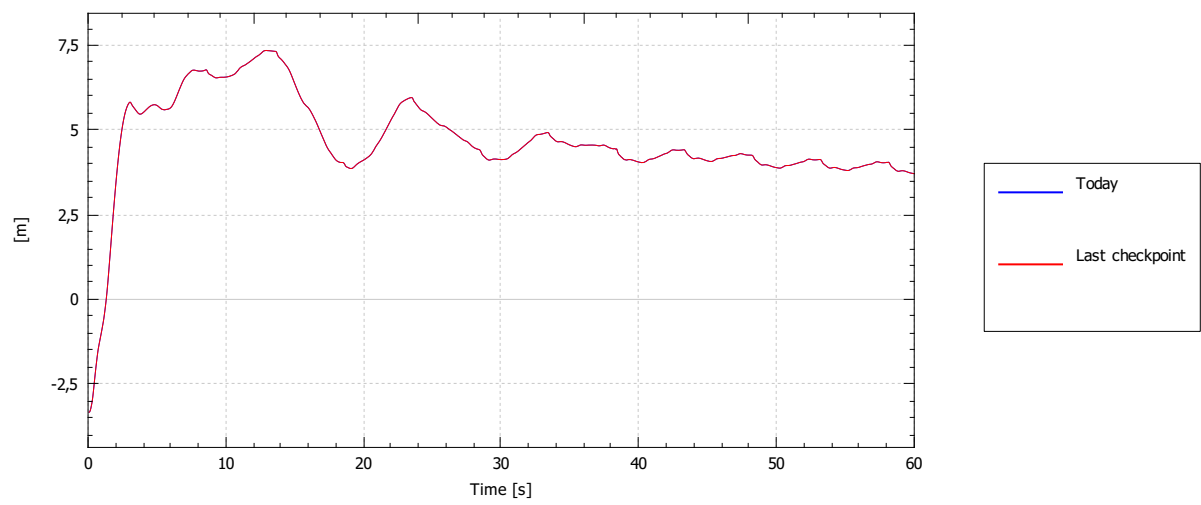
Root moment about shaft



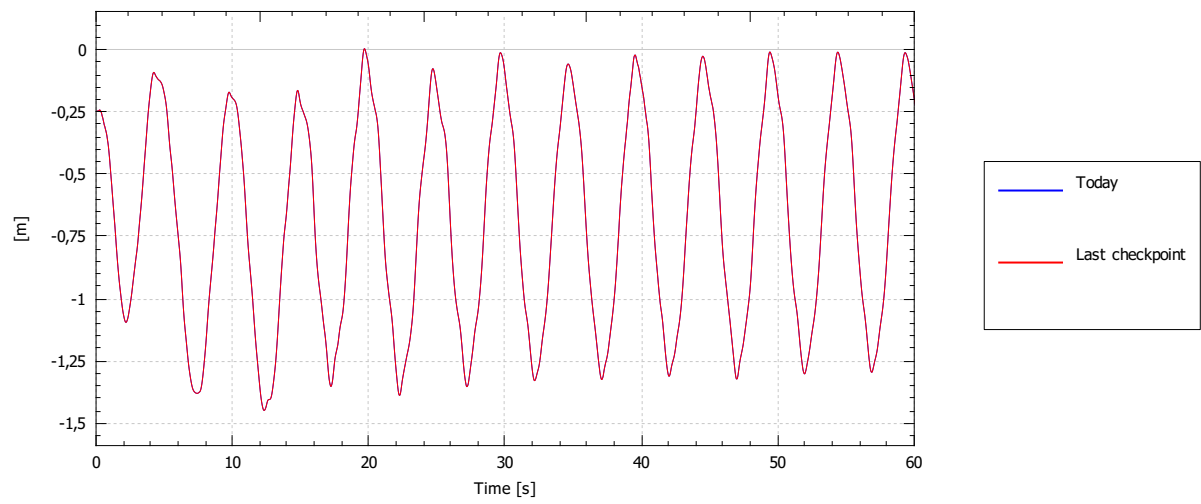
Pitch angle



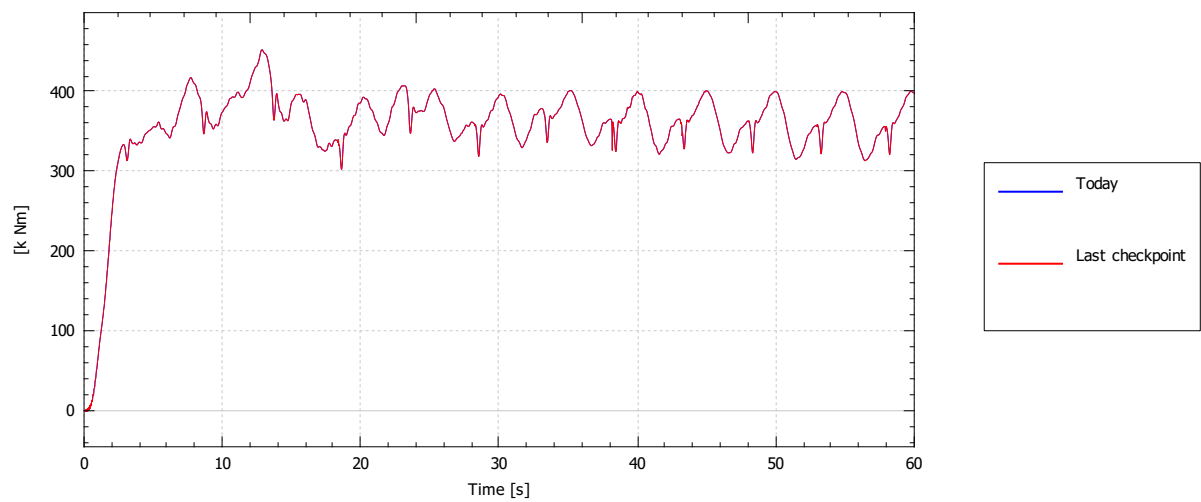
Tip deflection (out-of-plane)

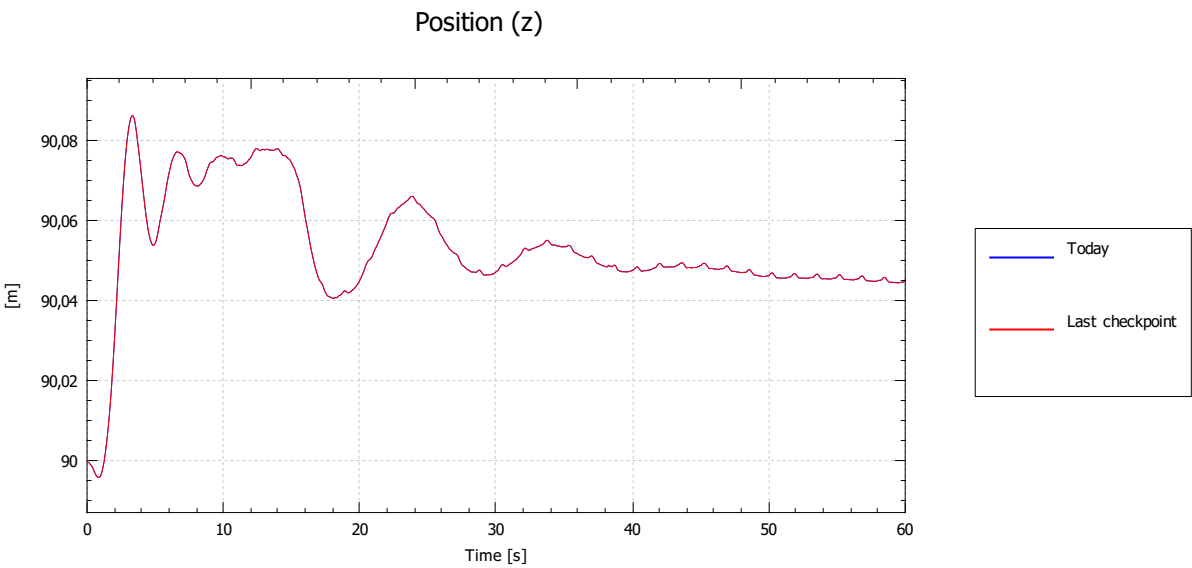
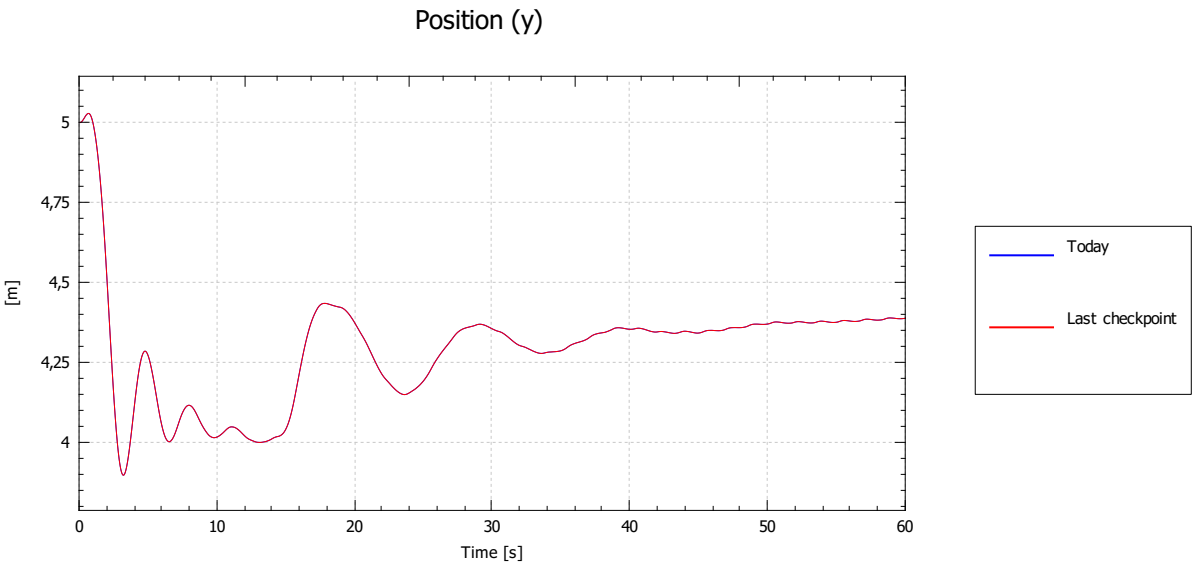
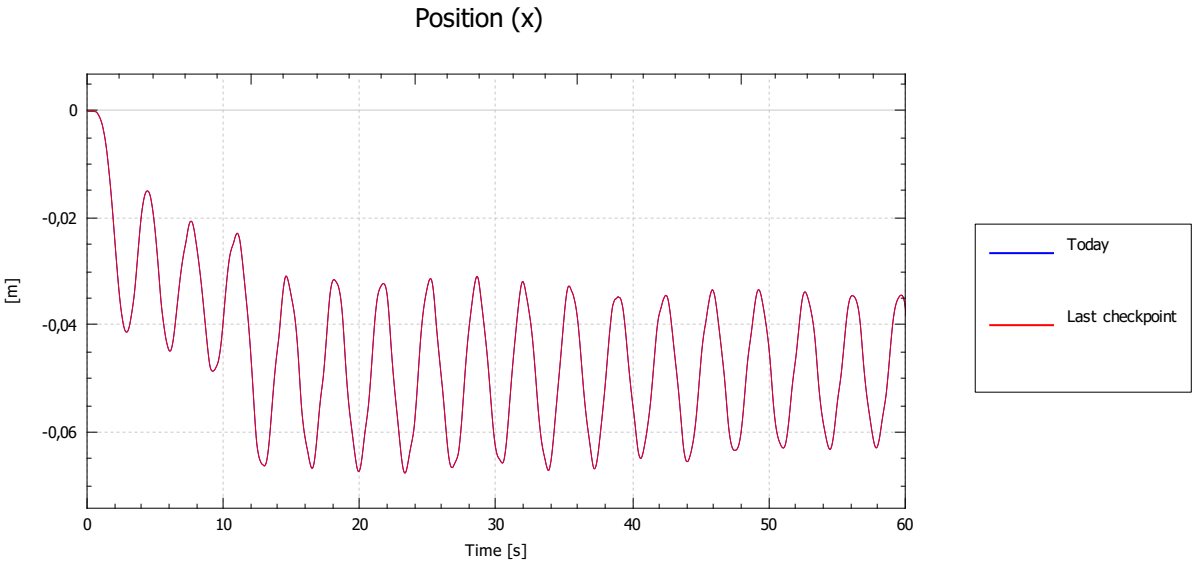


Tip deflection (in-plane)

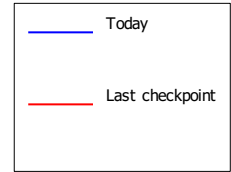
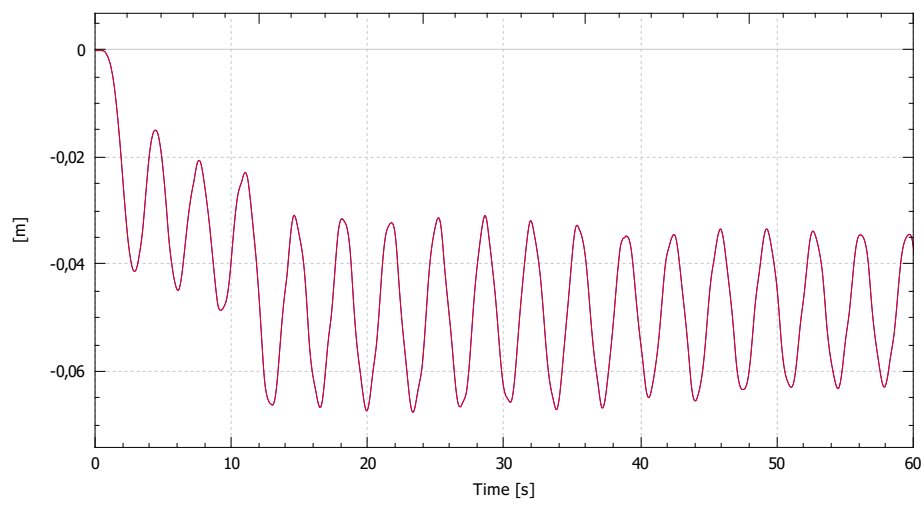


Root torque

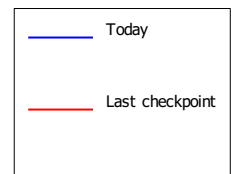
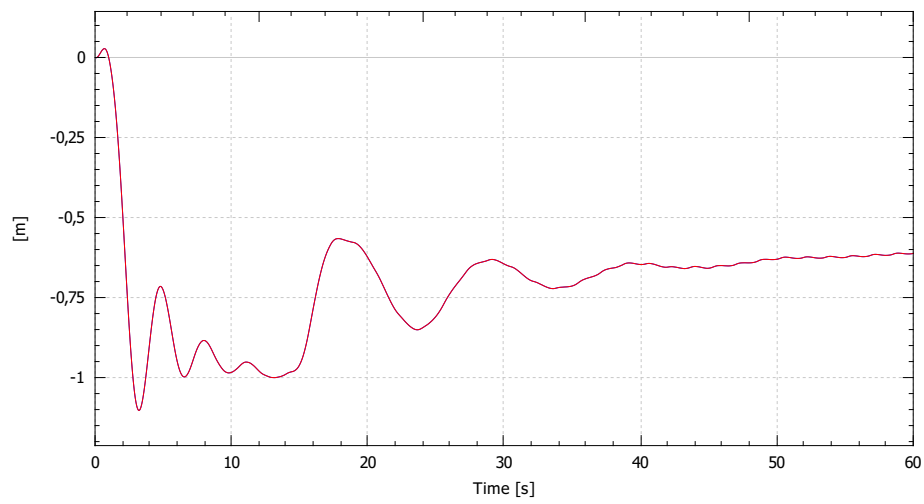




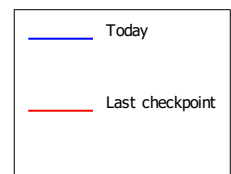
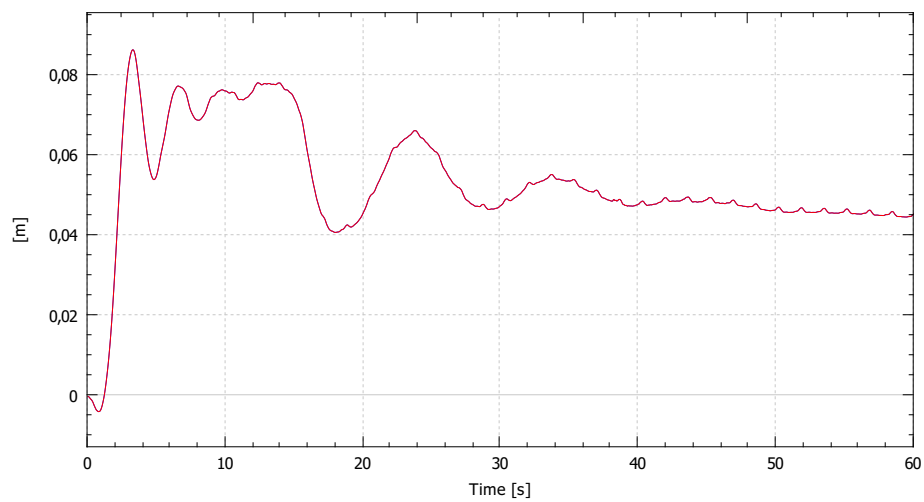
Displacement (u)



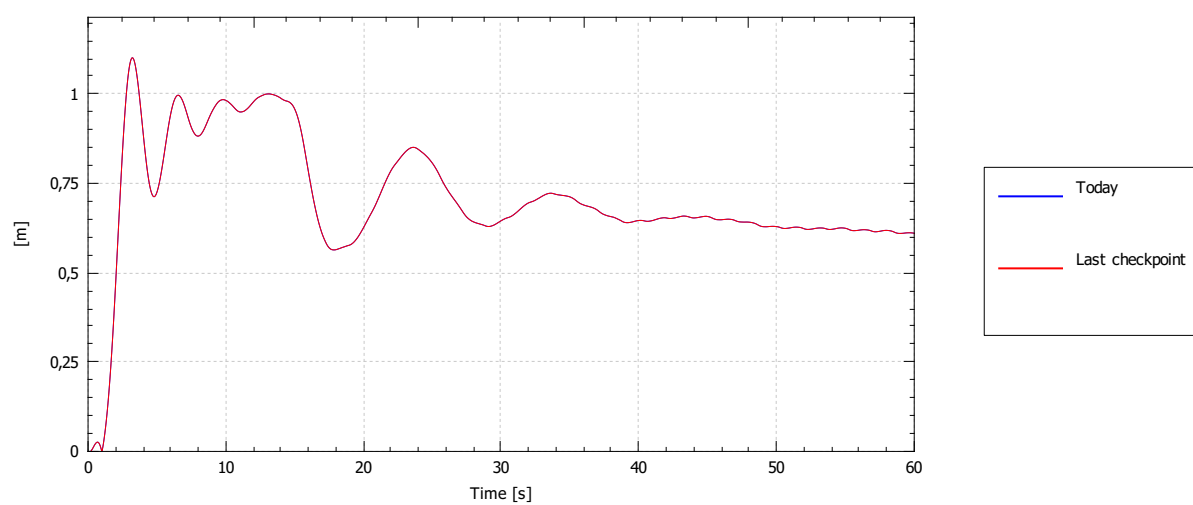
Displacement (v)



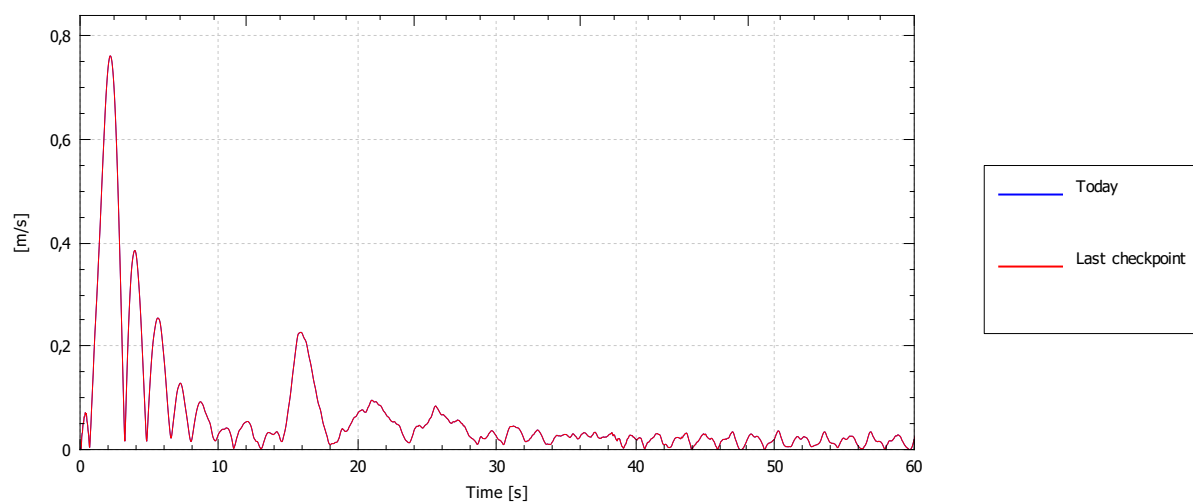
Displacement (w)



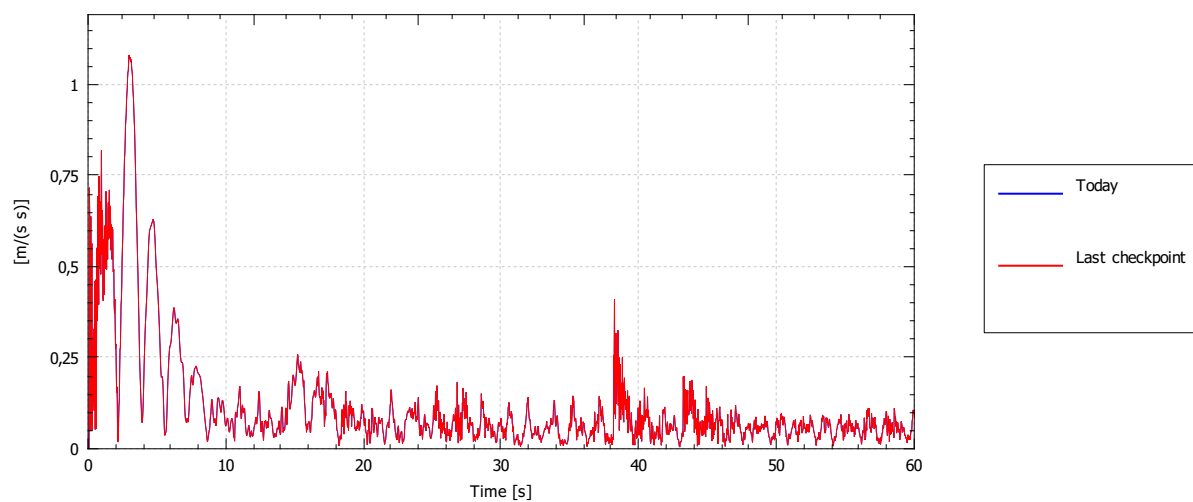
Displacement magnitude



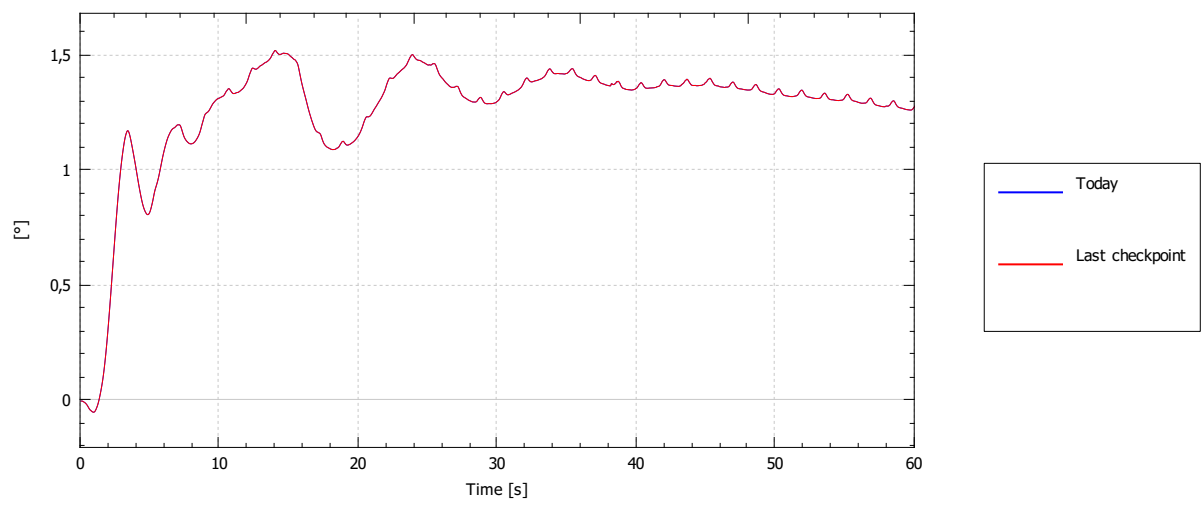
Speed



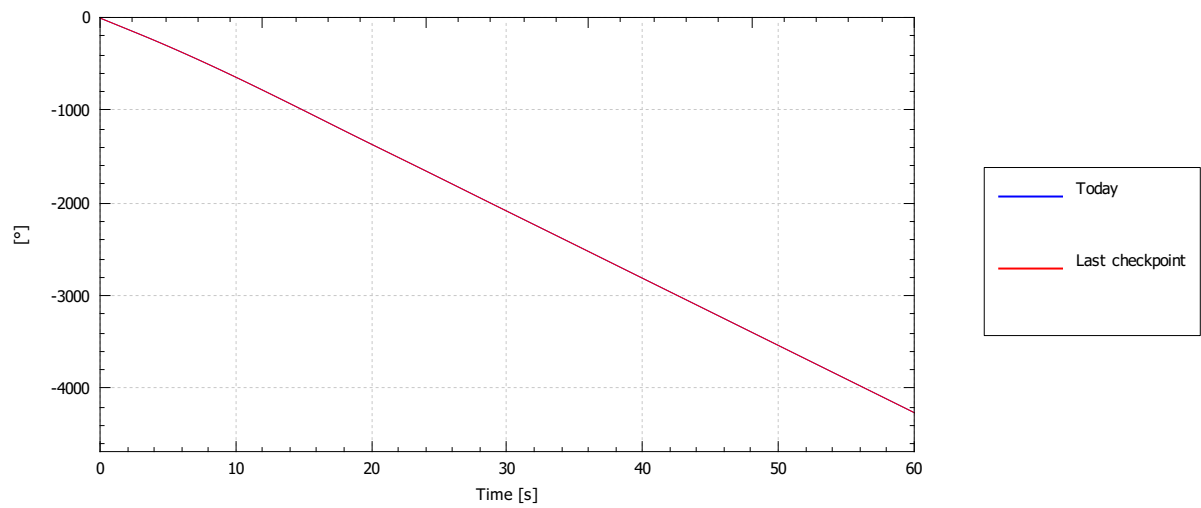
Acceleration, magnitude



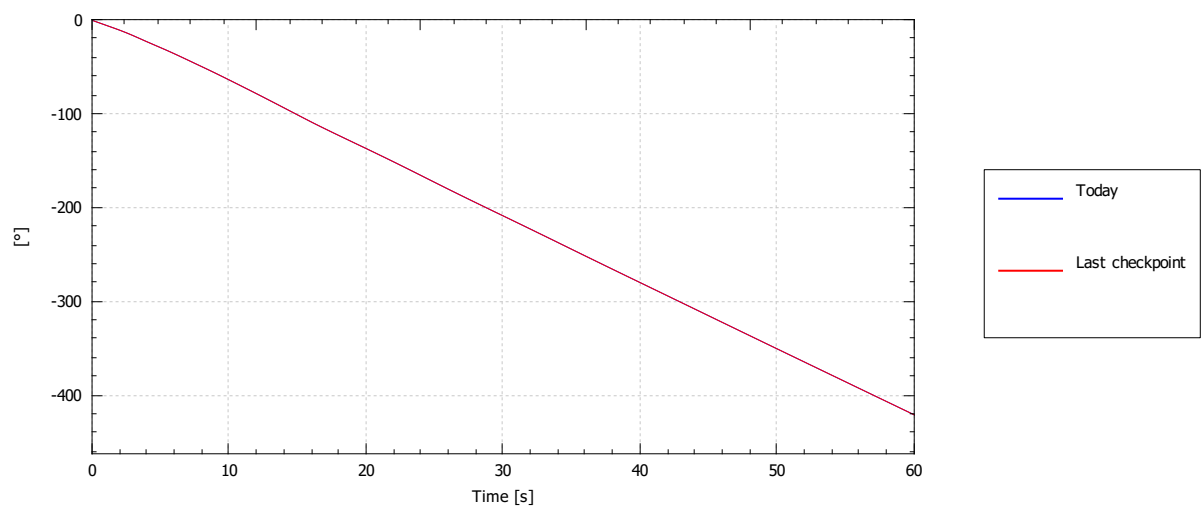
Rotational displacement (ru)



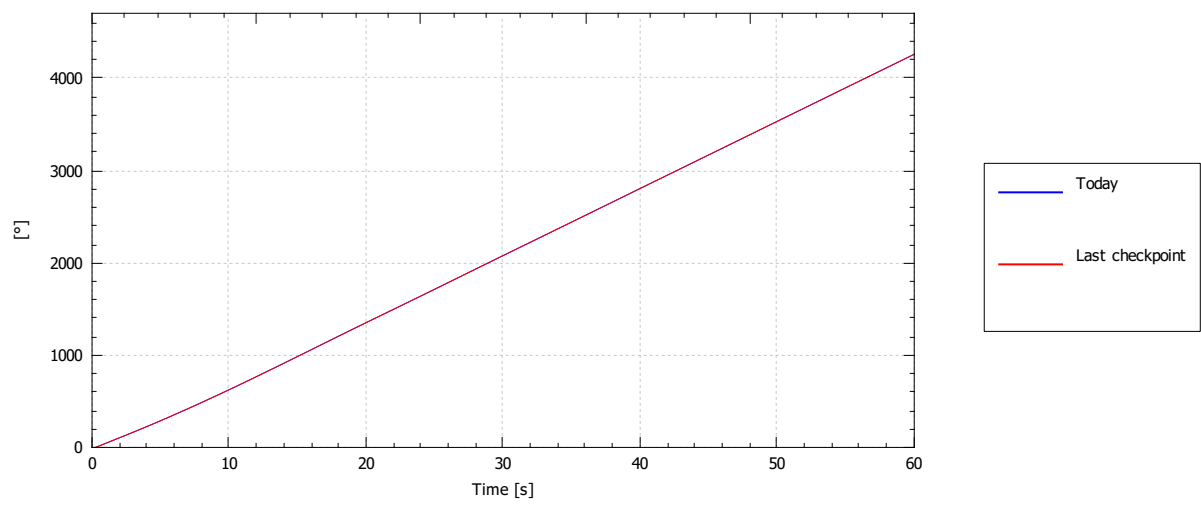
Rotational displacement (rv)



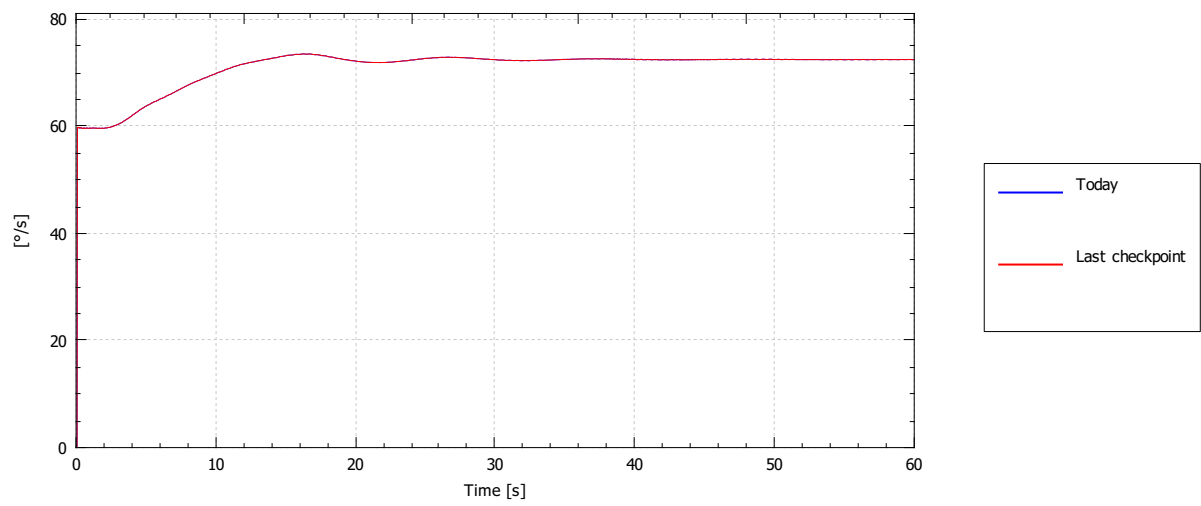
Rotational displacement (rw)



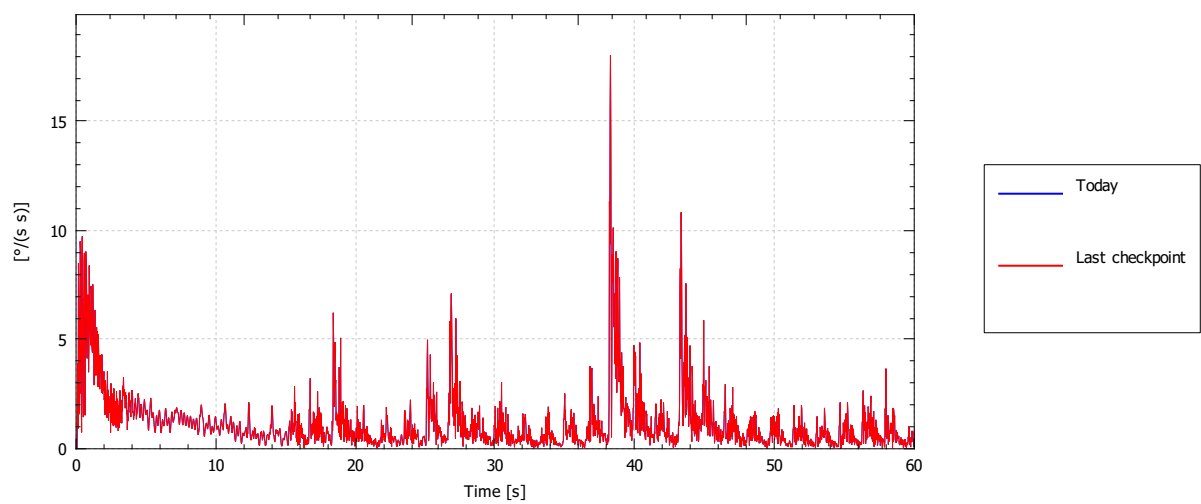
Rotational displacement magnitude



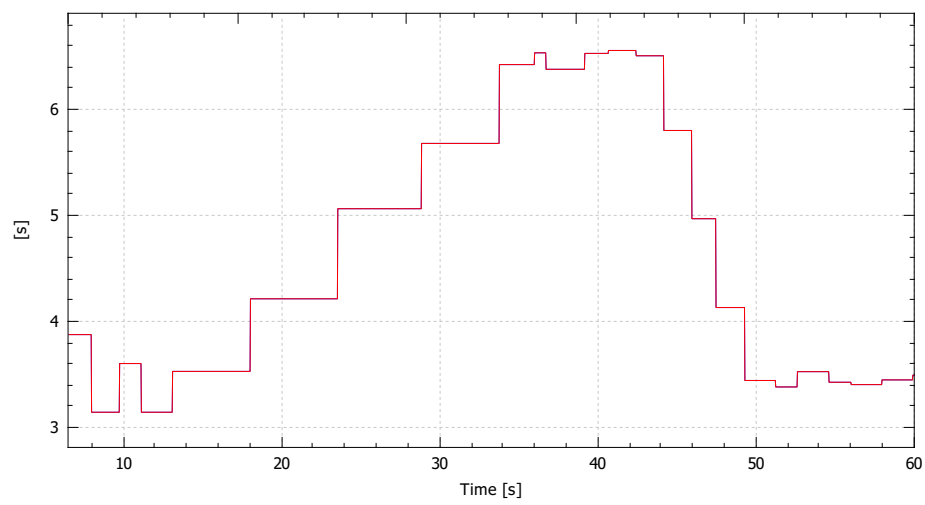
Rotational speed



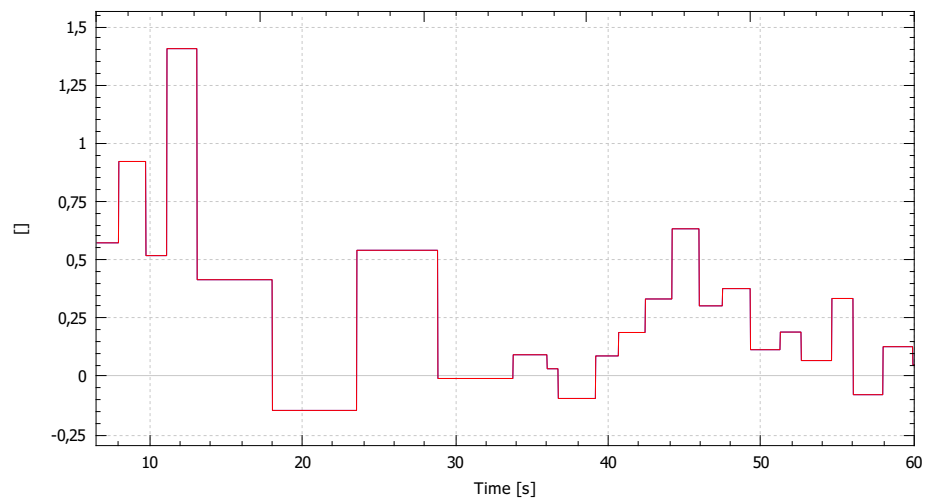
Rotational acceleration mag



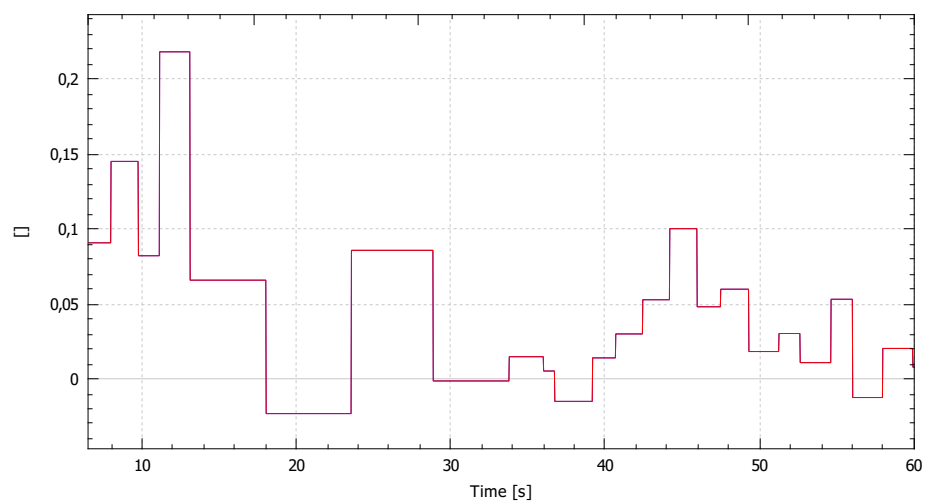
Displacement period



Displacement logarithmic decrement

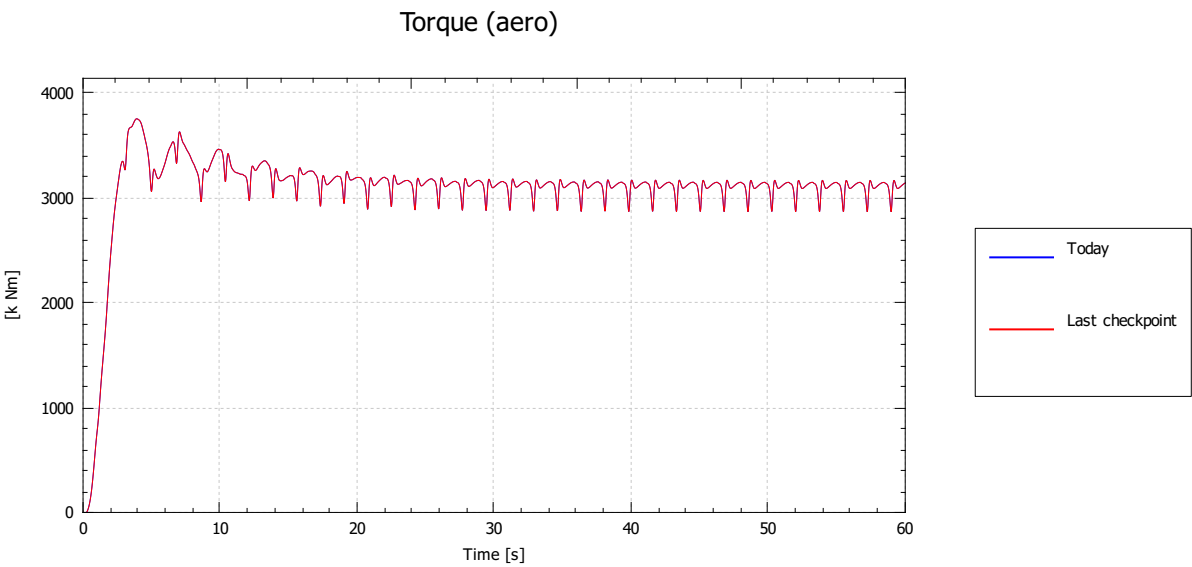
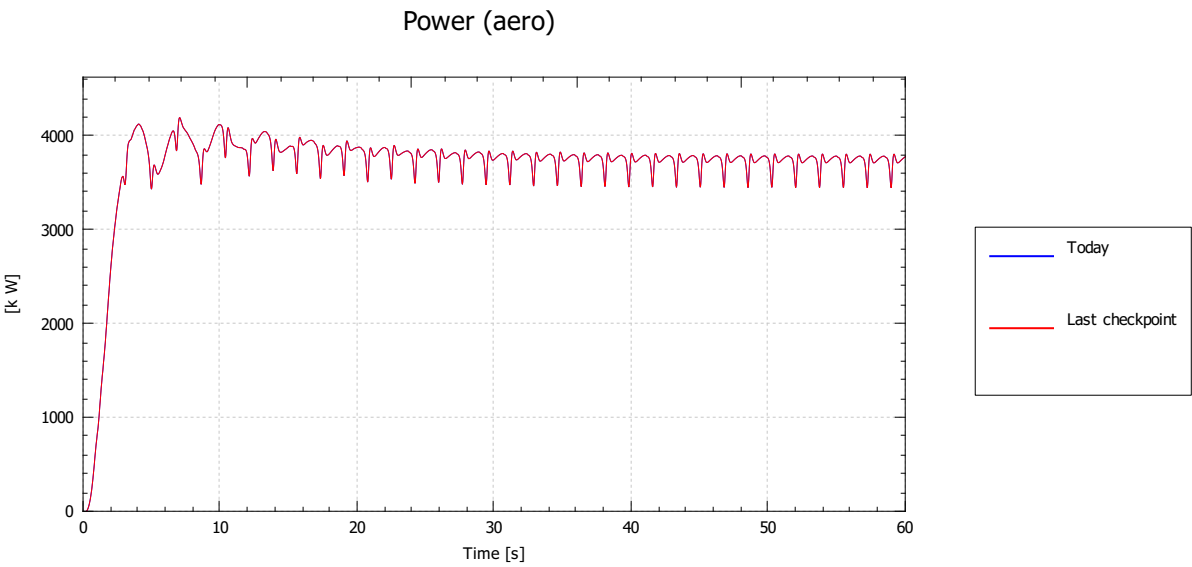


Displacement damping ratio

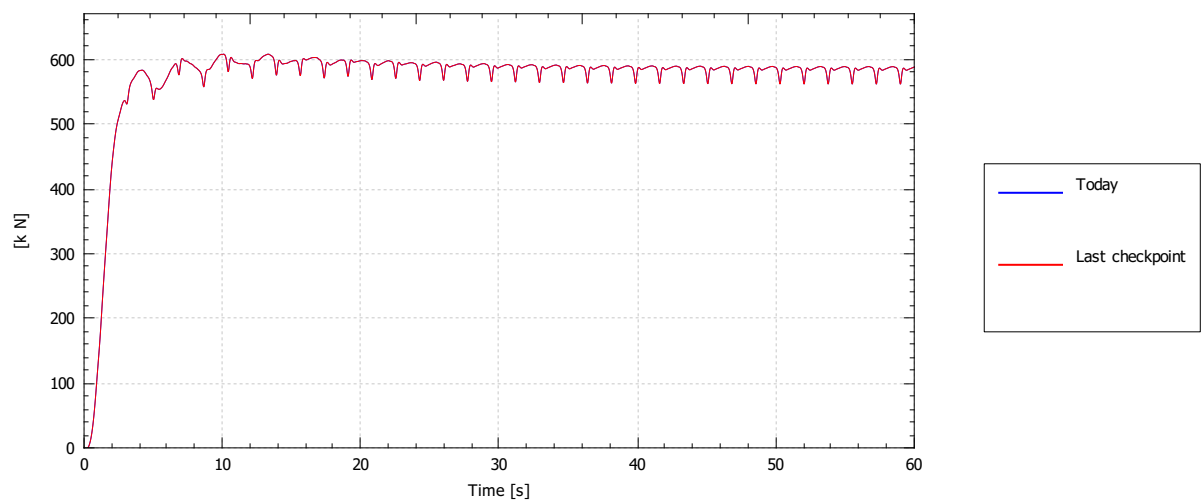


Load case: Cone

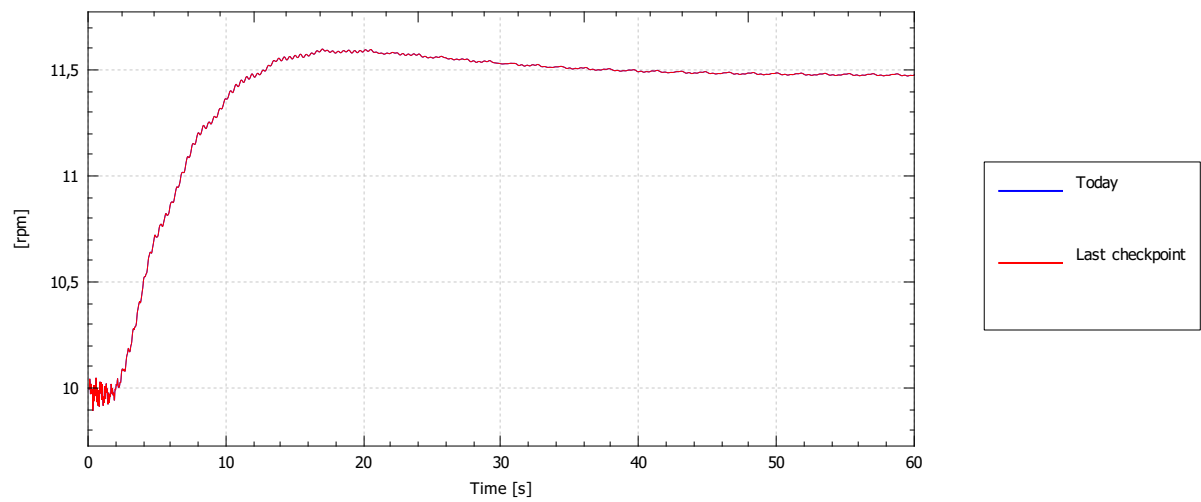
Rotor



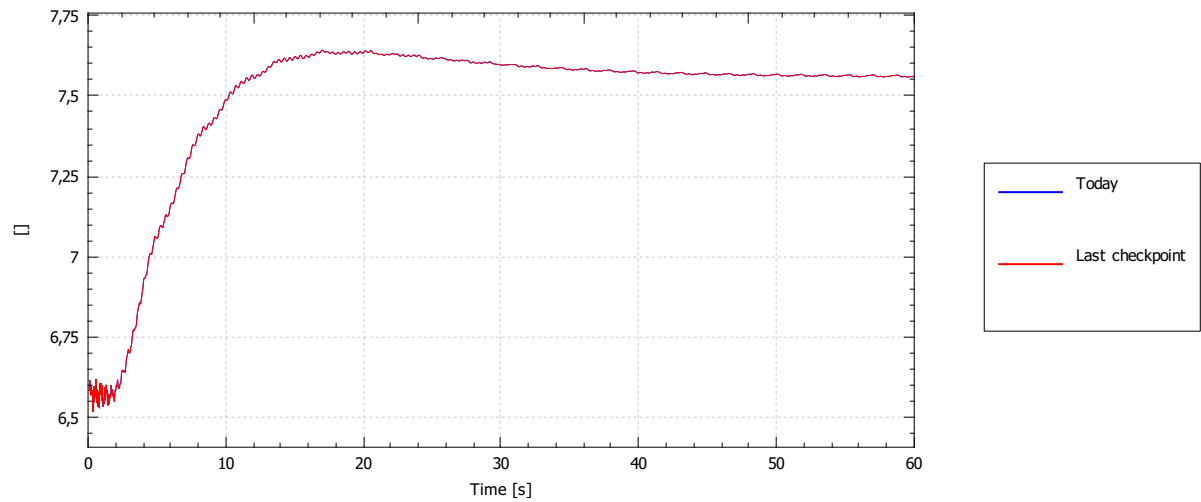
Thrust (aero)



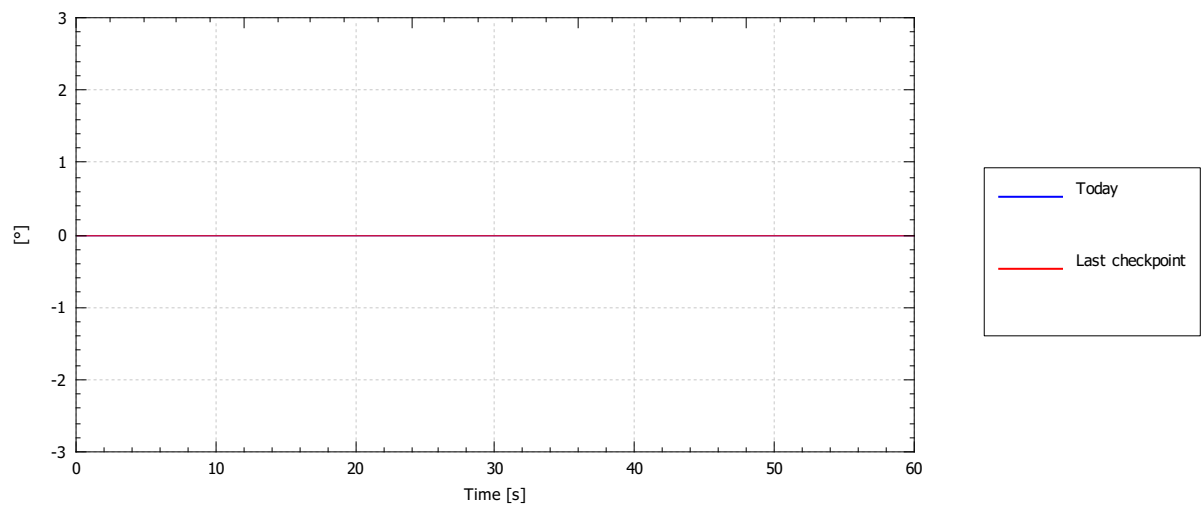
RPM



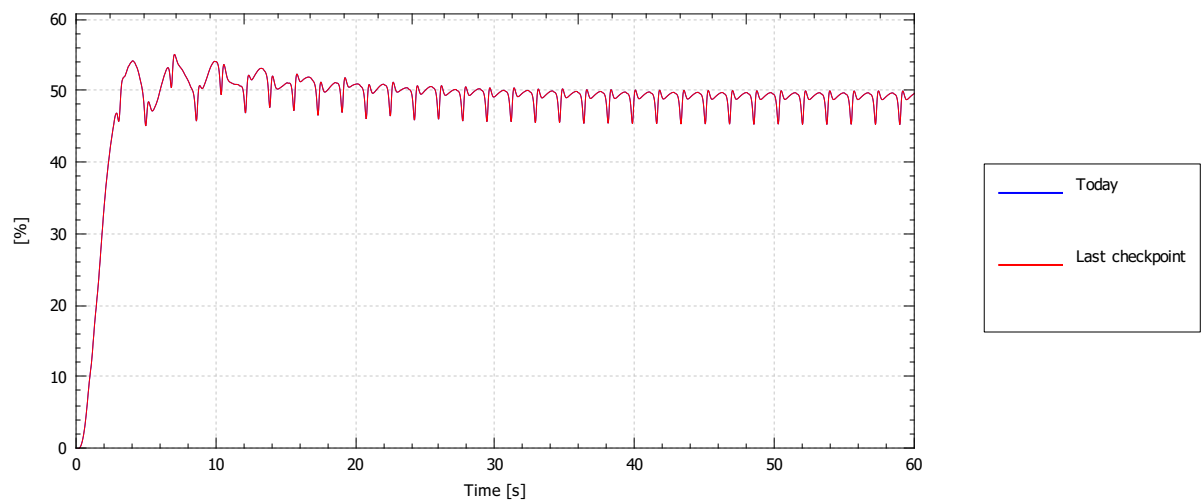
TSR



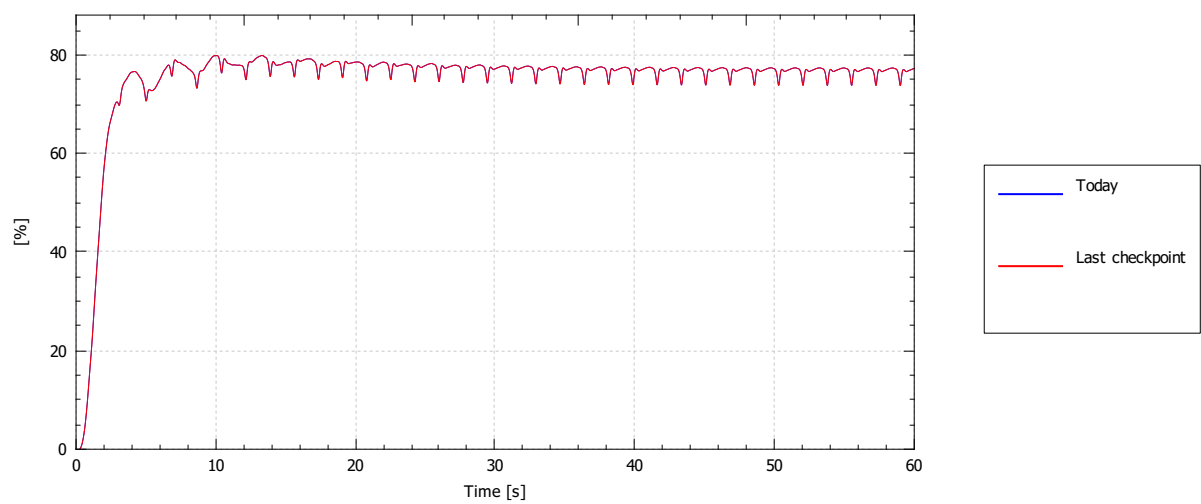
Representative demanded pitch angle



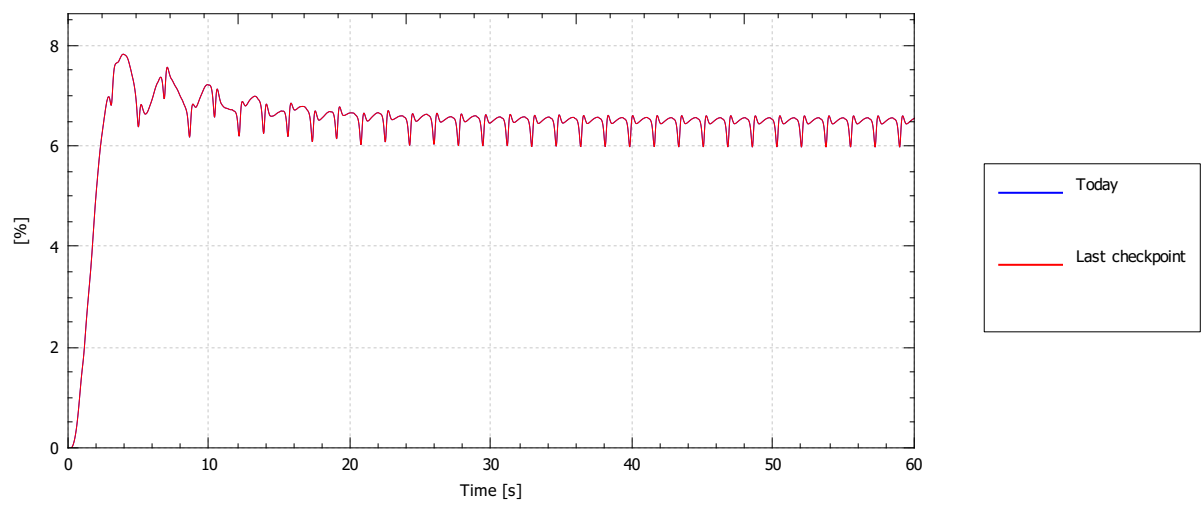
Power coef. (CP)



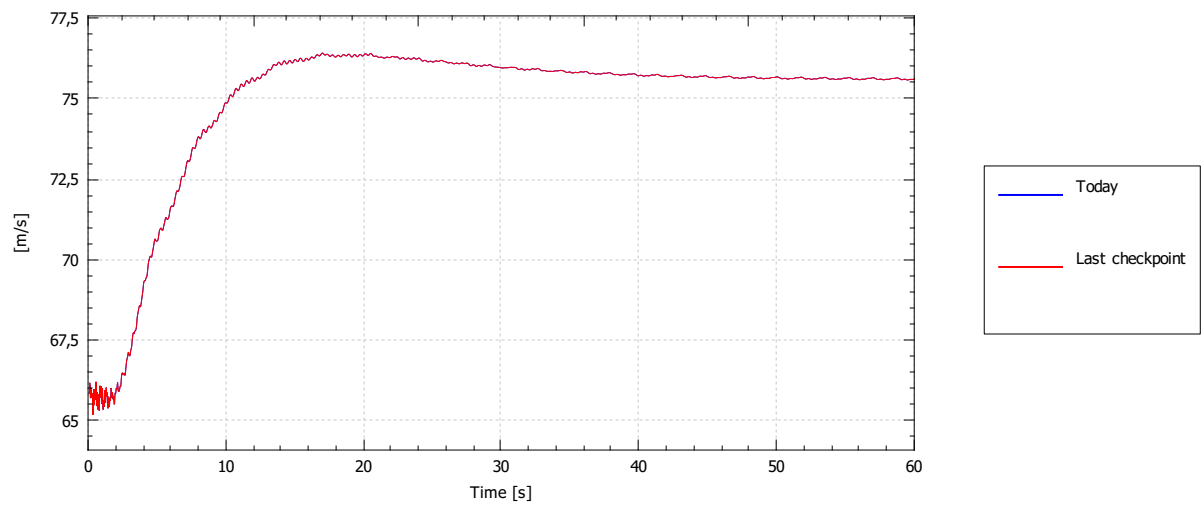
Thrust coef. (CT)



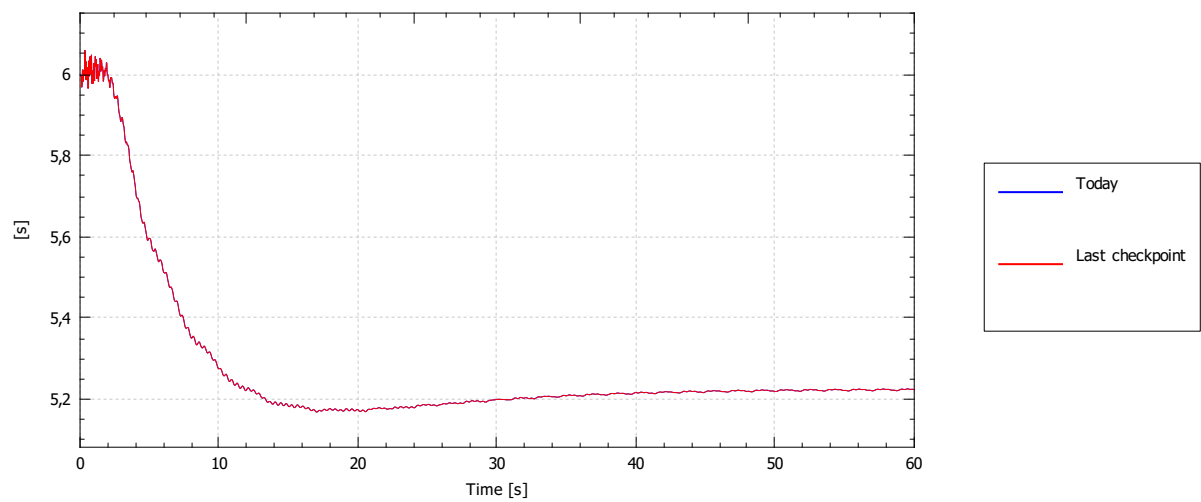
Torque coef. (CQ)



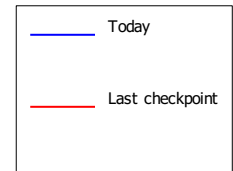
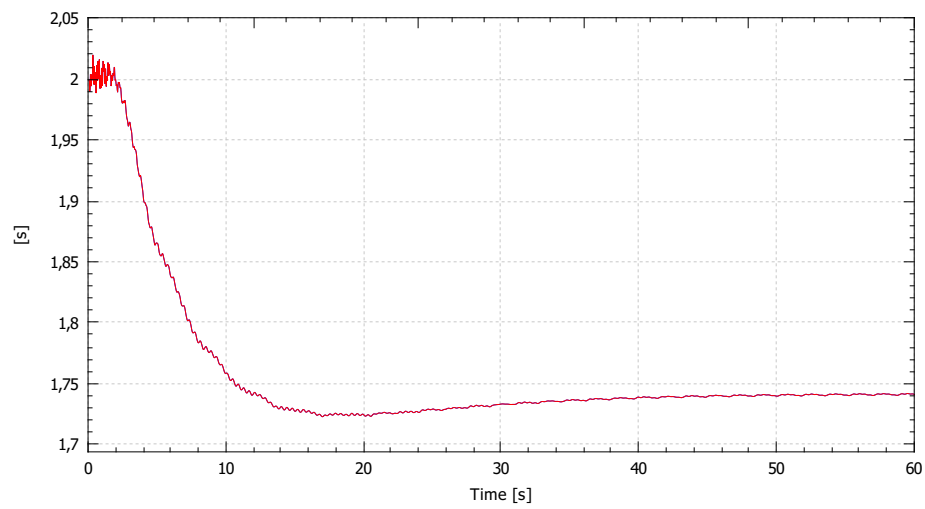
Tip speed



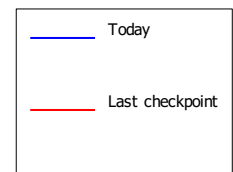
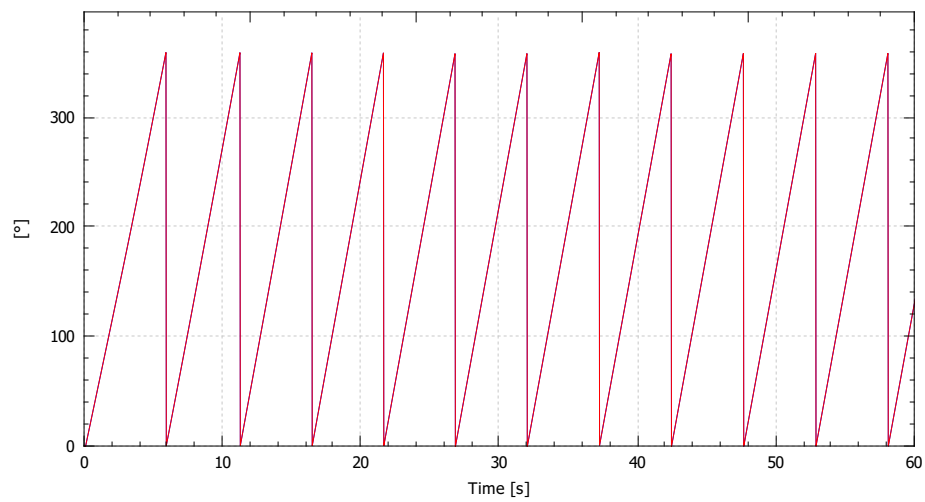
1P (one revolution)



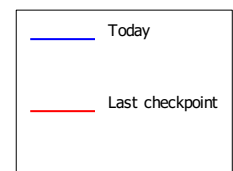
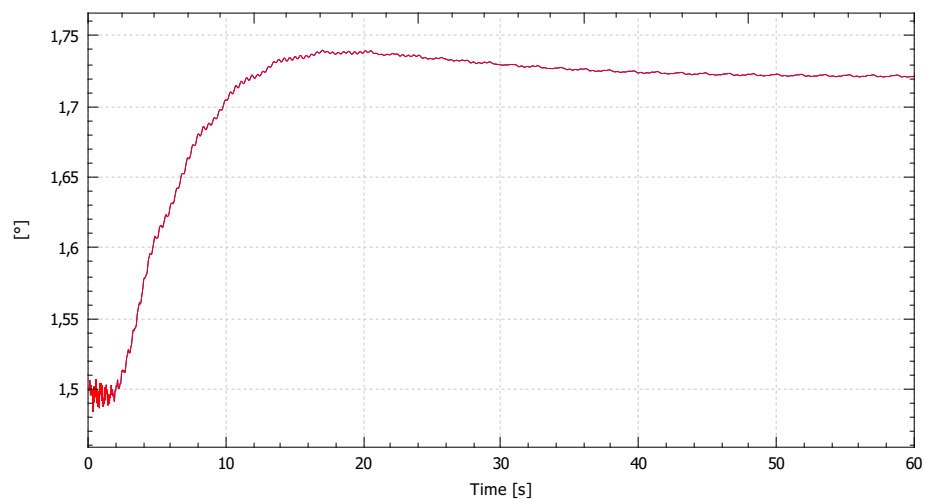
nP (blade passing)



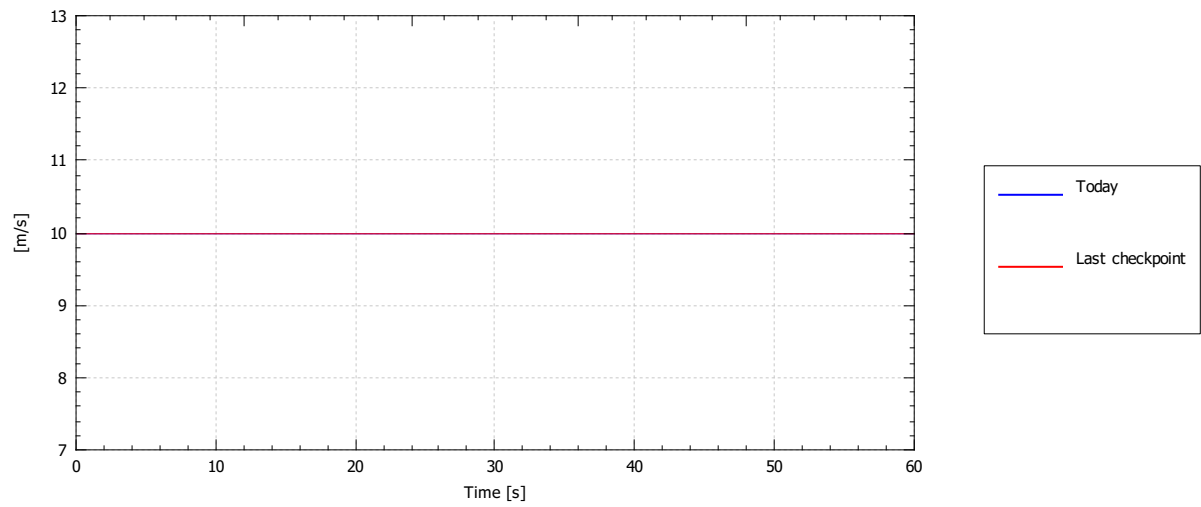
Azimuth angle



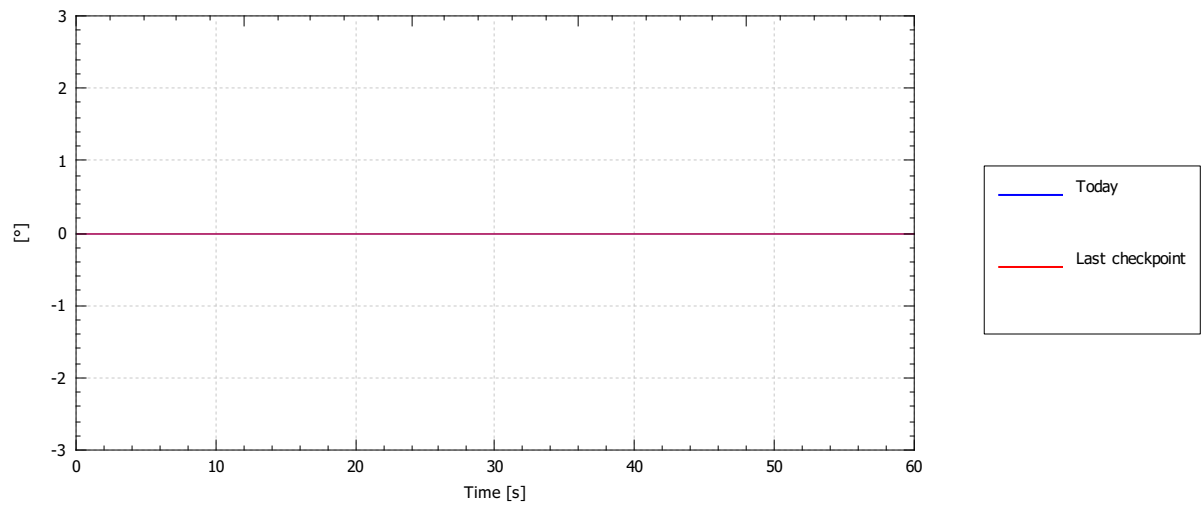
Rotation per timestep



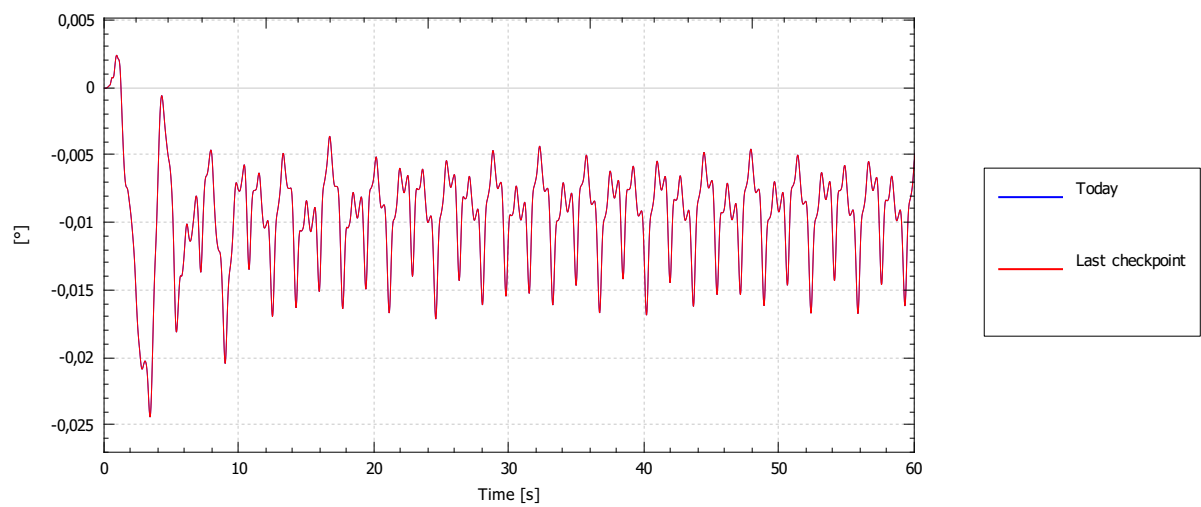
Wind speed at hub, magnitude



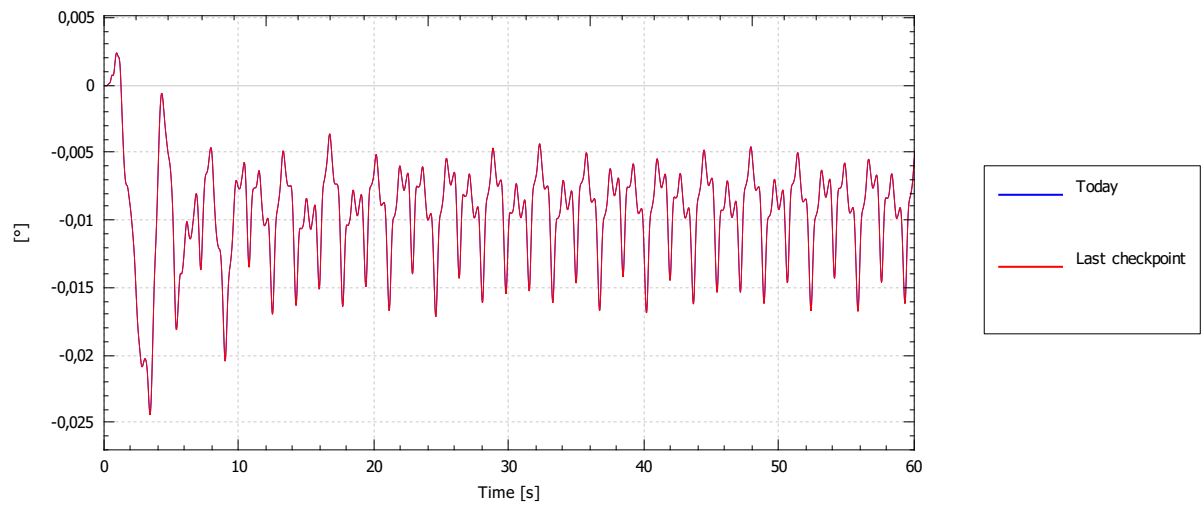
Wind angle at hub



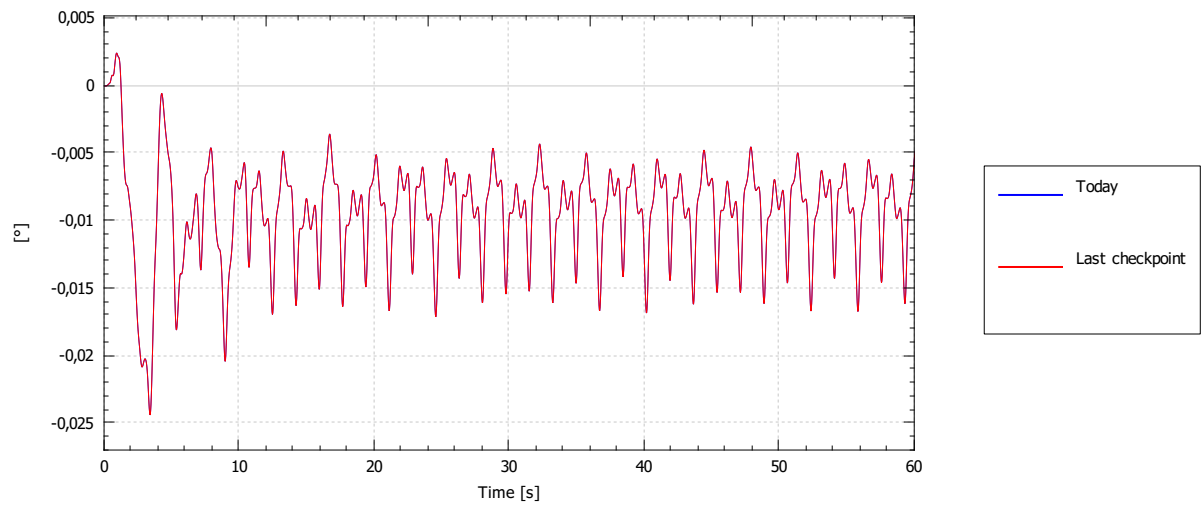
Yaw angle relative to forward



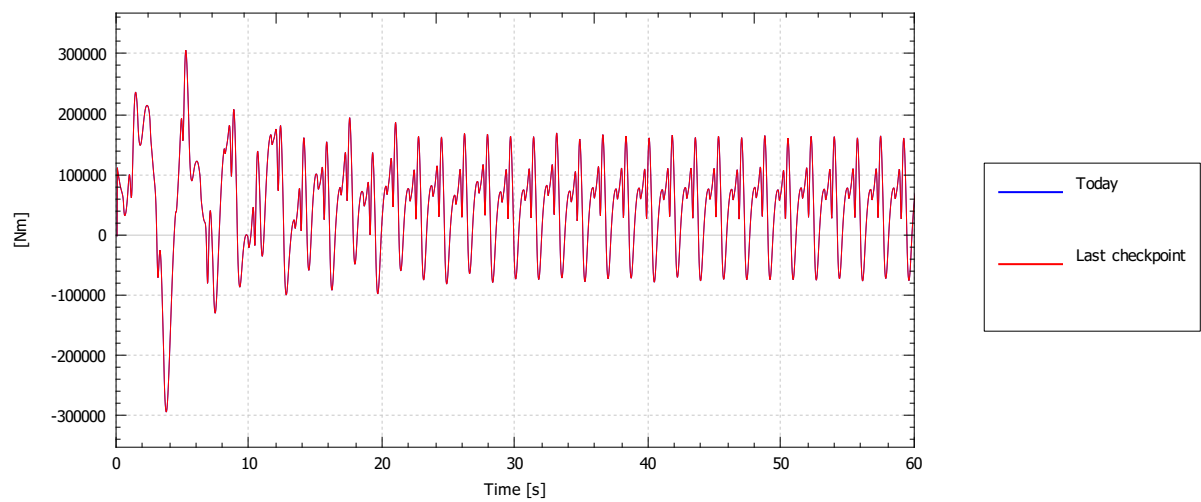
Yaw angle to reference direction



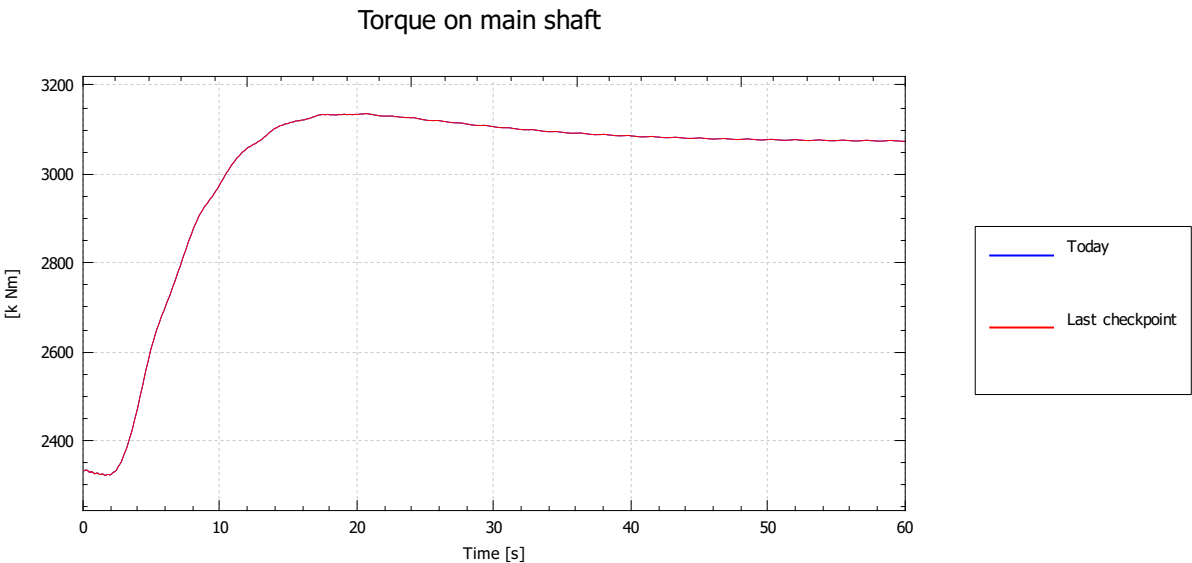
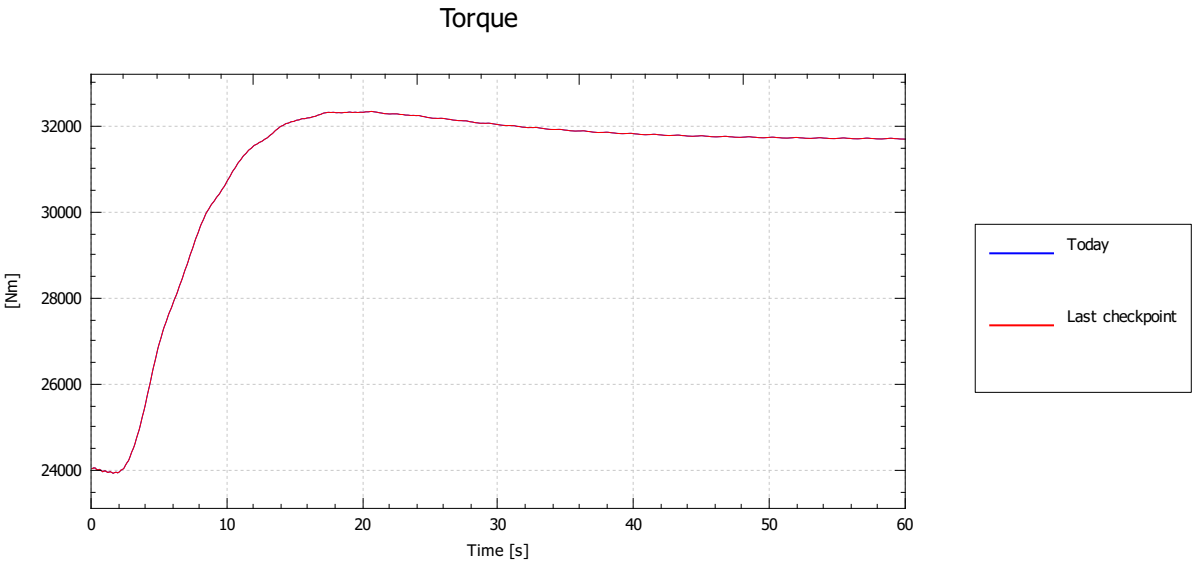
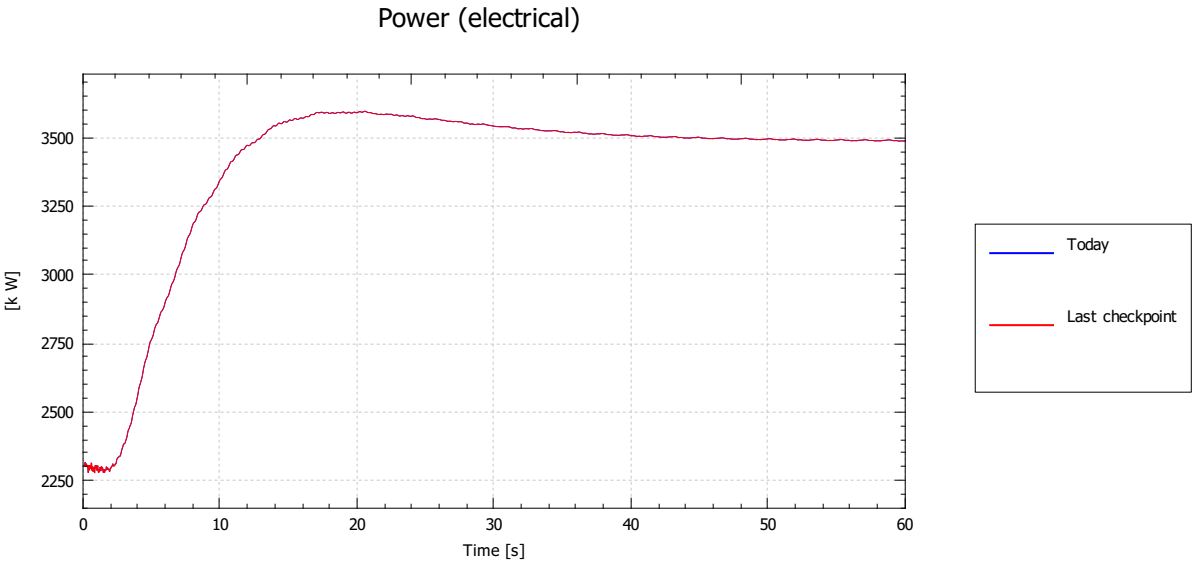
Yaw error



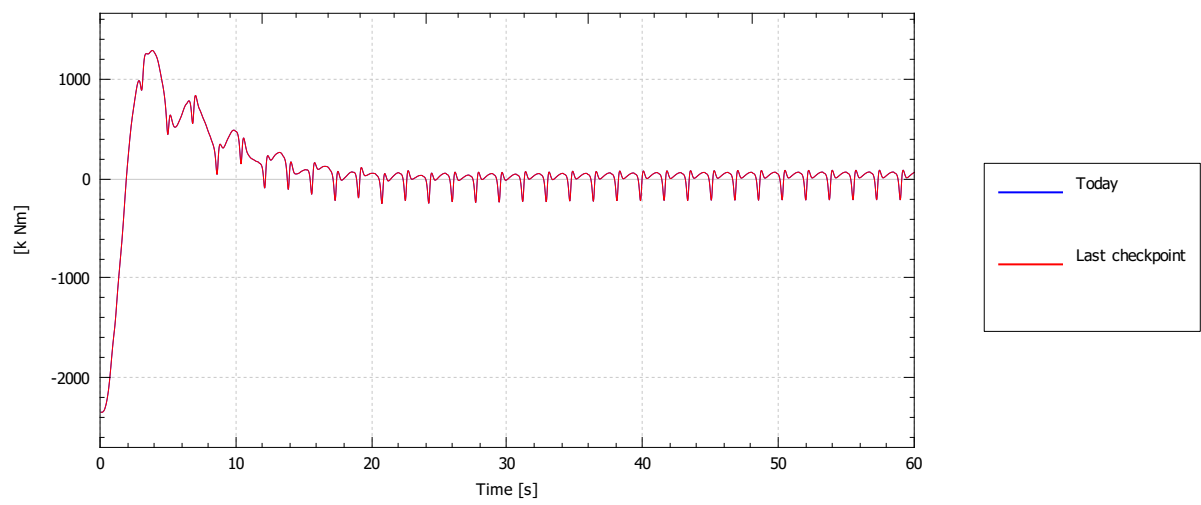
Torque about yaw axis



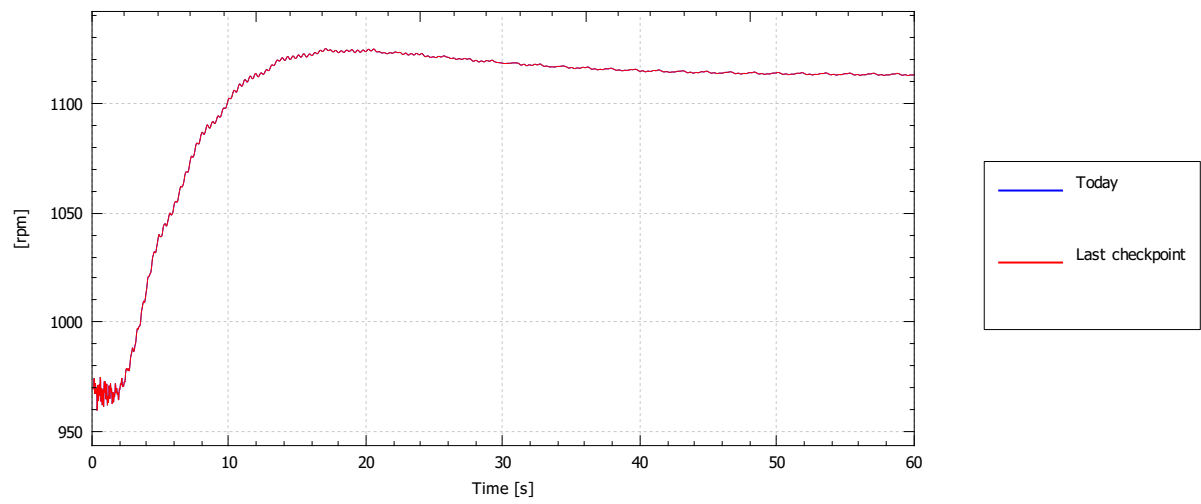
Generator



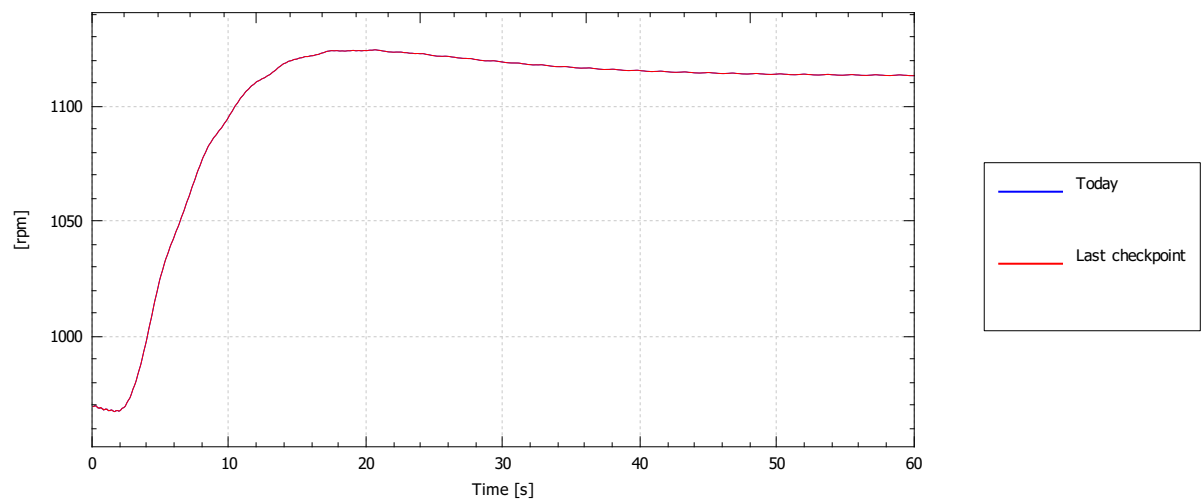
Torque diff. on main shaft



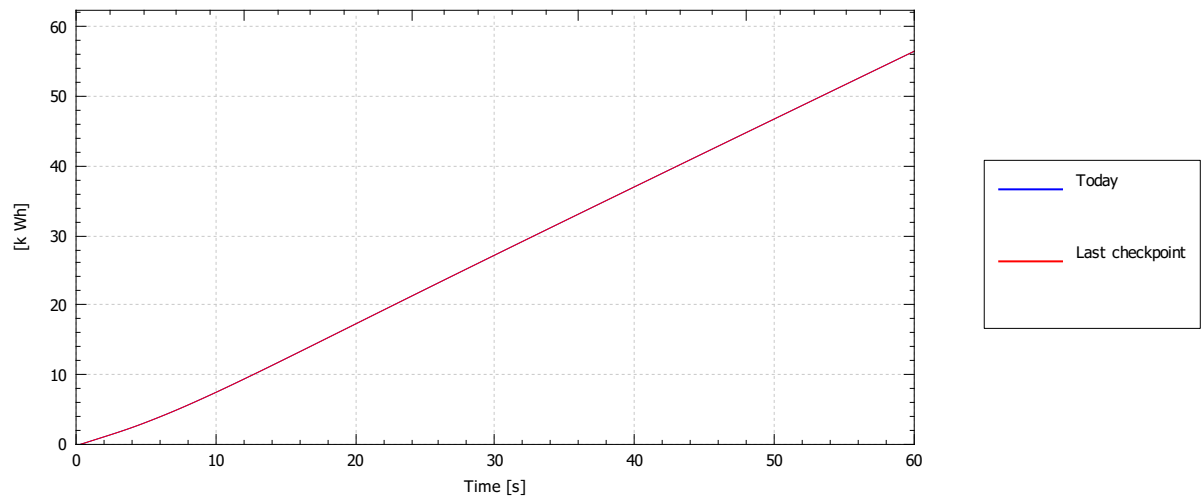
RPM



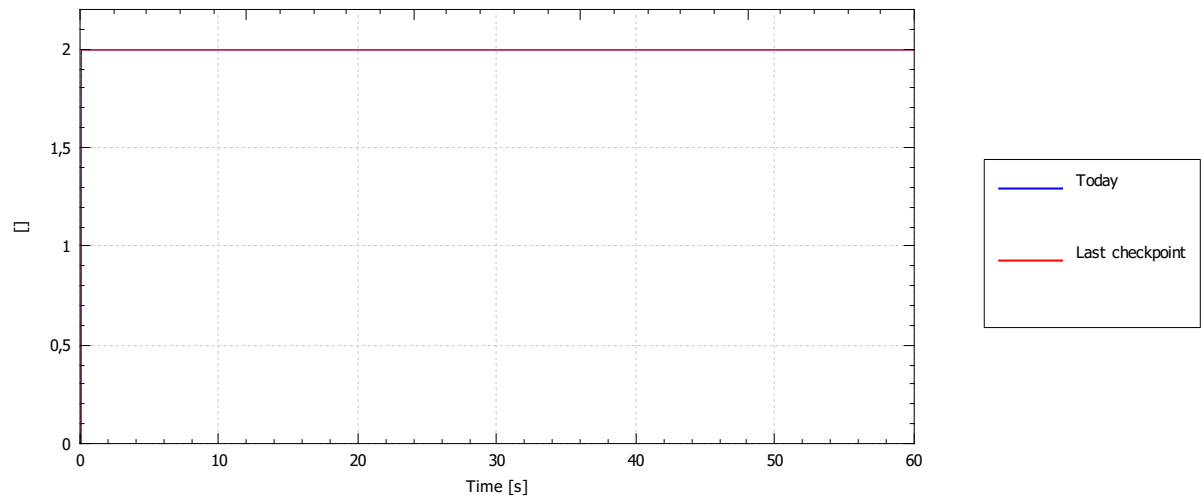
Filtered RPM



Electricity production

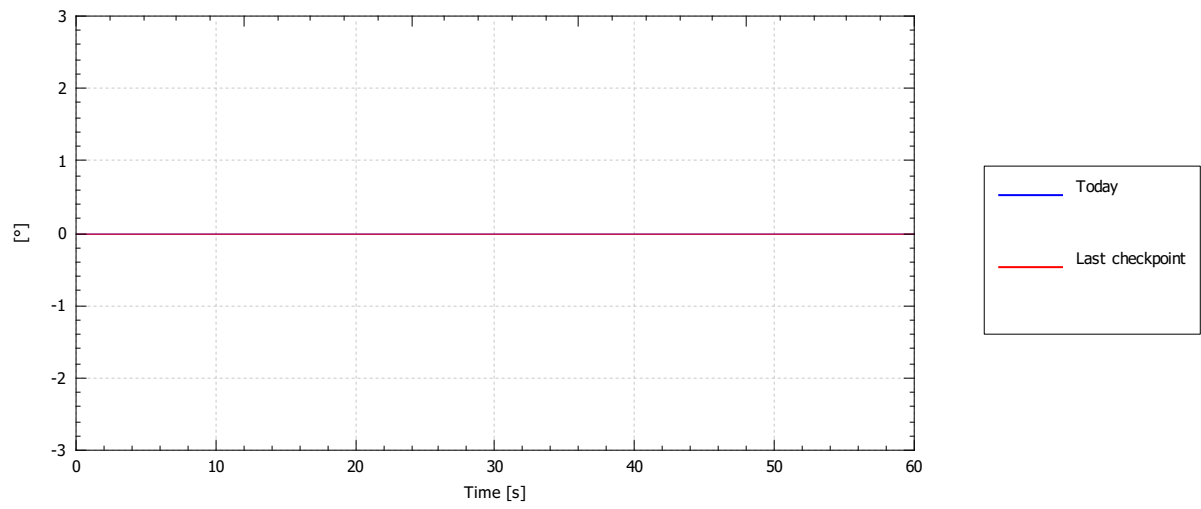


Region

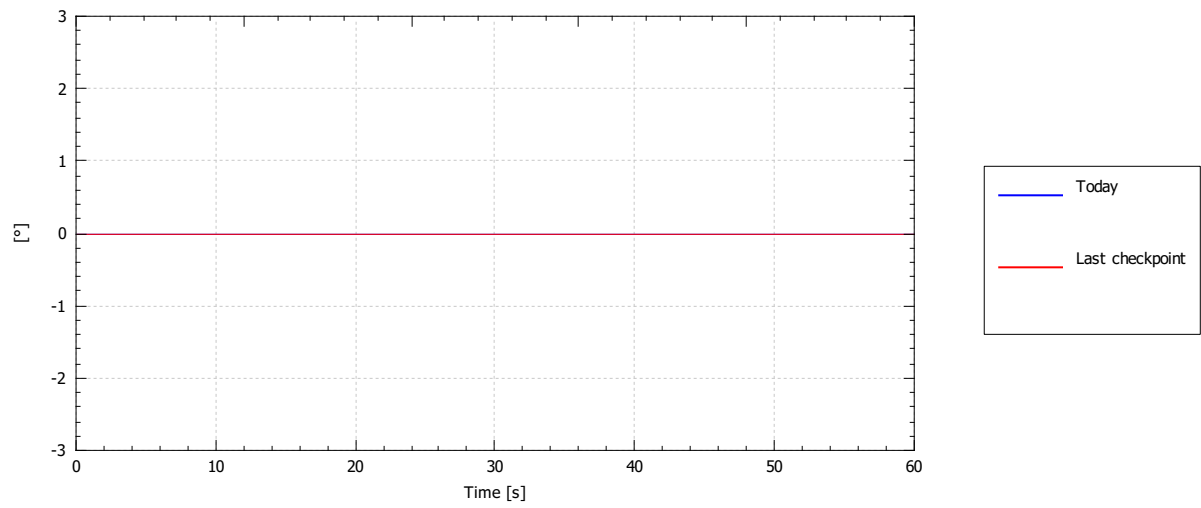


Demanded pitch controller

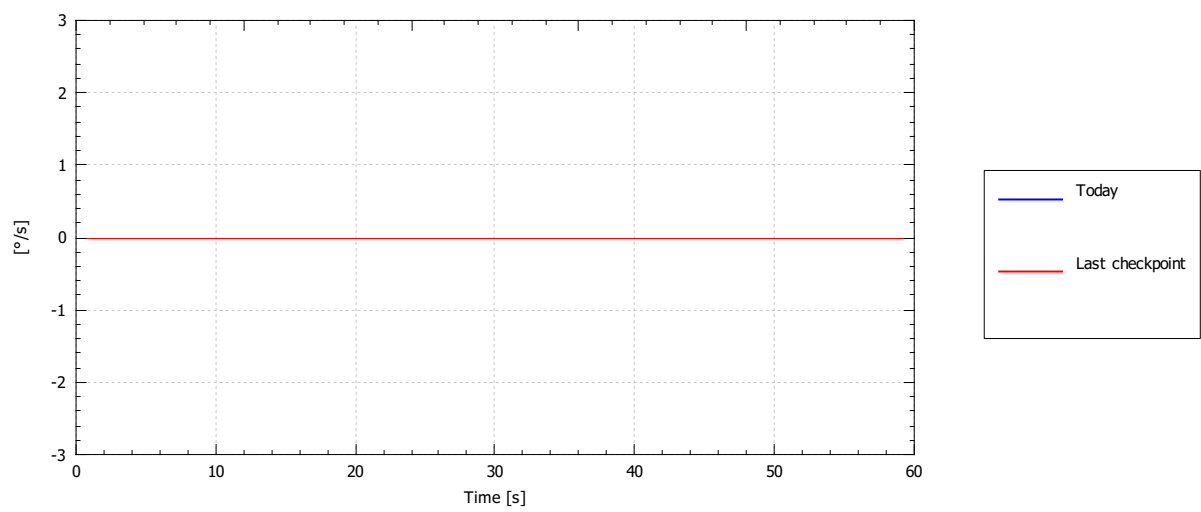
Demanded collective pitch angle



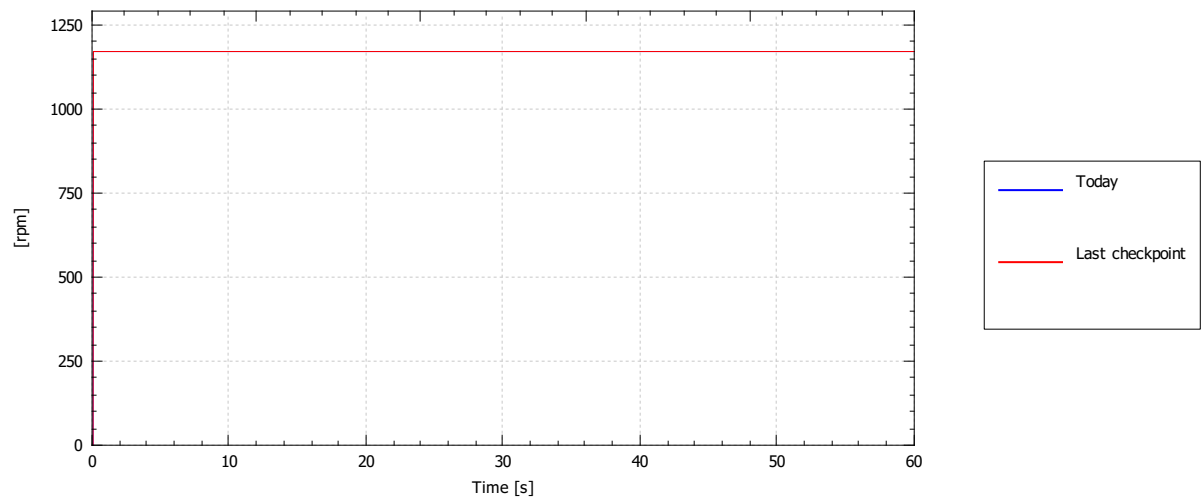
Cumulative demanded collective pitch angle



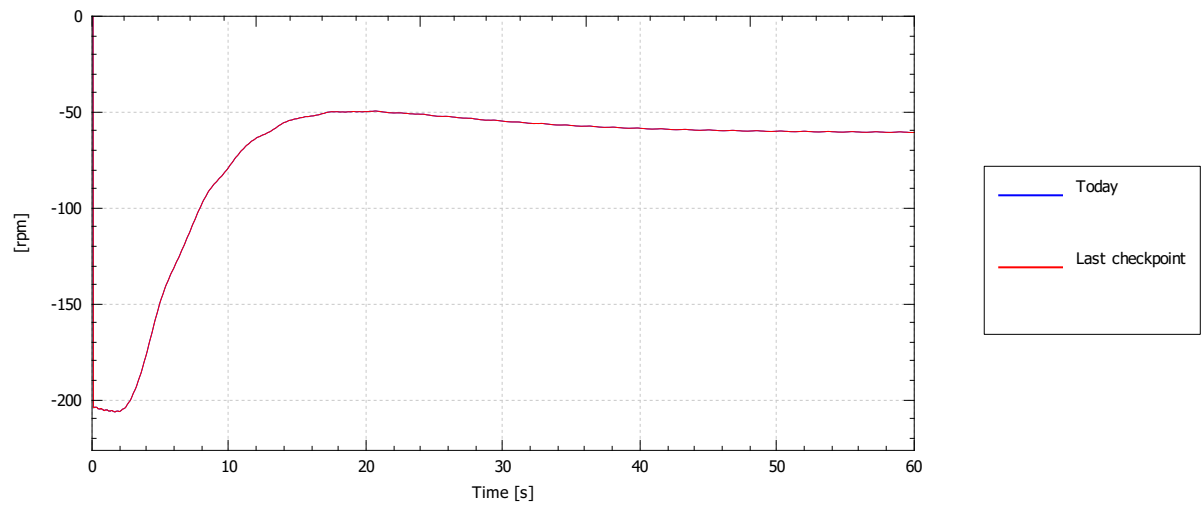
Demanded collective pitch angle rate



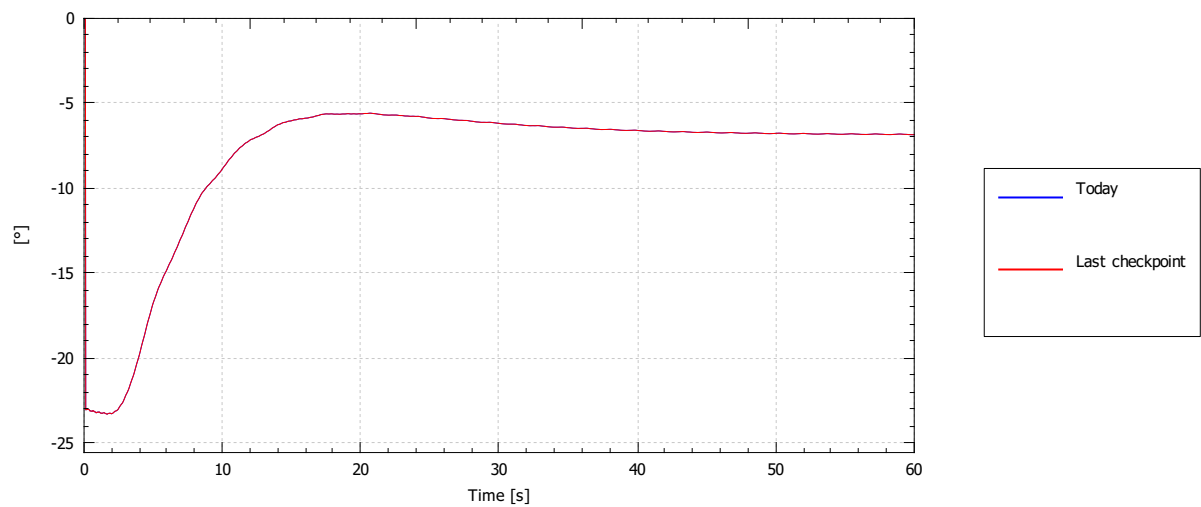
Set point



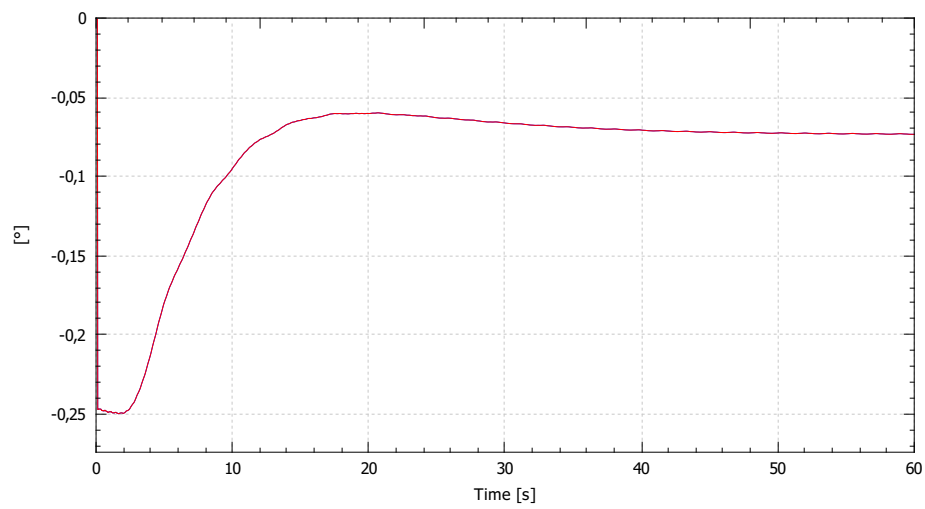
RPM error



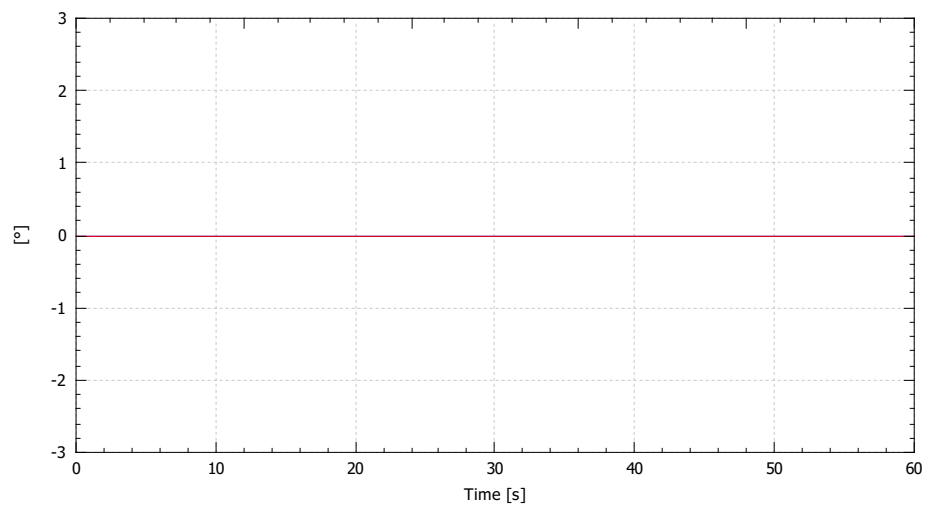
P term



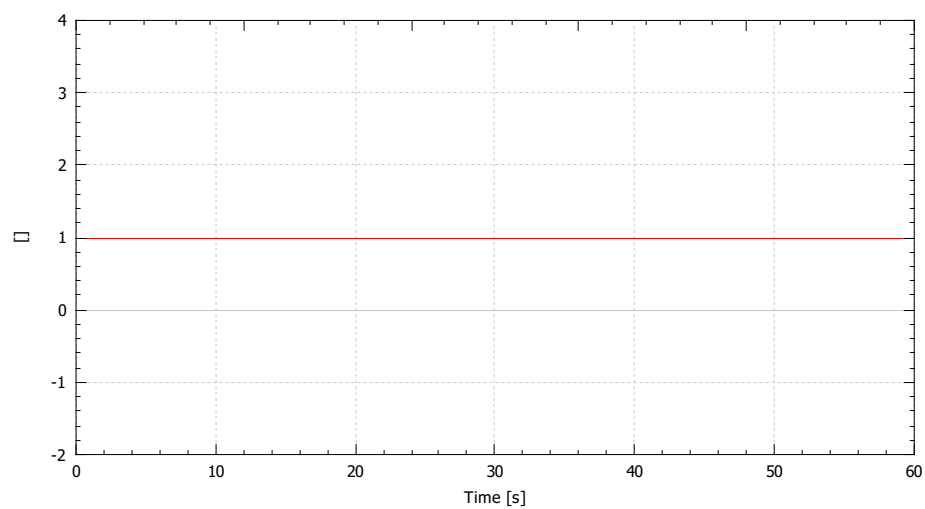
I term

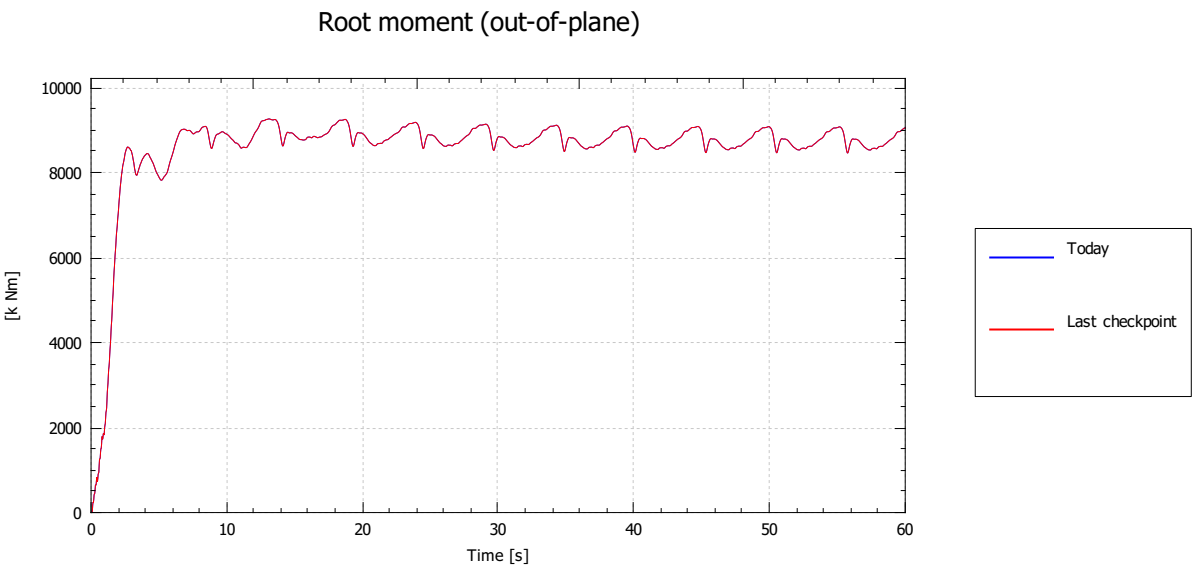
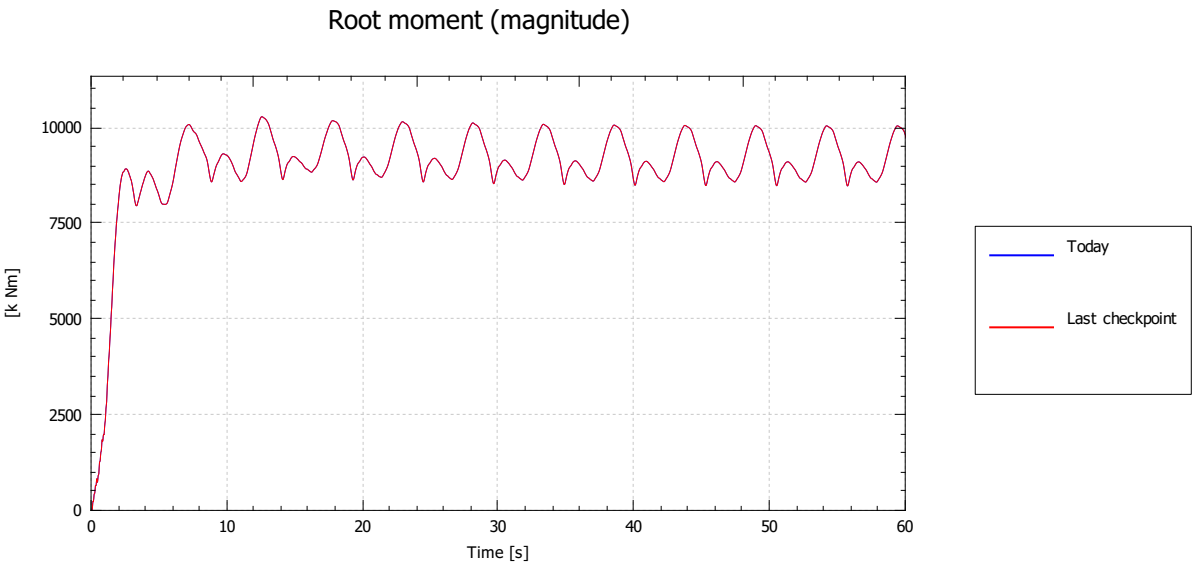
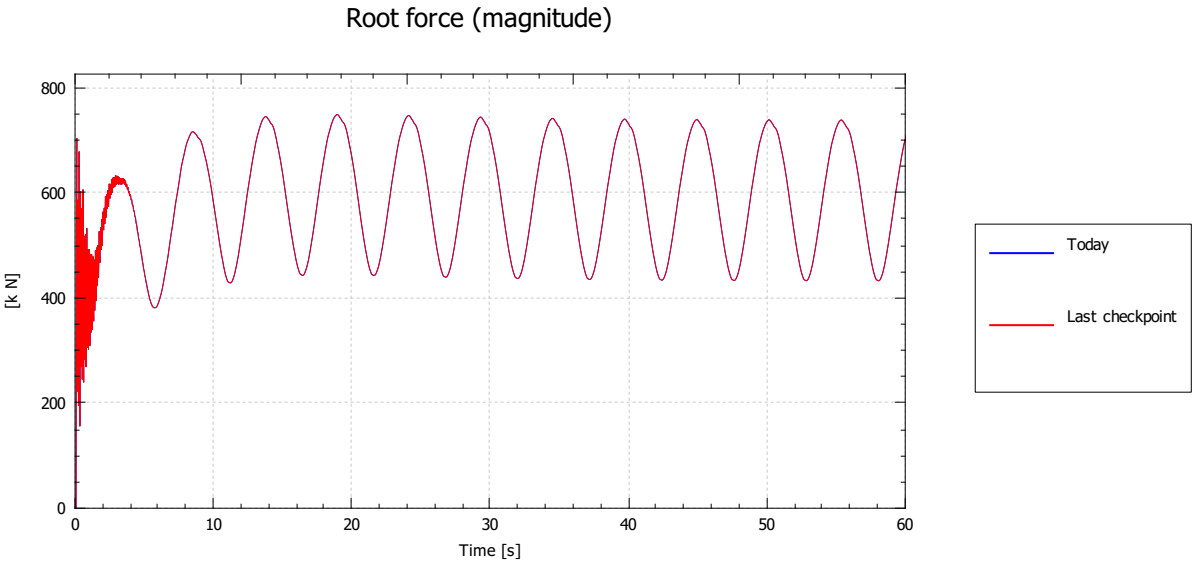


D term

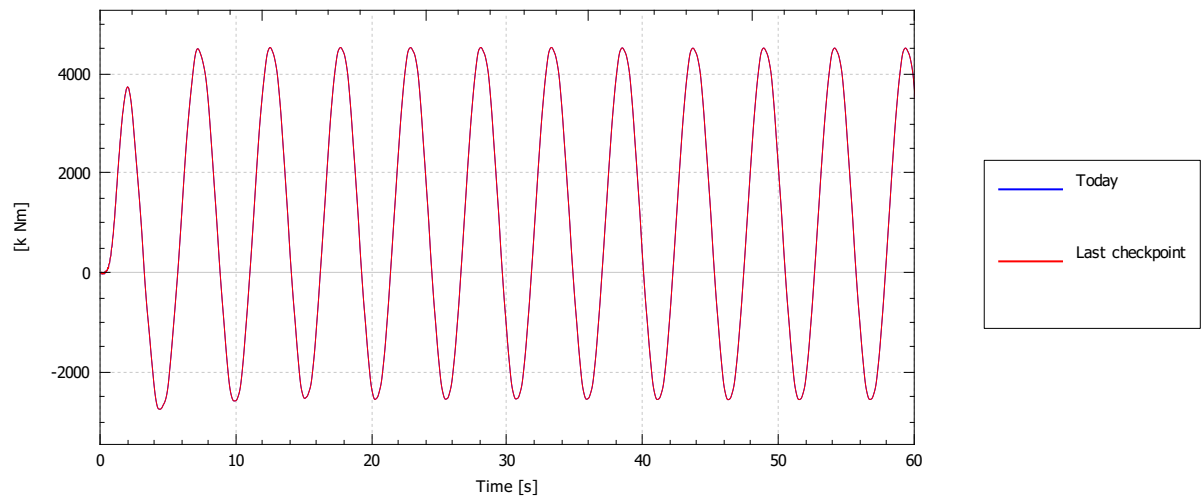


Gain scheduling factor

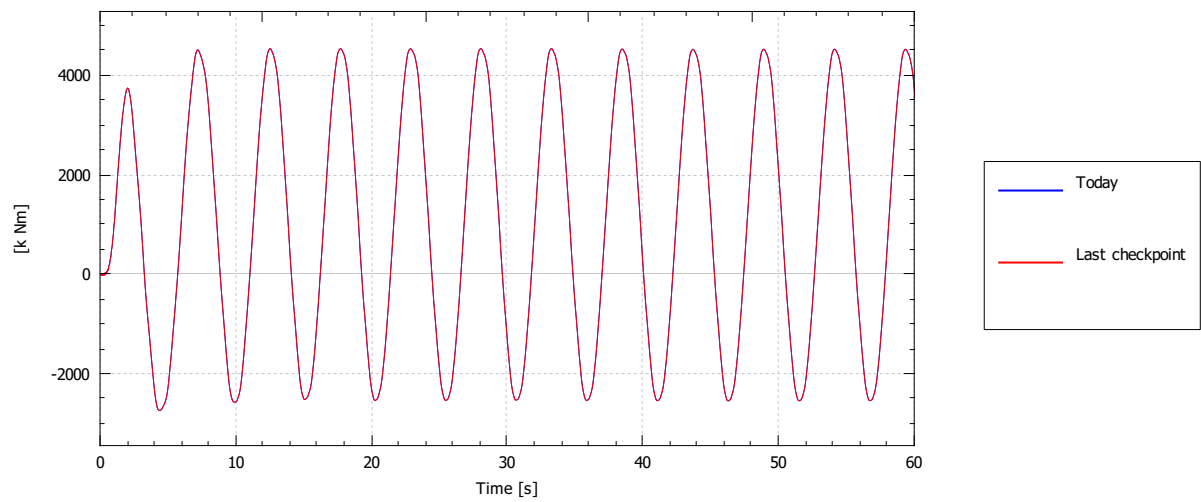




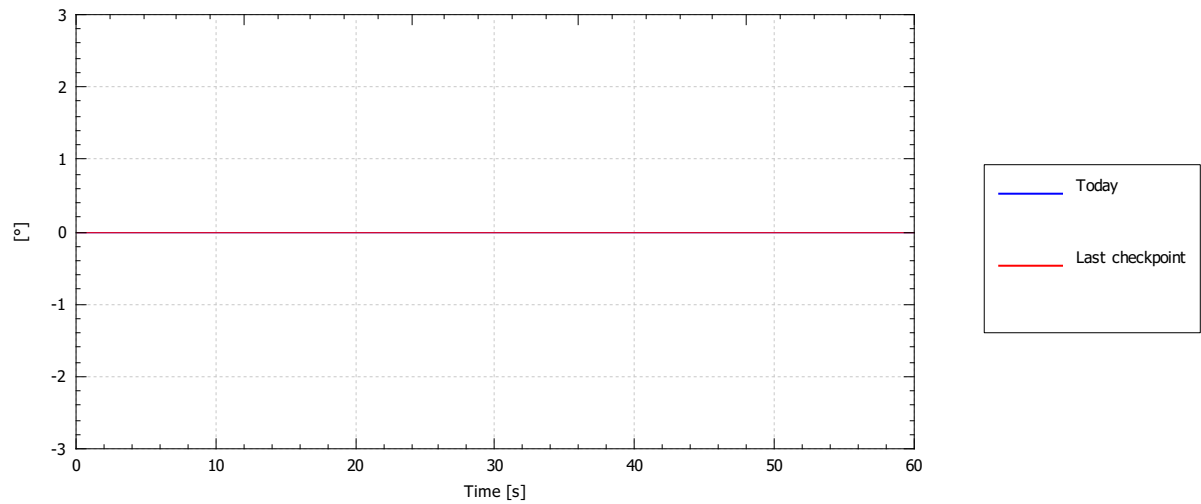
Root moment (in-plane)



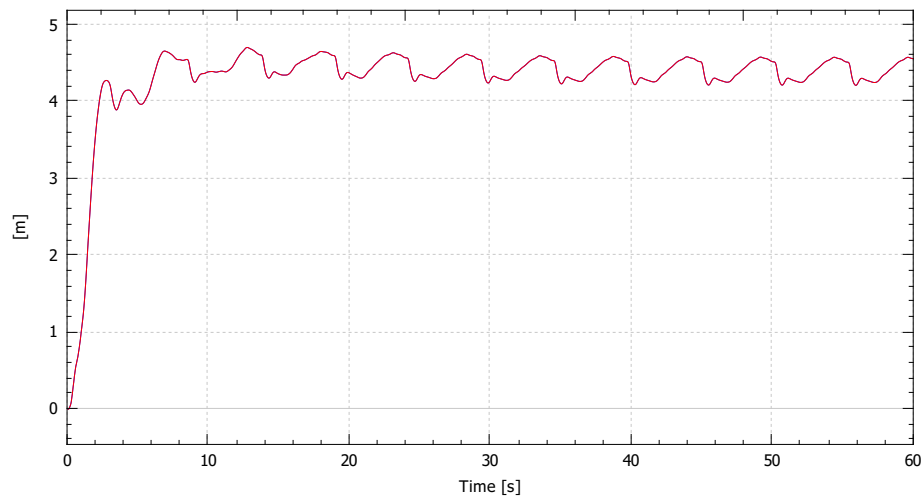
Root moment about shaft



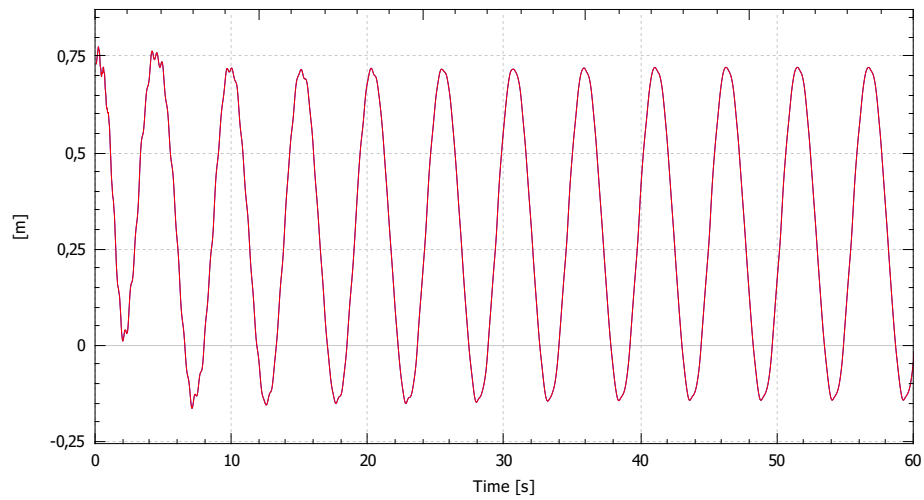
Pitch angle



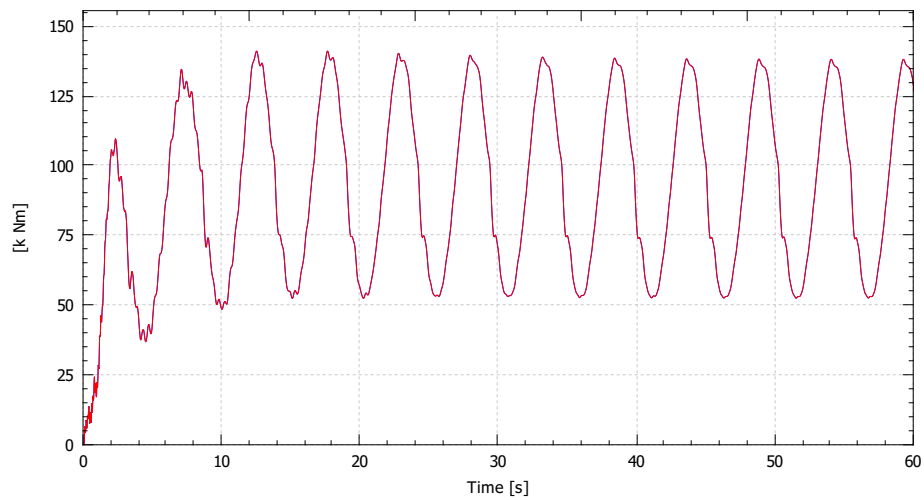
Tip deflection (out-of-plane)

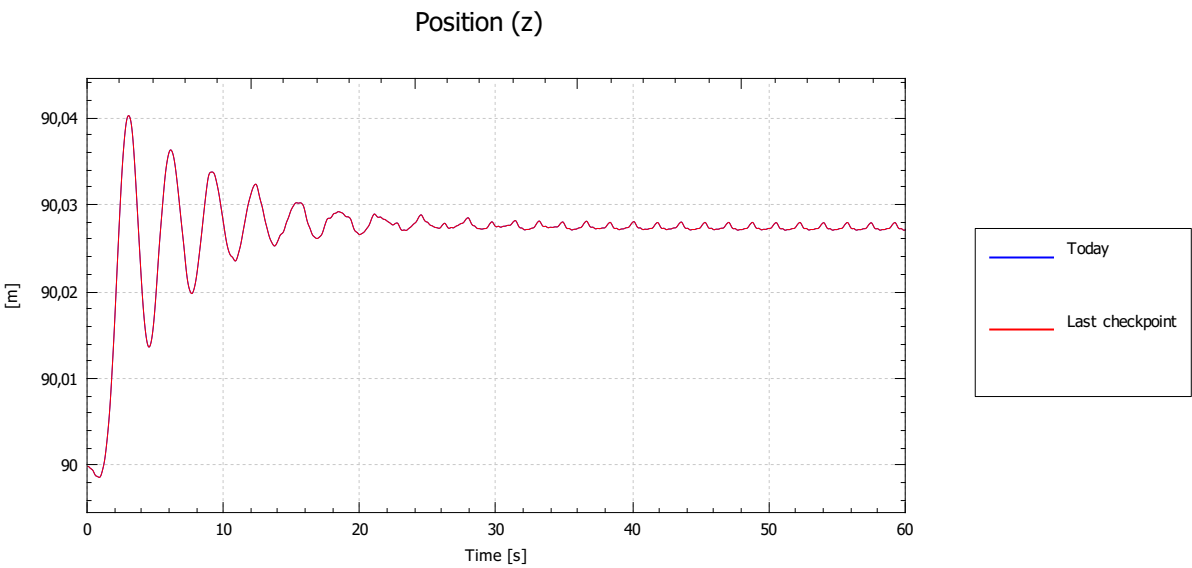
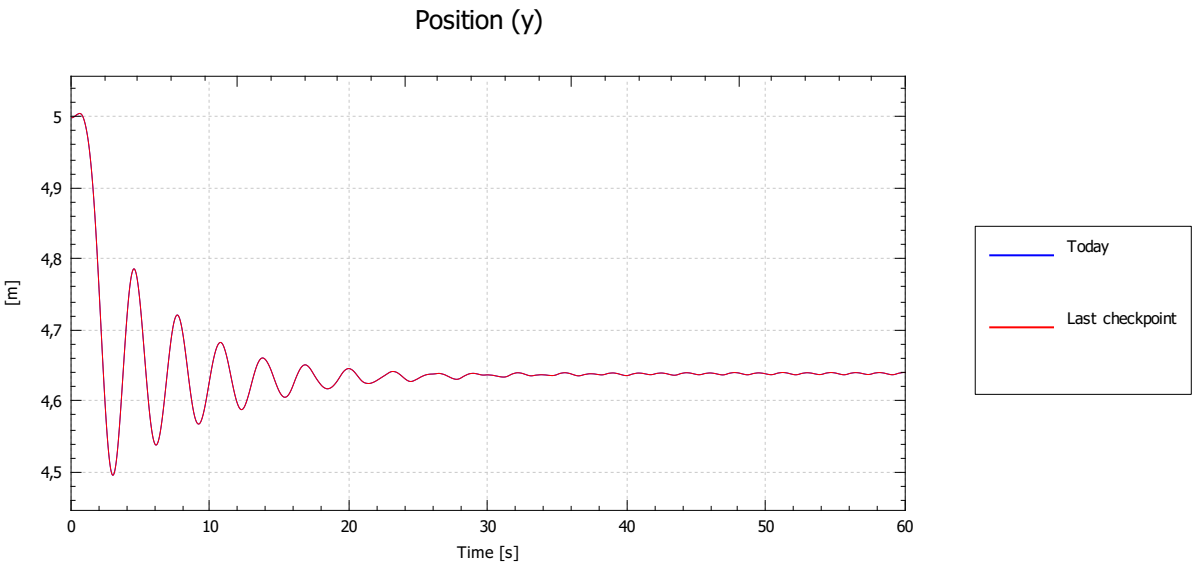
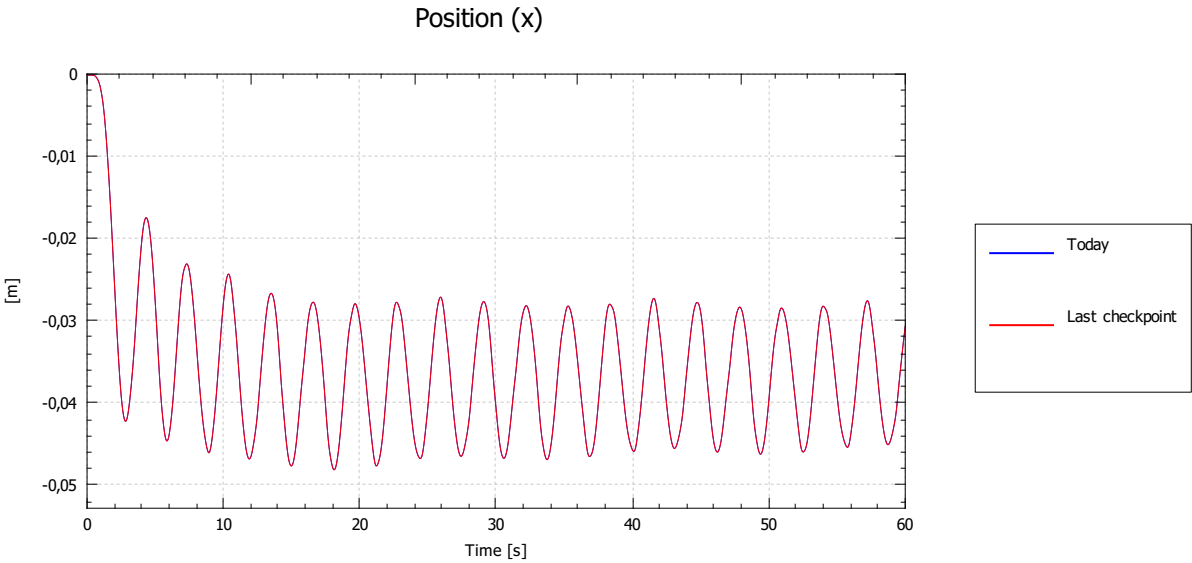


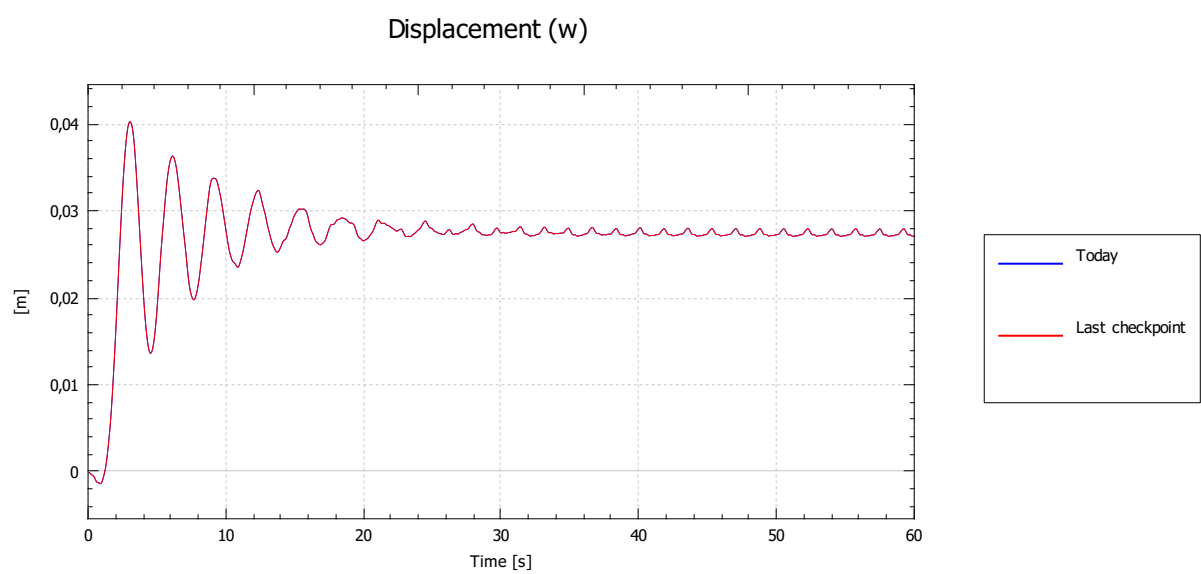
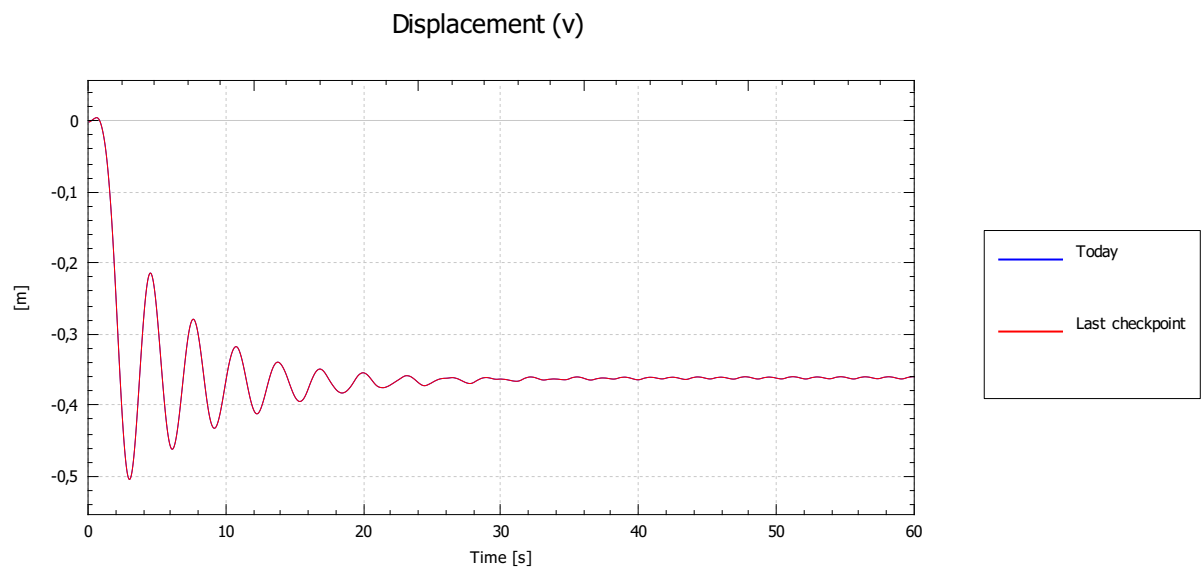
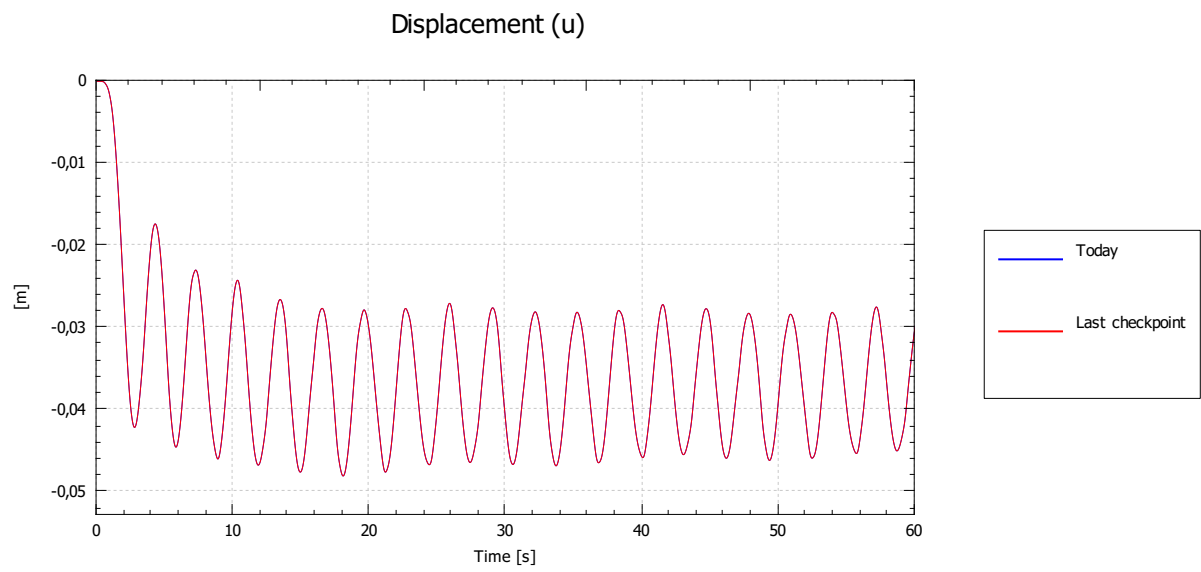
Tip deflection (in-plane)



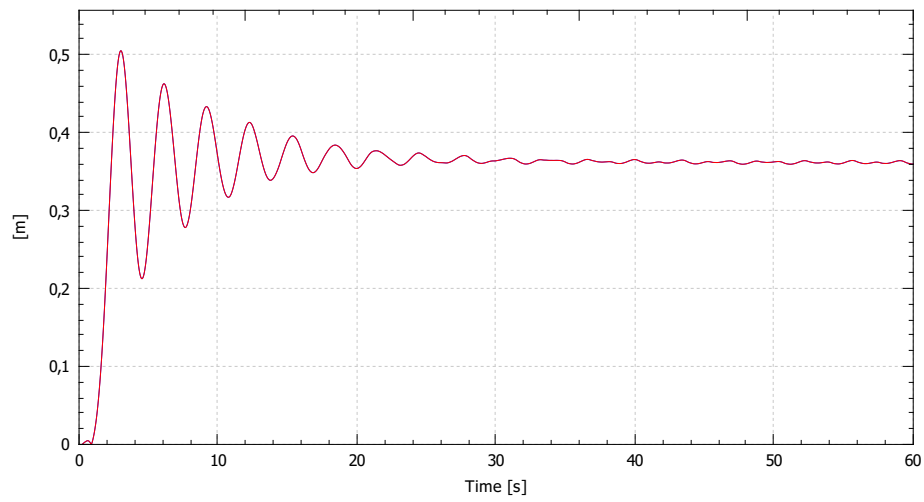
Root torque



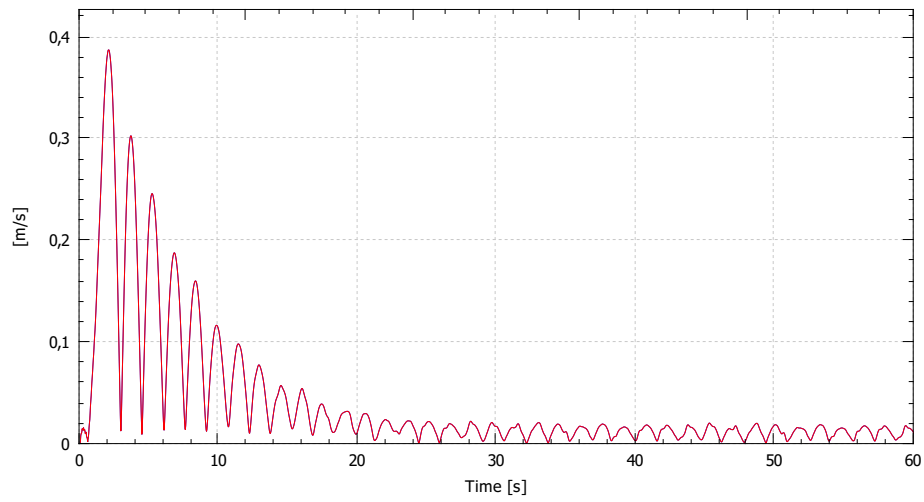




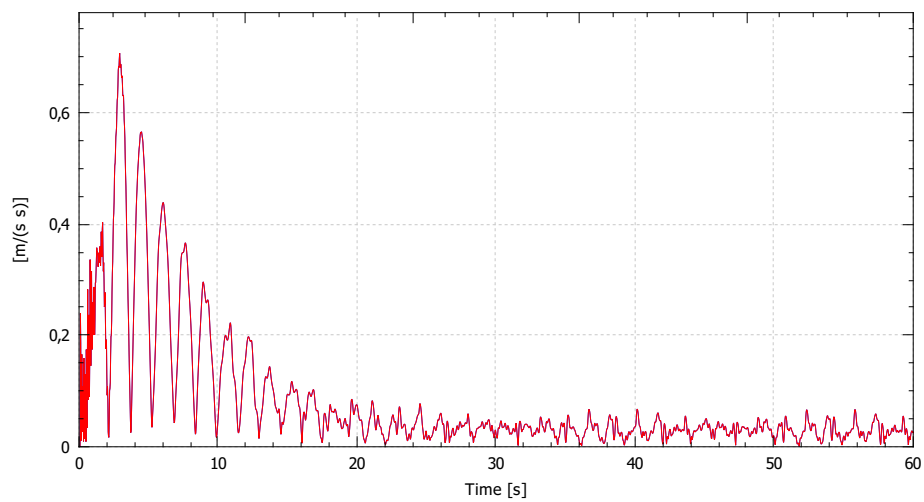
Displacement magnitude



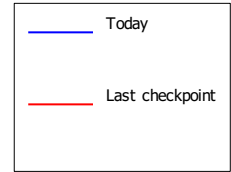
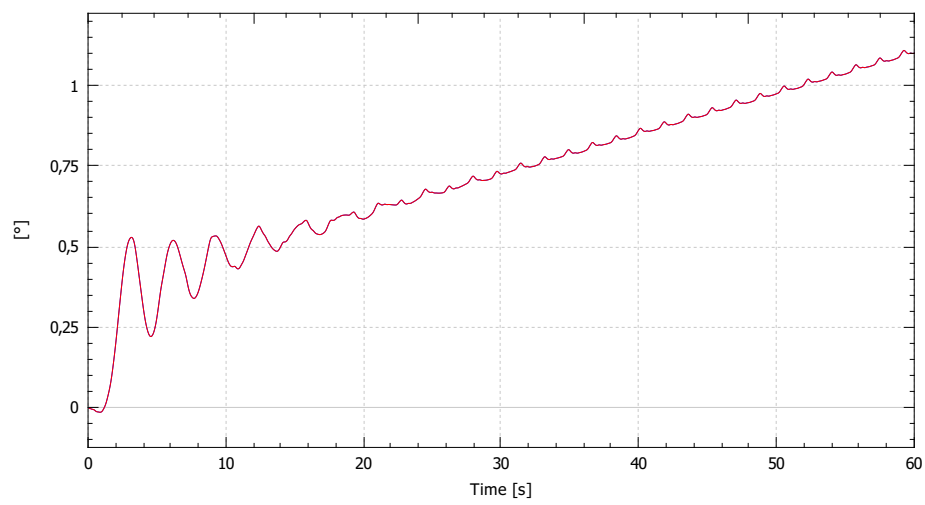
Speed



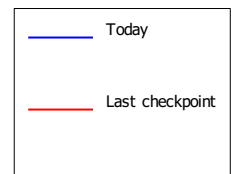
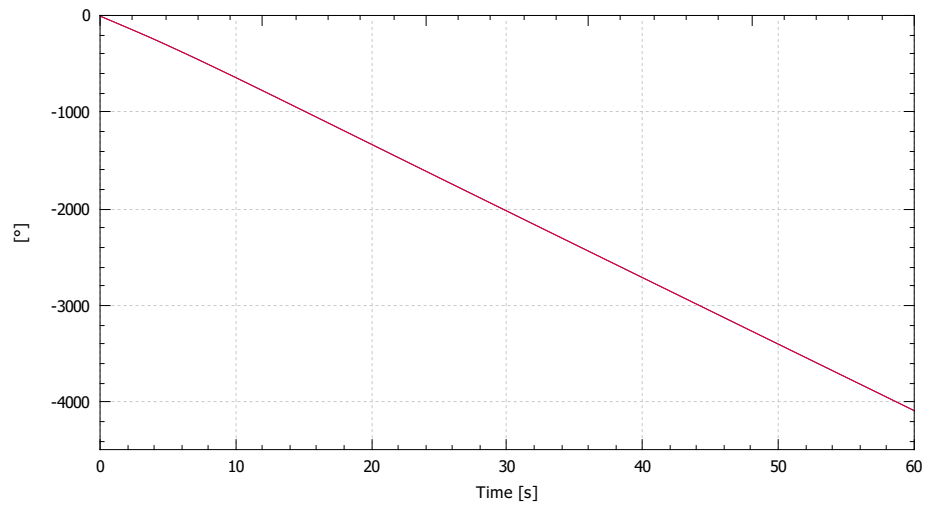
Acceleration, magnitude



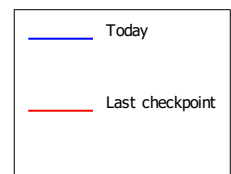
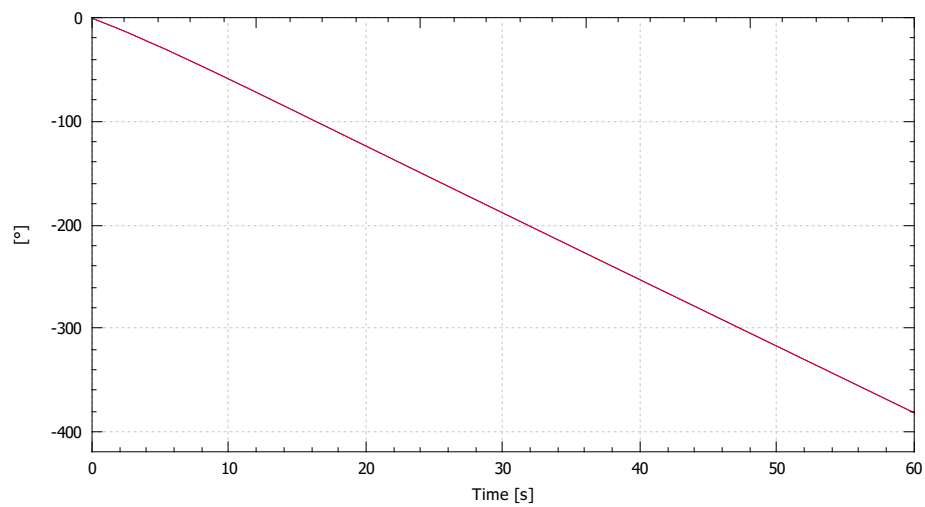
Rotational displacement (ru)



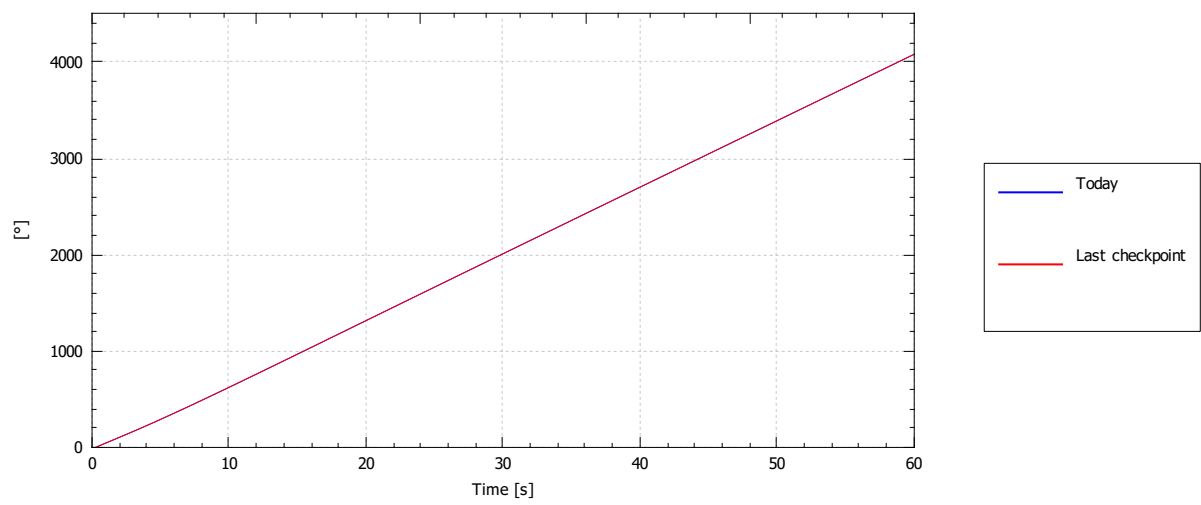
Rotational displacement (rv)



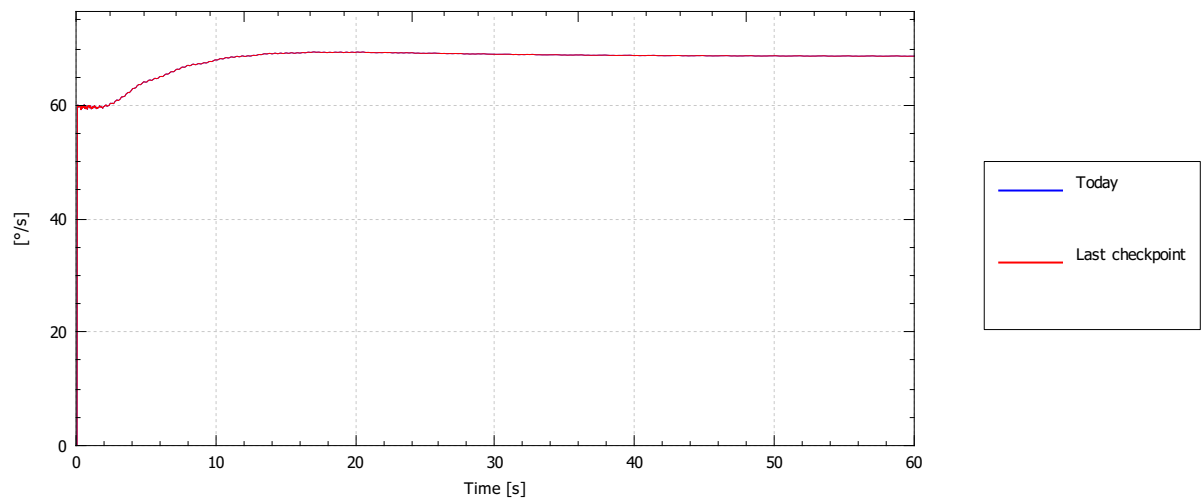
Rotational displacement (rw)



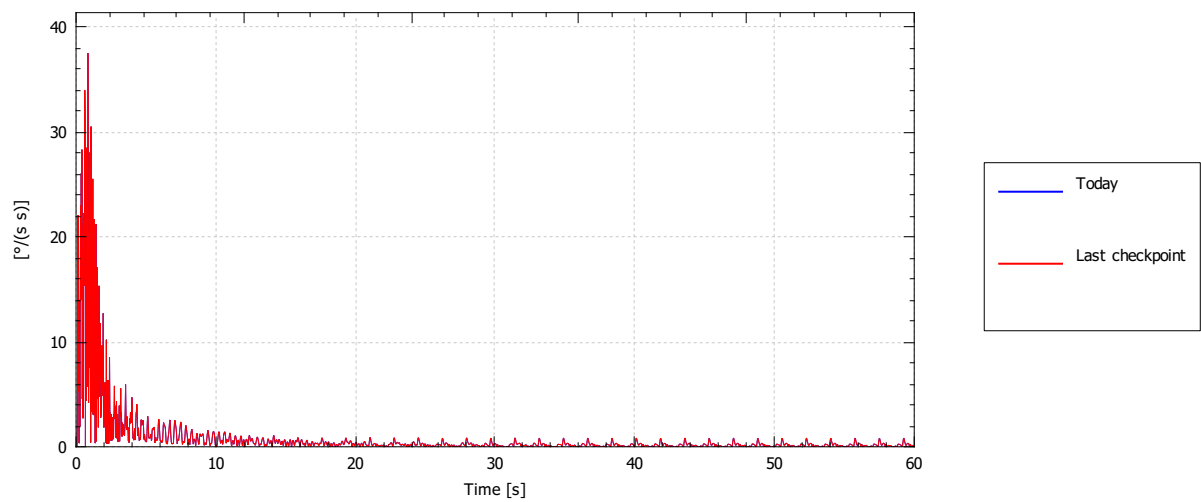
Rotational displacement magnitude



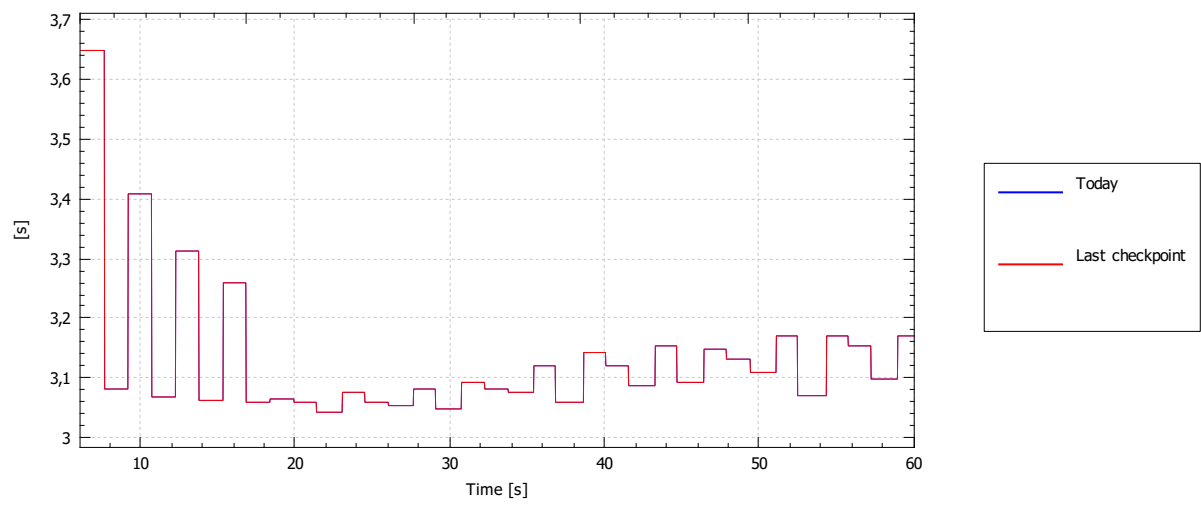
Rotational speed



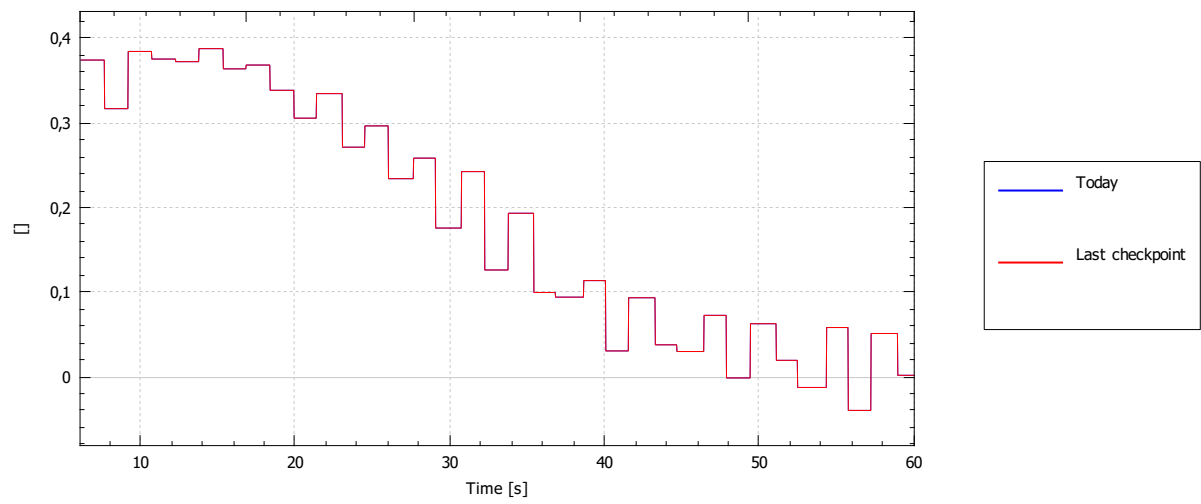
Rotational acceleration mag



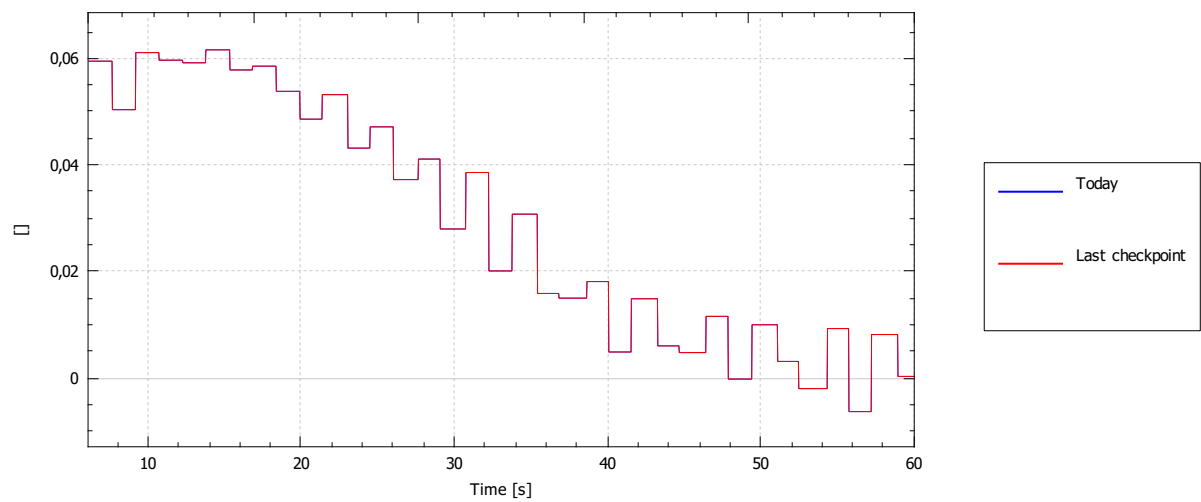
Displacement period



Displacement logarithmic decrement

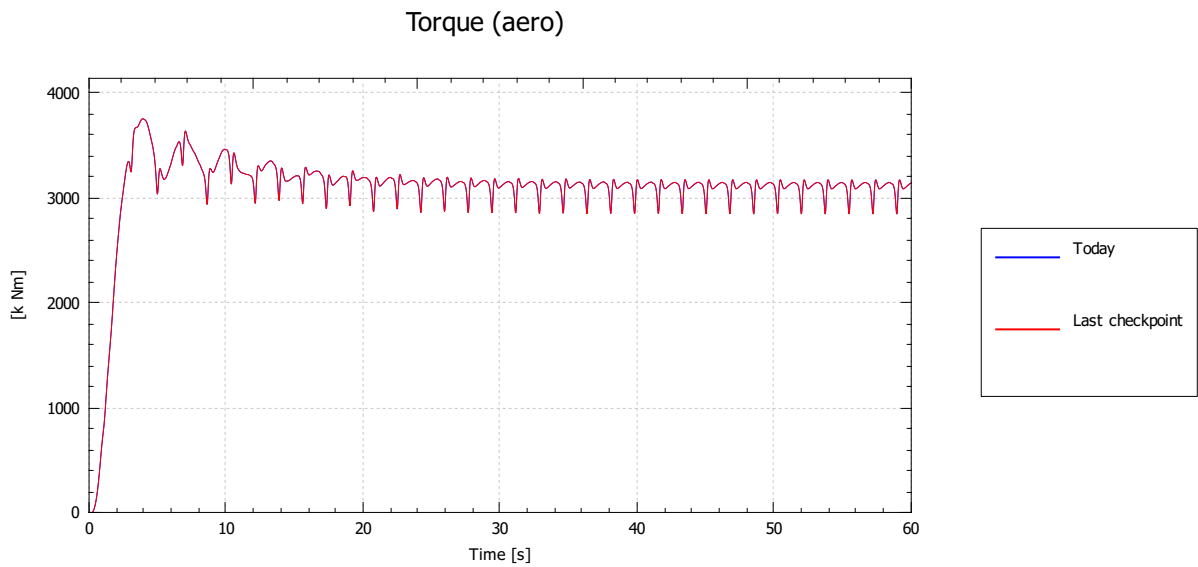
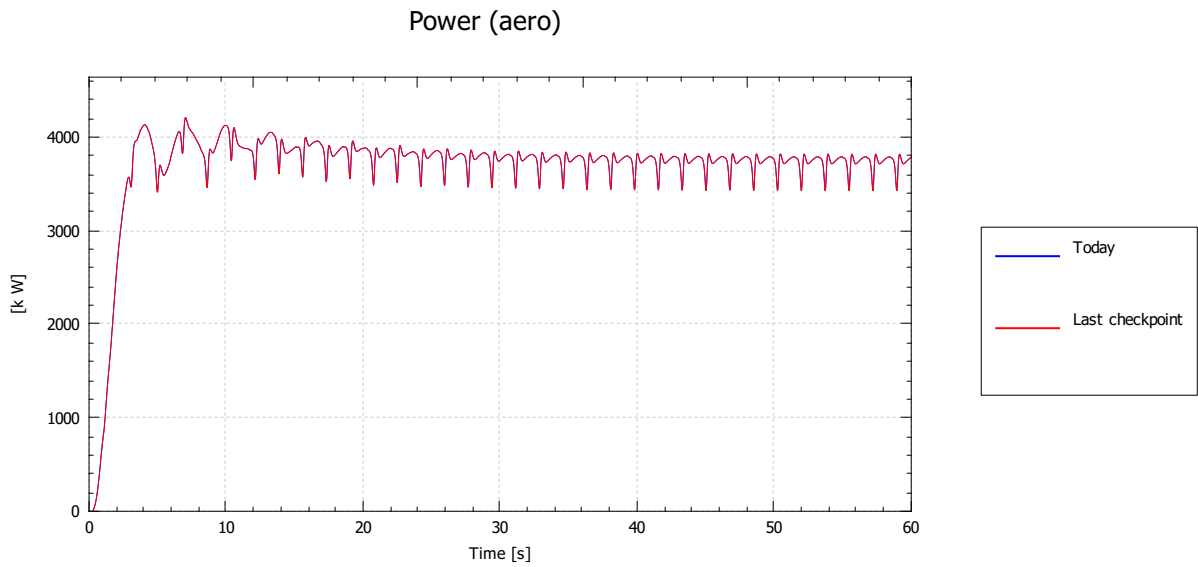


Displacement damping ratio

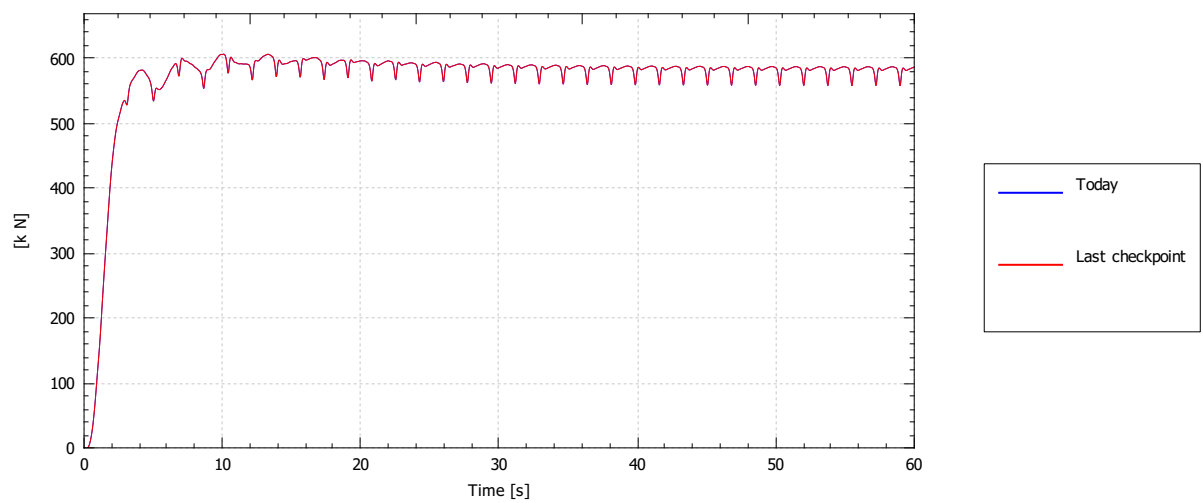


Load case: Pitch rotational inertia

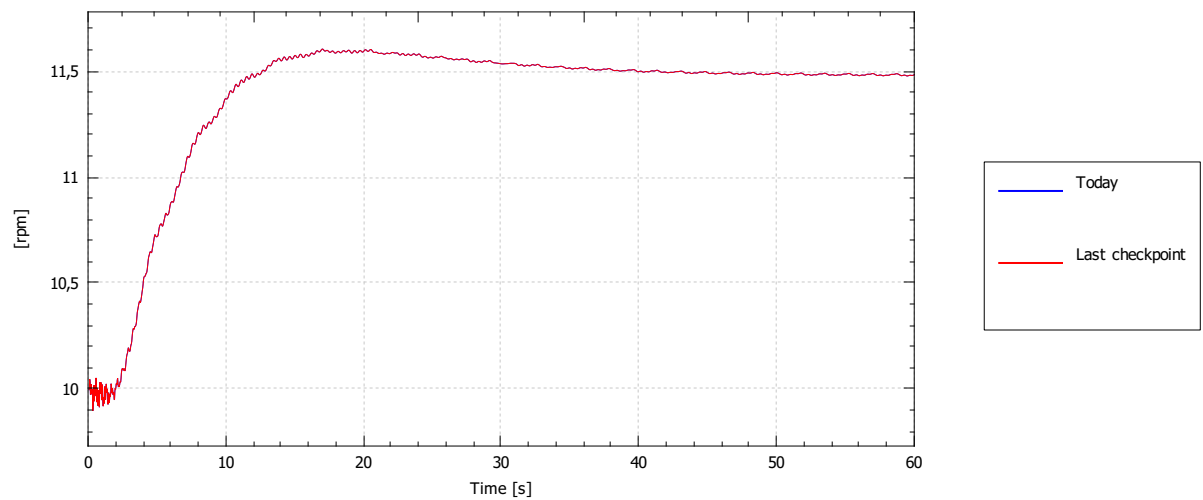
Rotor



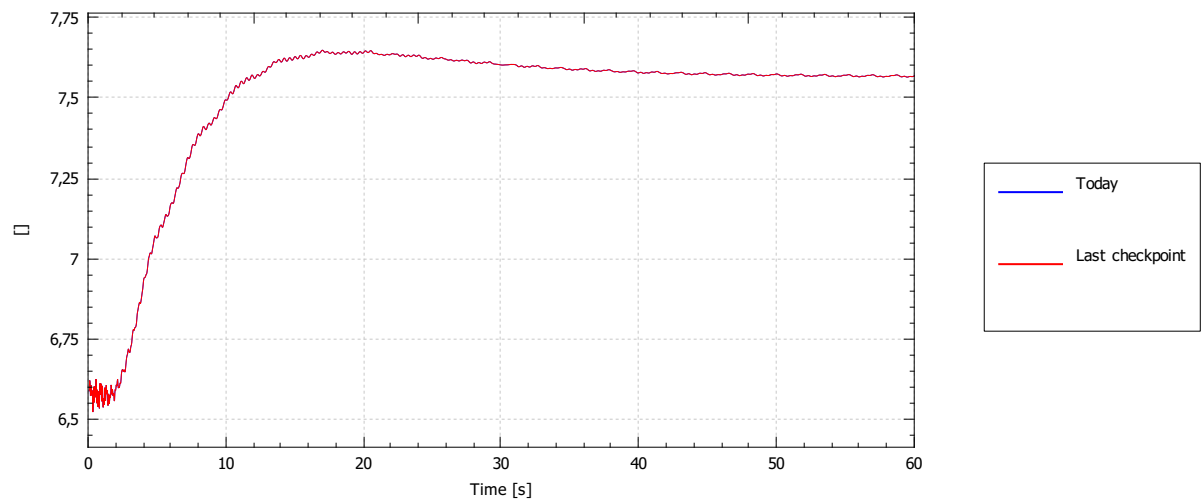
Thrust (aero)



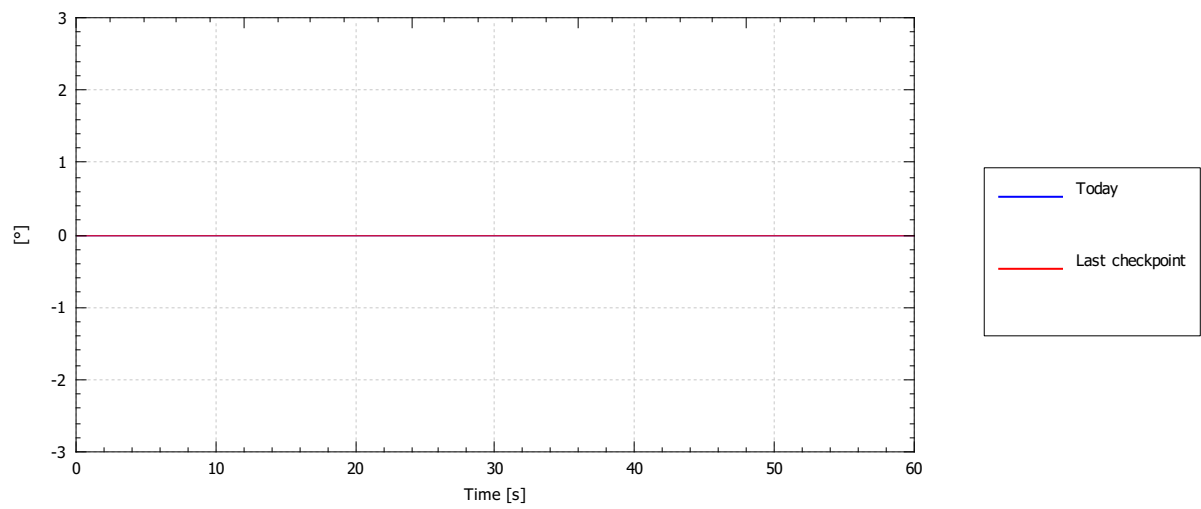
RPM



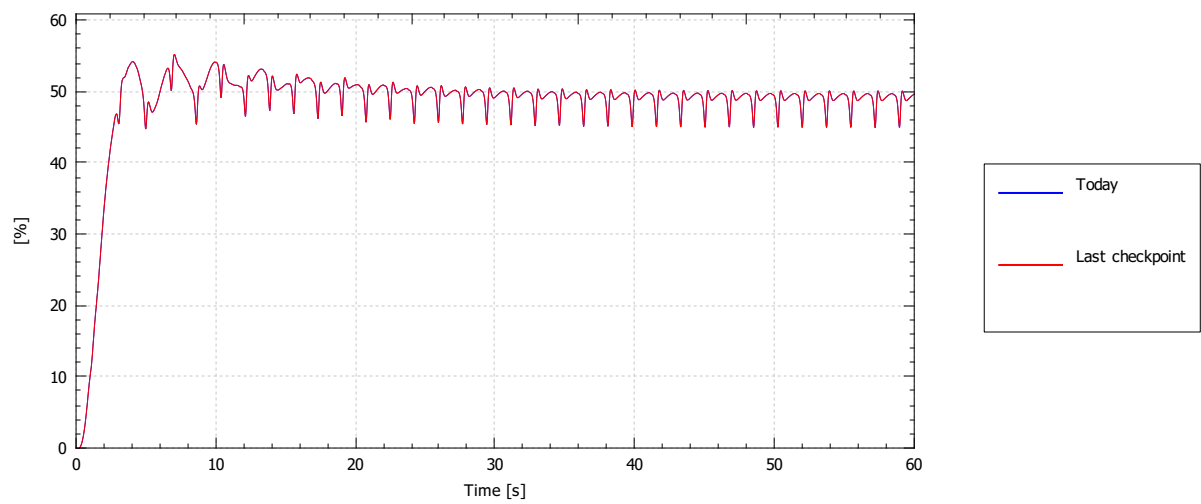
TSR



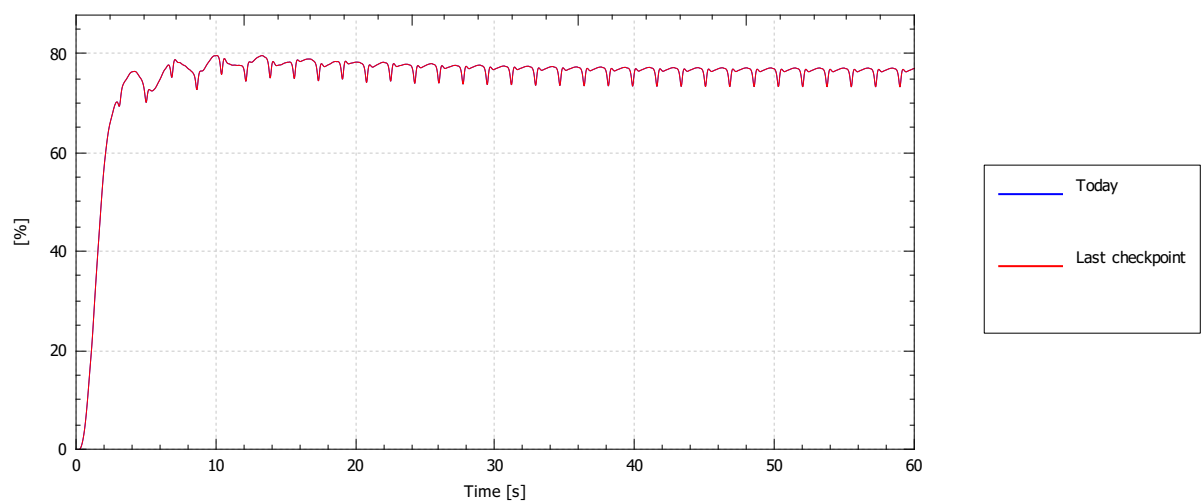
Representative demanded pitch angle



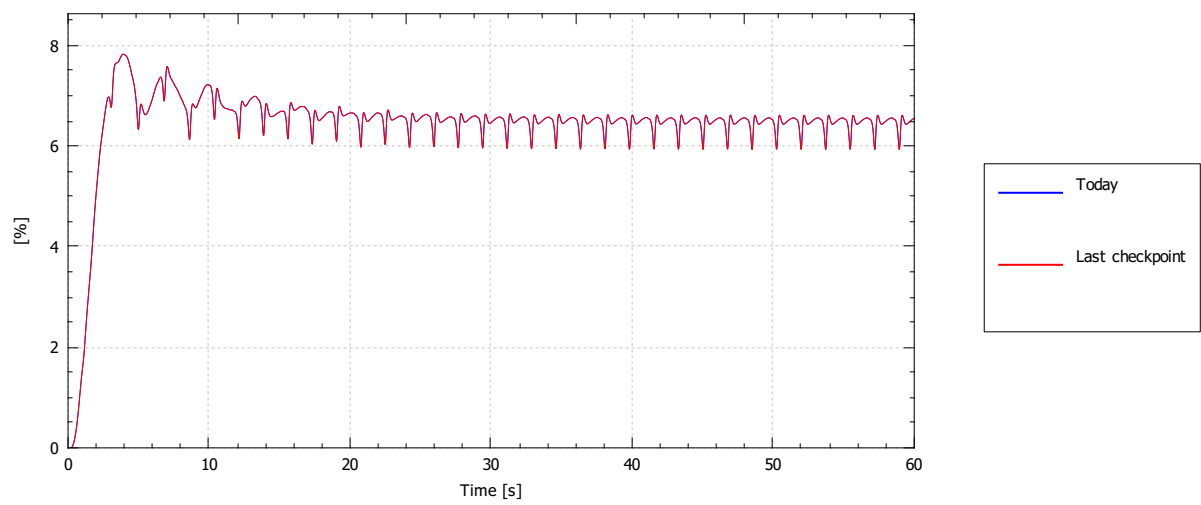
Power coef. (CP)



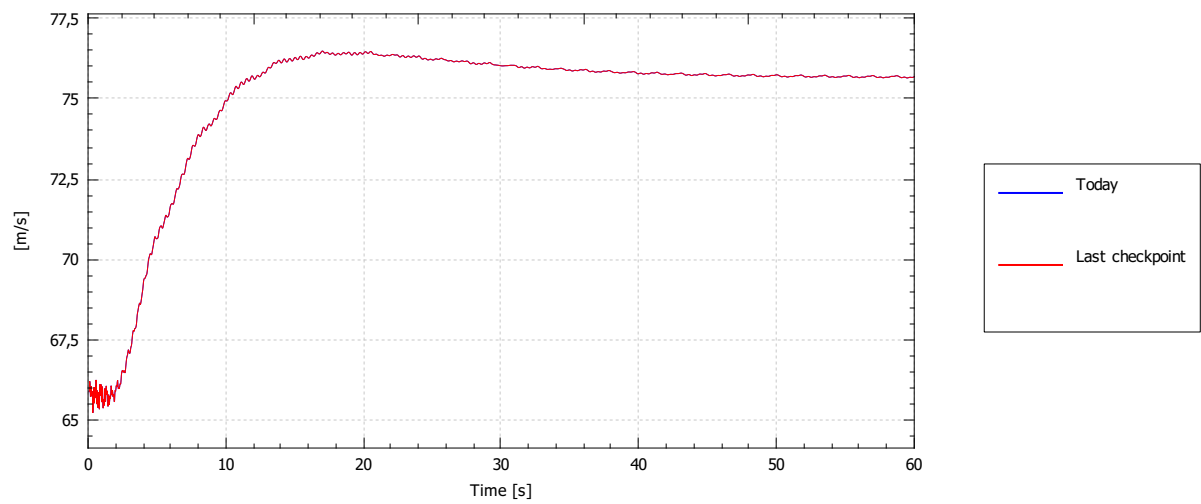
Thrust coef. (CT)



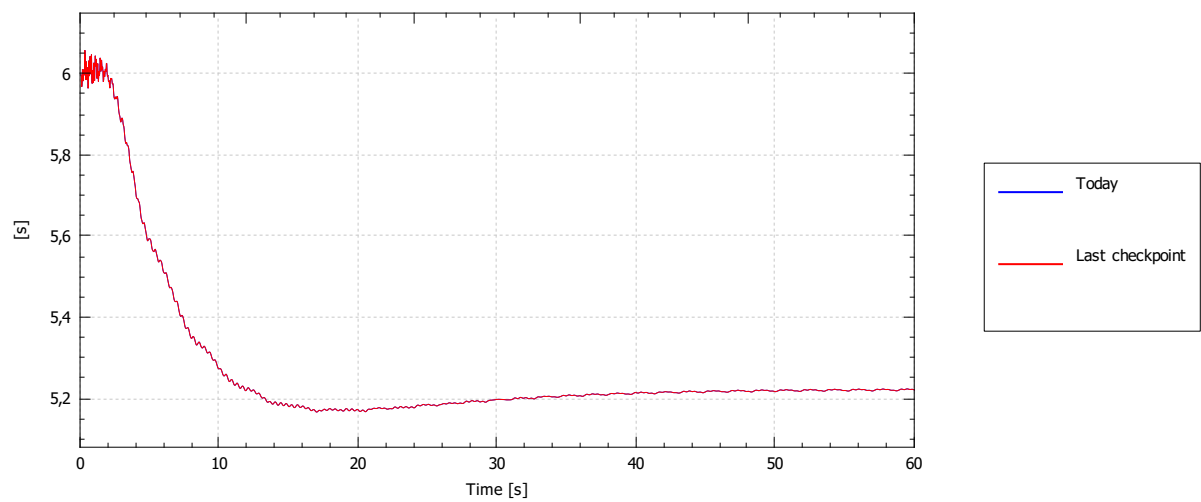
Torque coef. (CQ)



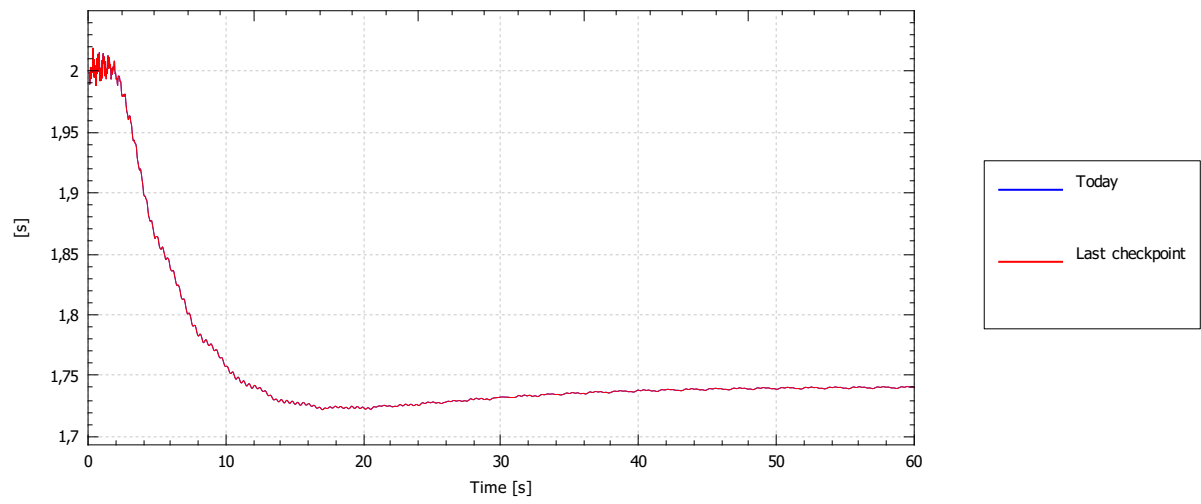
Tip speed



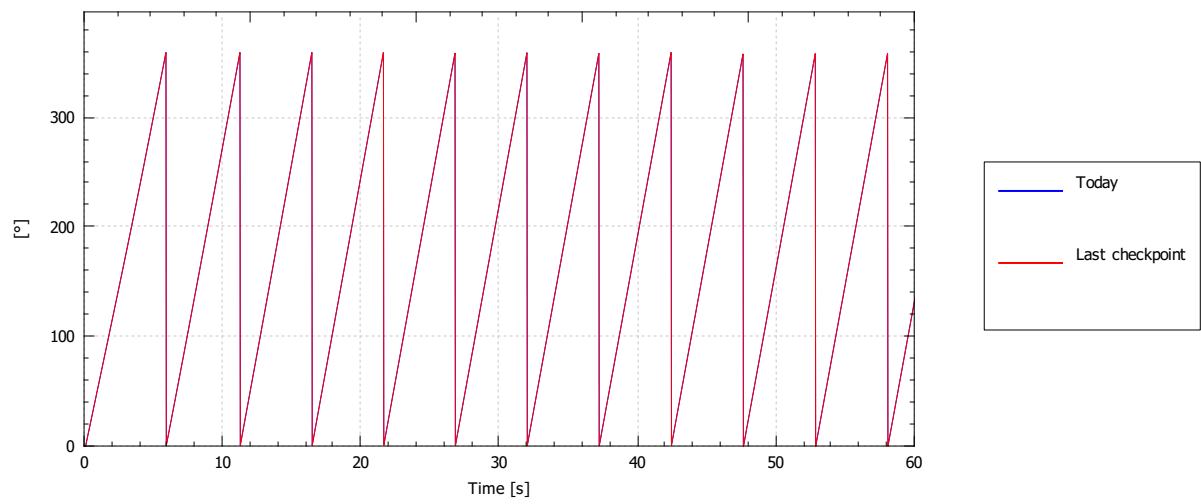
1P (one revolution)



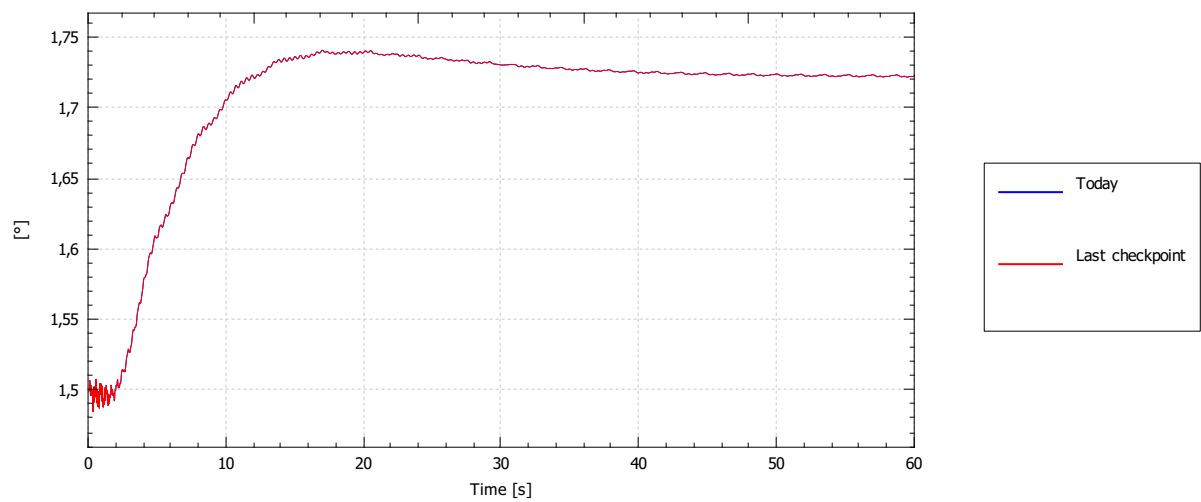
nP (blade passing)



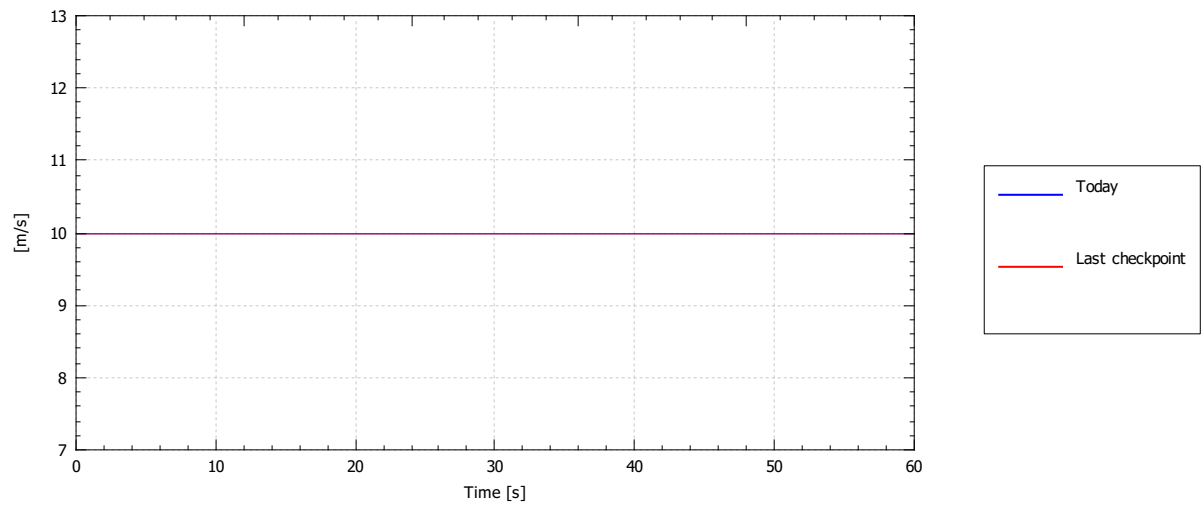
Azimuth angle



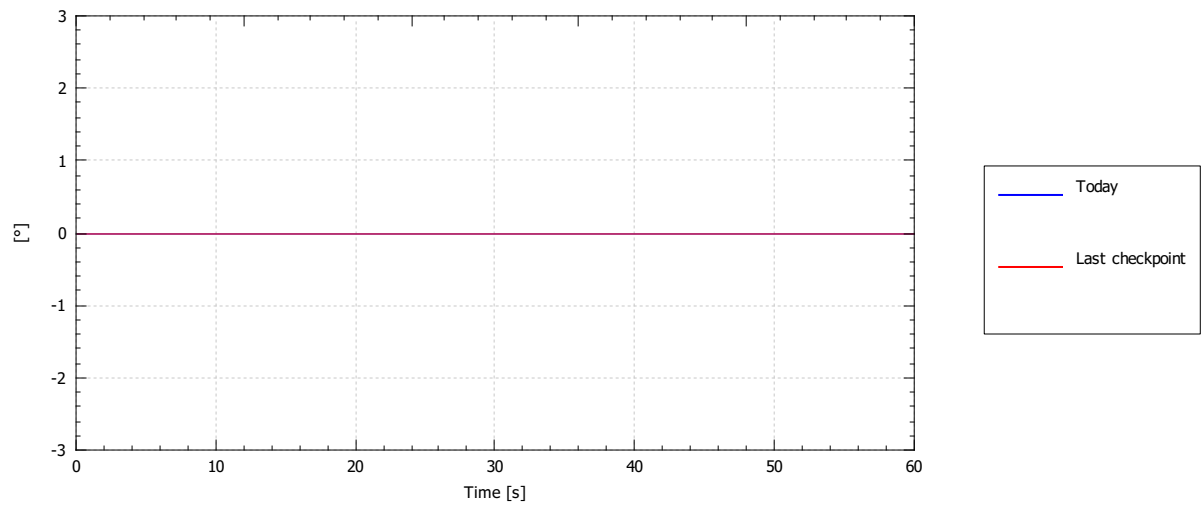
Rotation per timestep



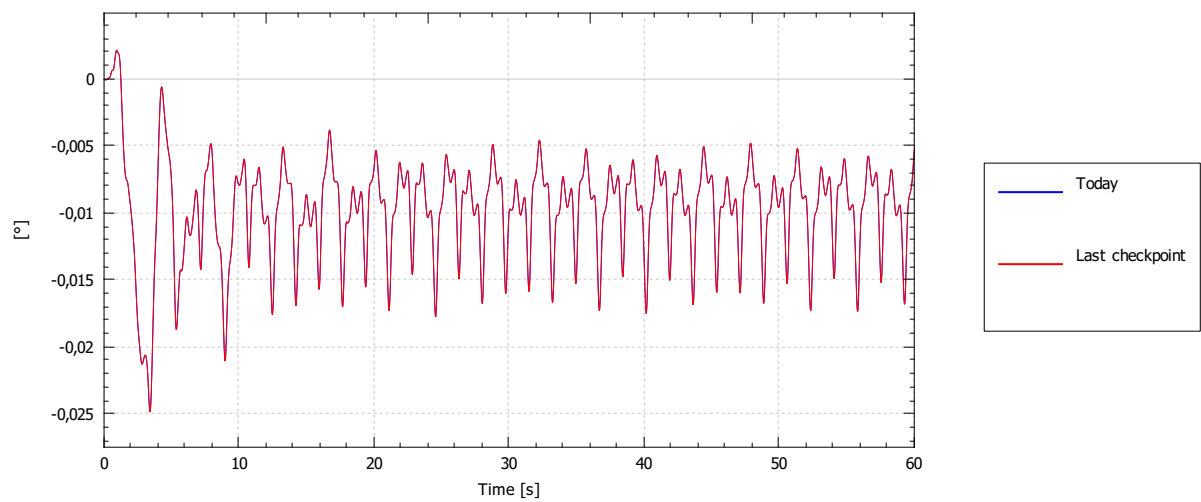
Wind speed at hub, magnitude



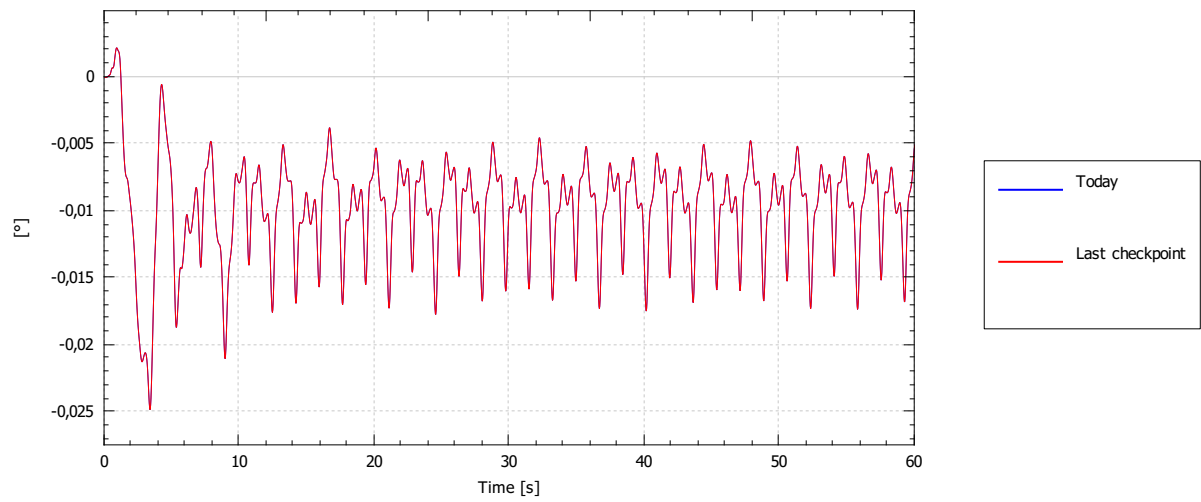
Wind angle at hub



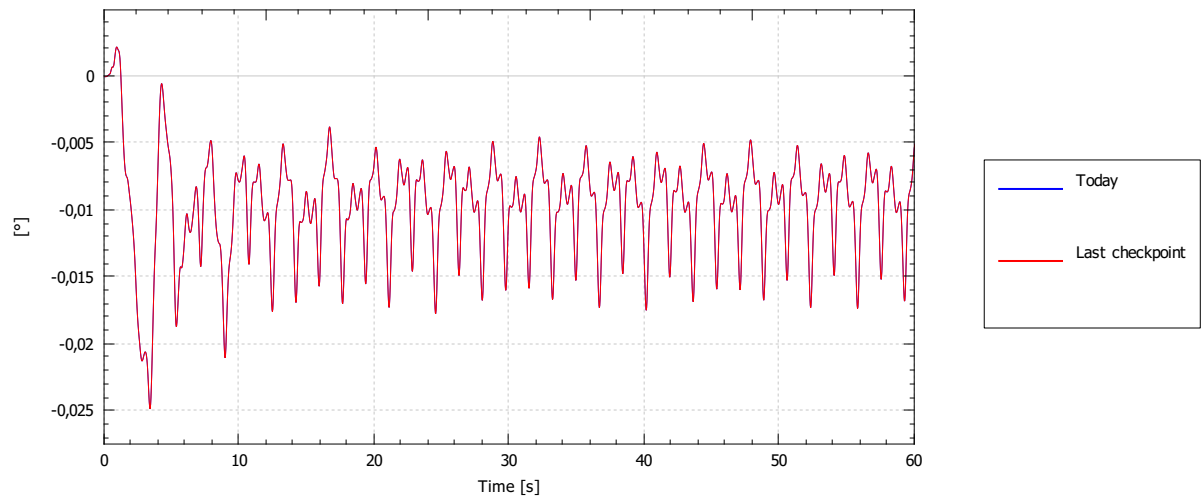
Yaw angle relative to forward



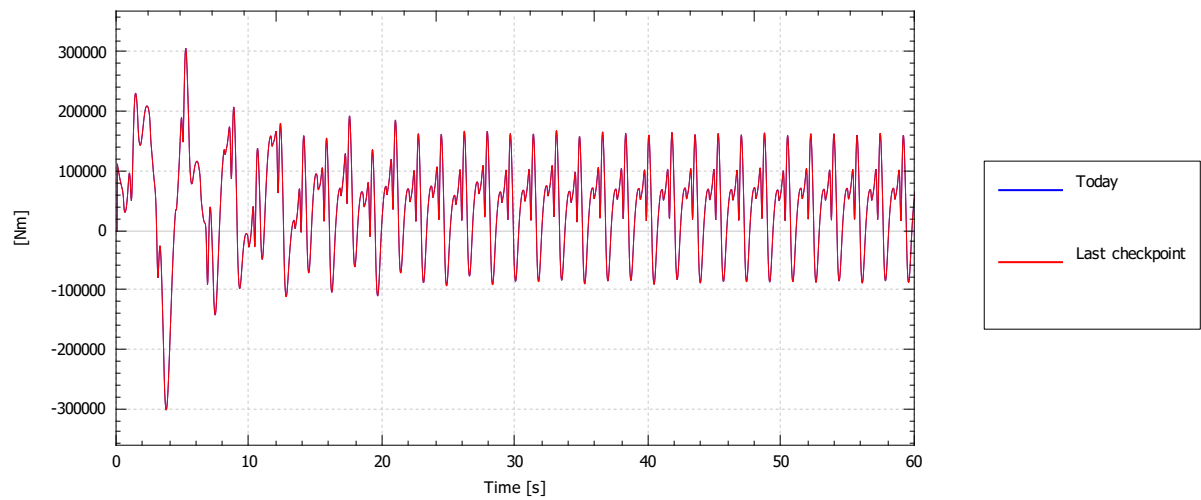
Yaw angle to reference direction



Yaw error

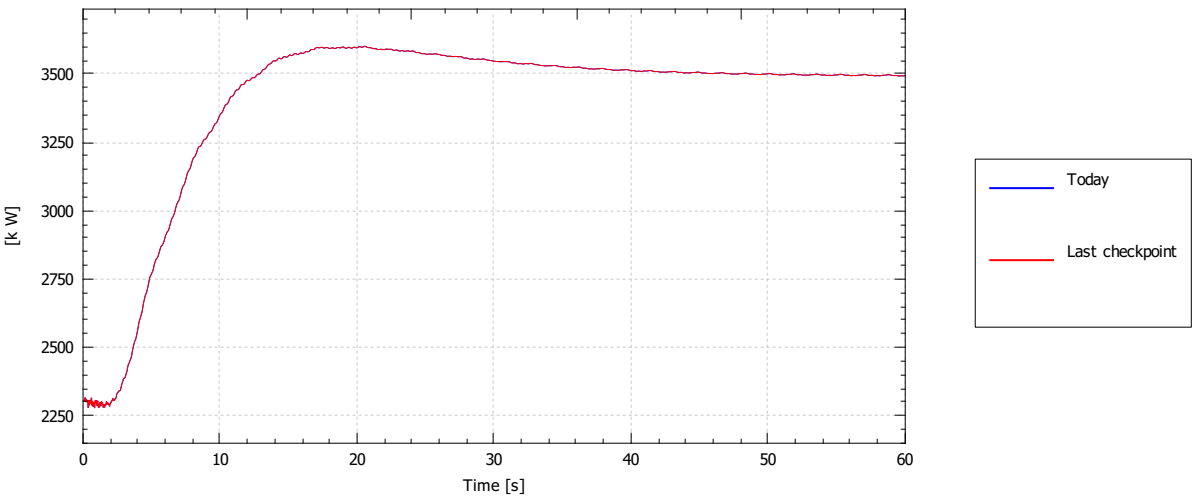


Torque about yaw axis

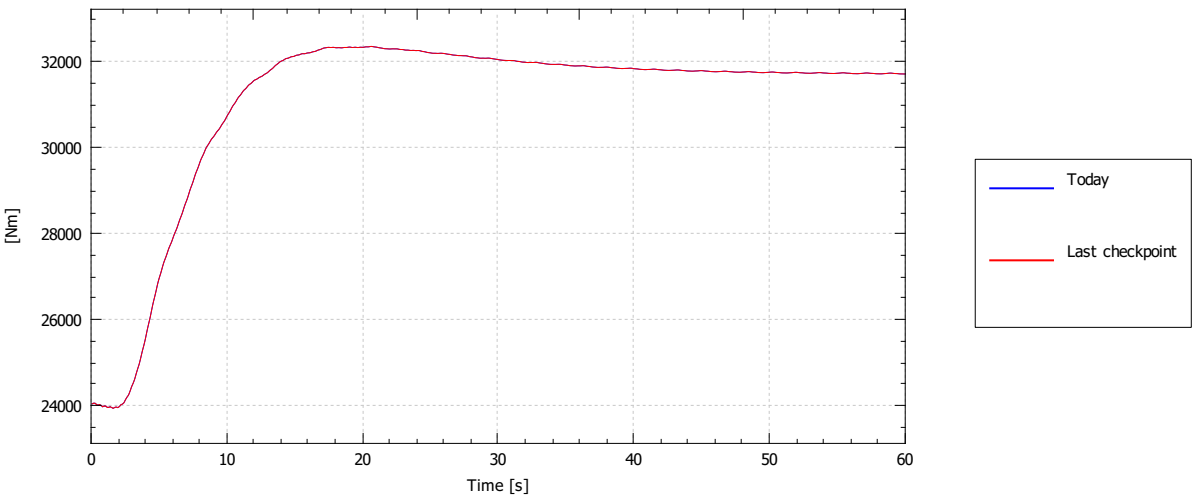


Generator

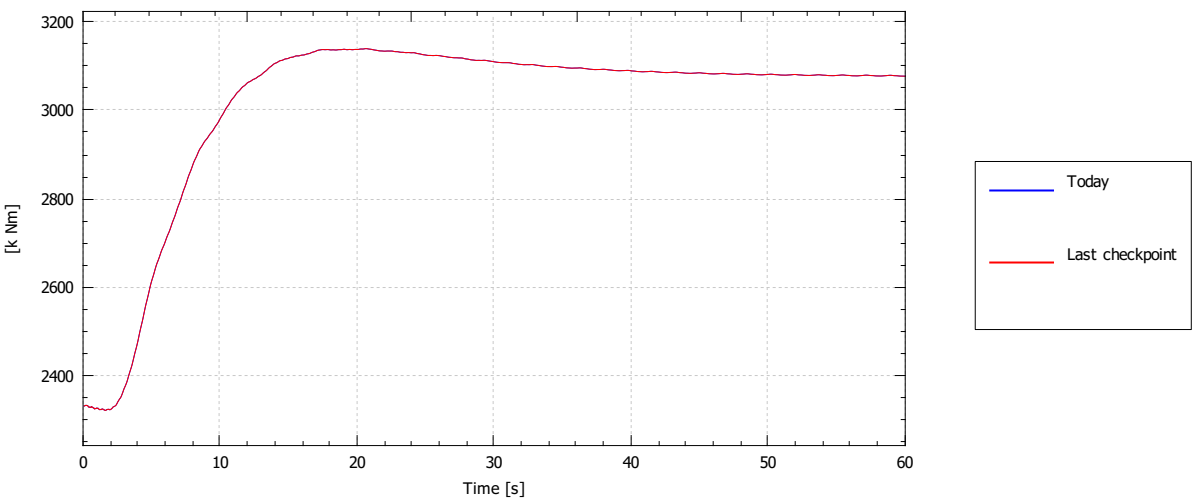
Power (electrical)



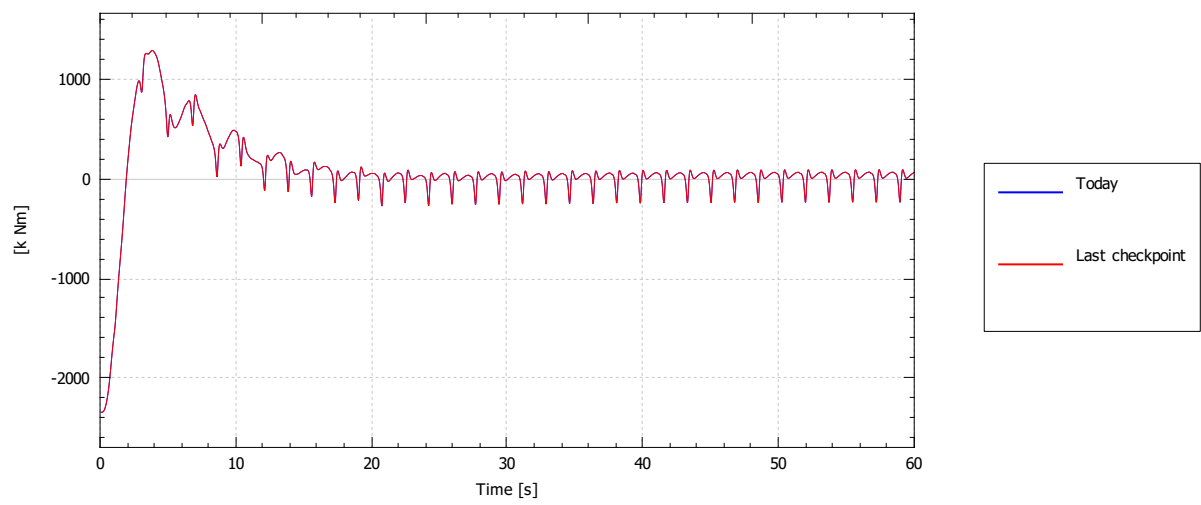
Torque



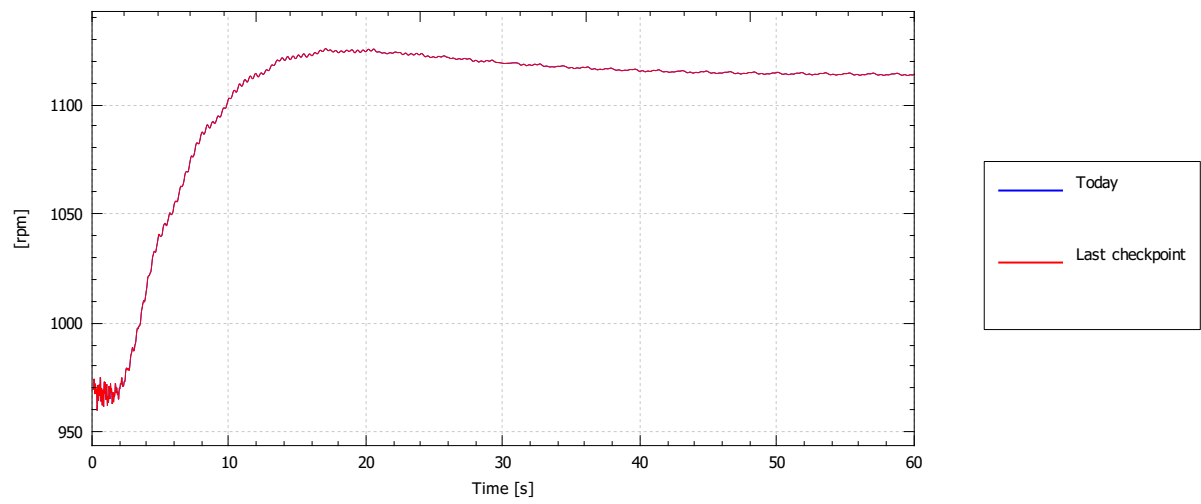
Torque on main shaft



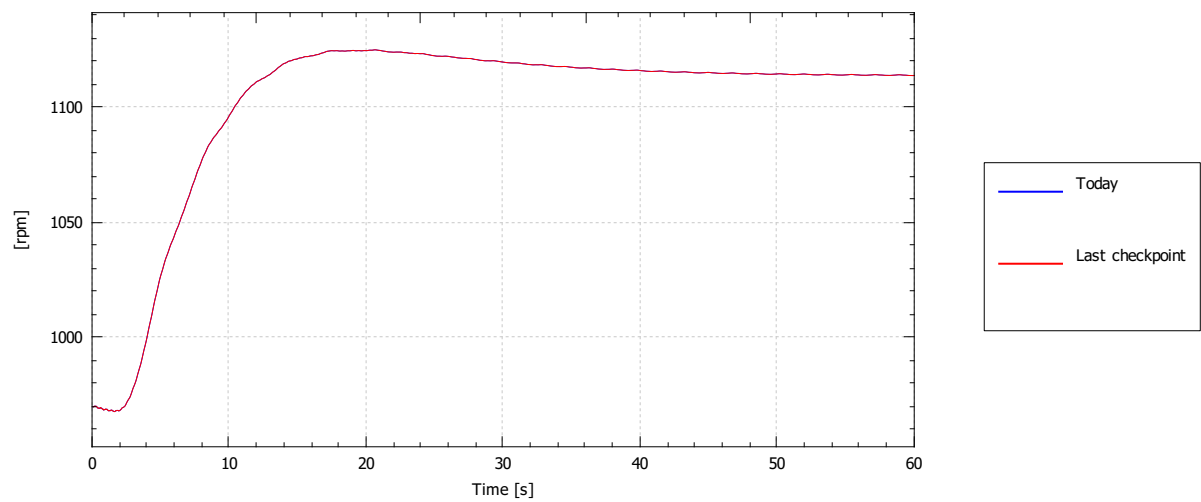
Torque diff. on main shaft



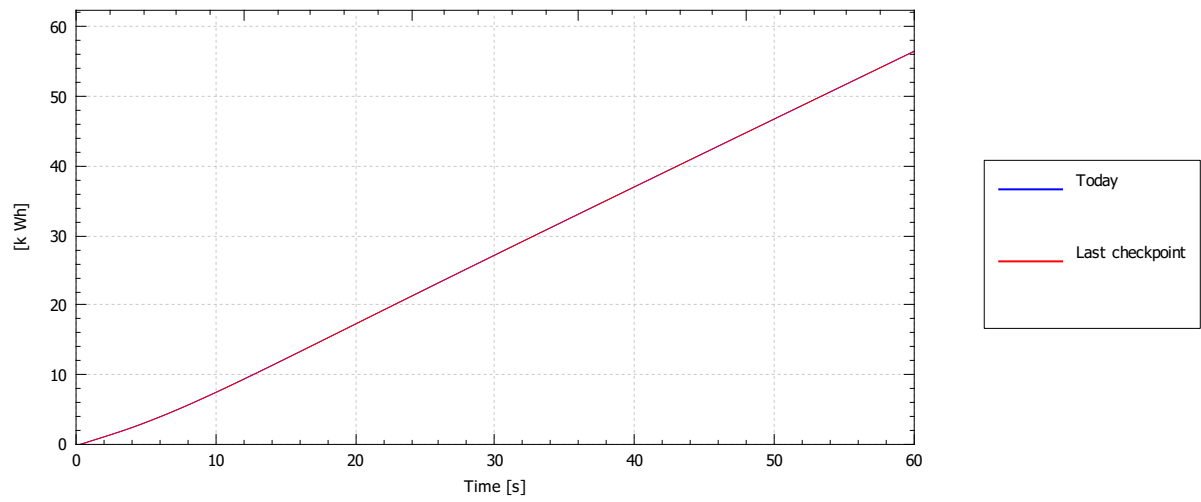
RPM



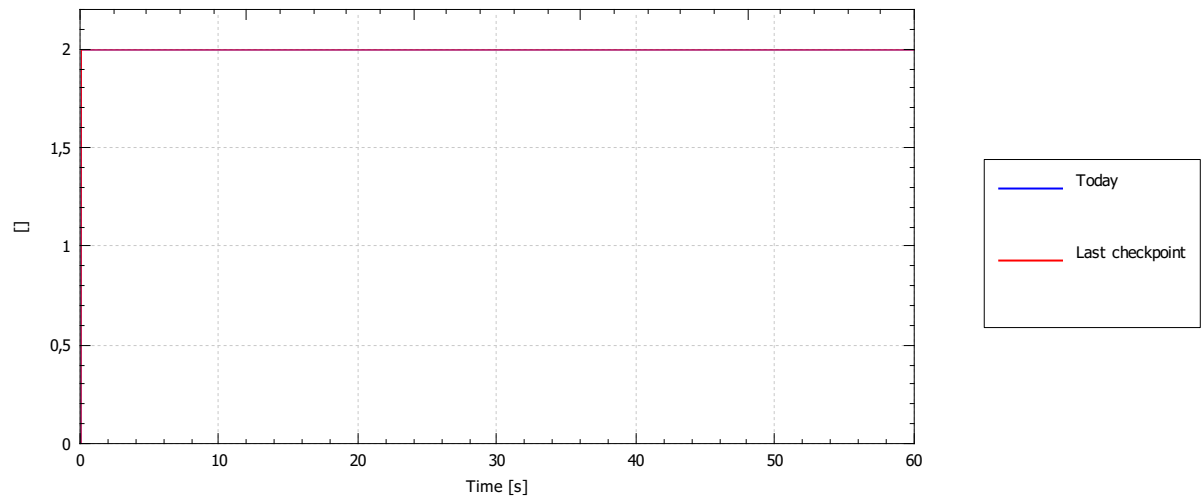
Filtered RPM



Electricity production

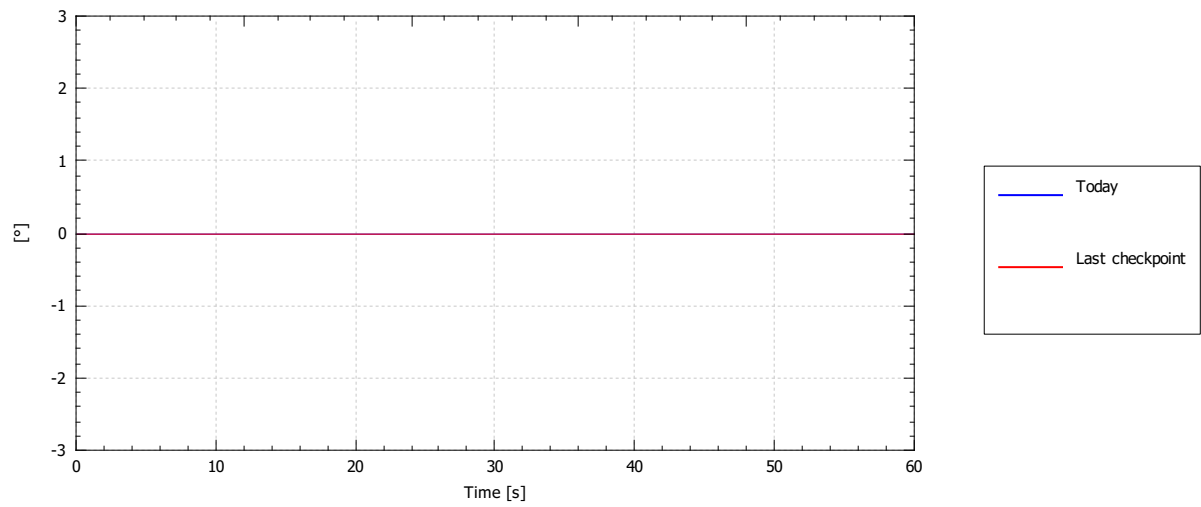


Region

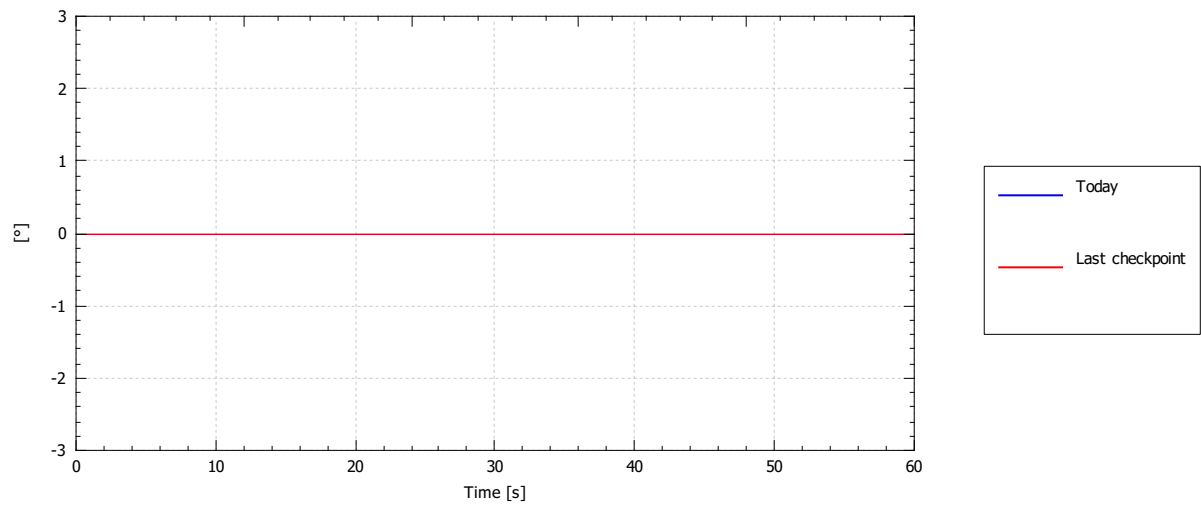


Demanded pitch controller

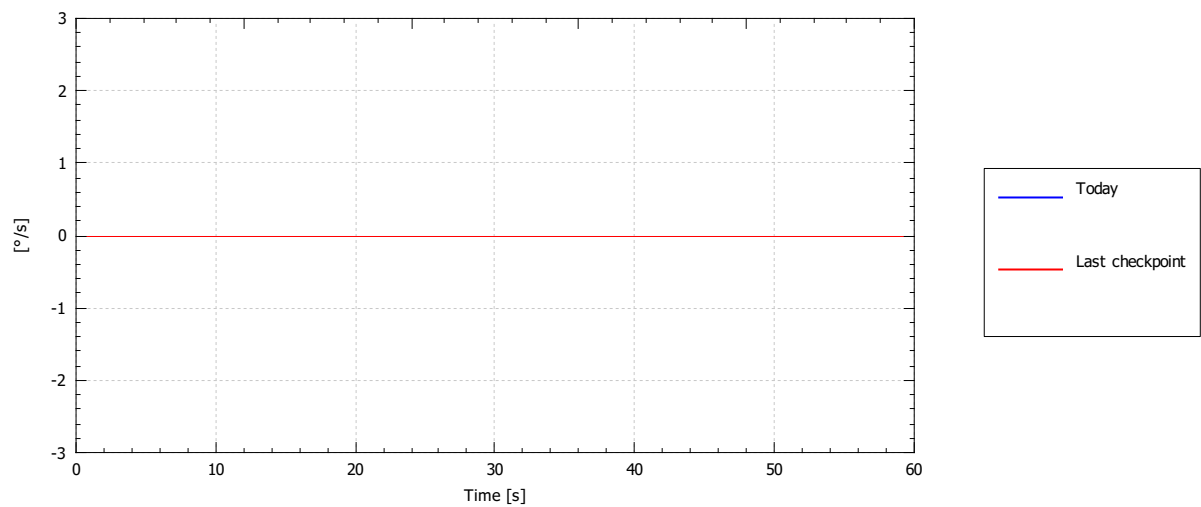
Demanded collective pitch angle



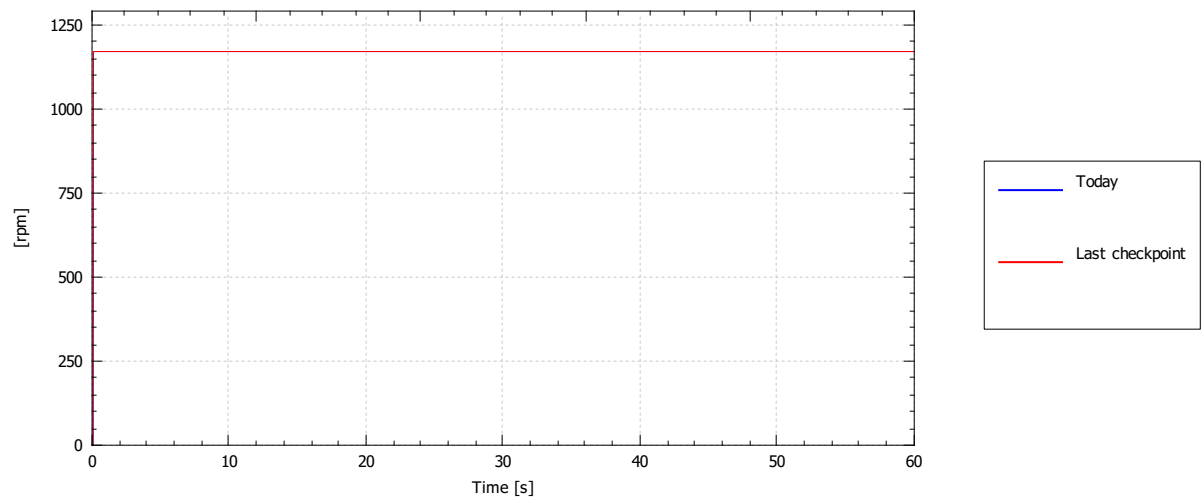
Cumulative demanded collective pitch angle



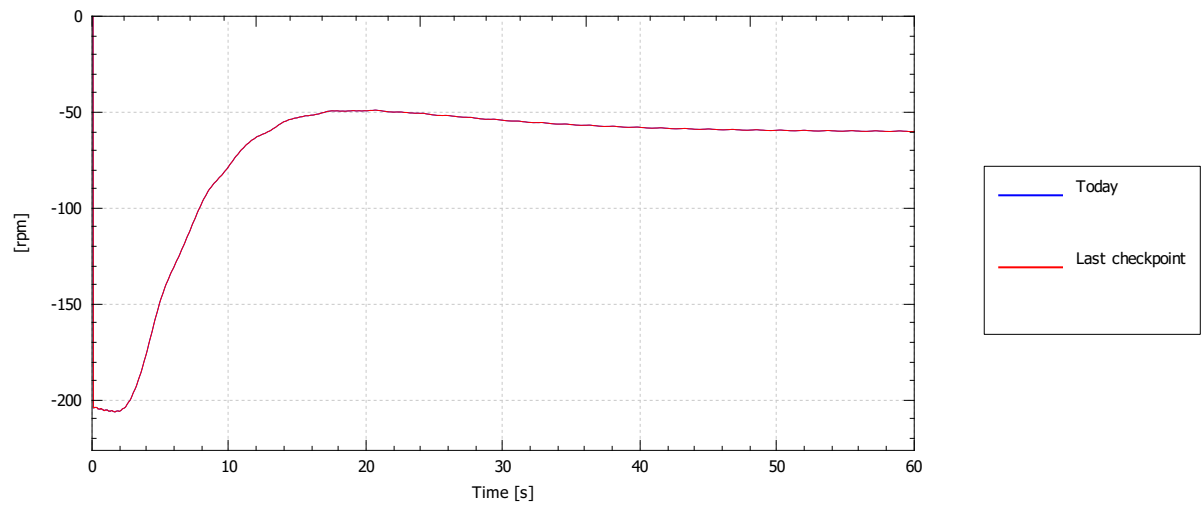
Demanded collective pitch angle rate



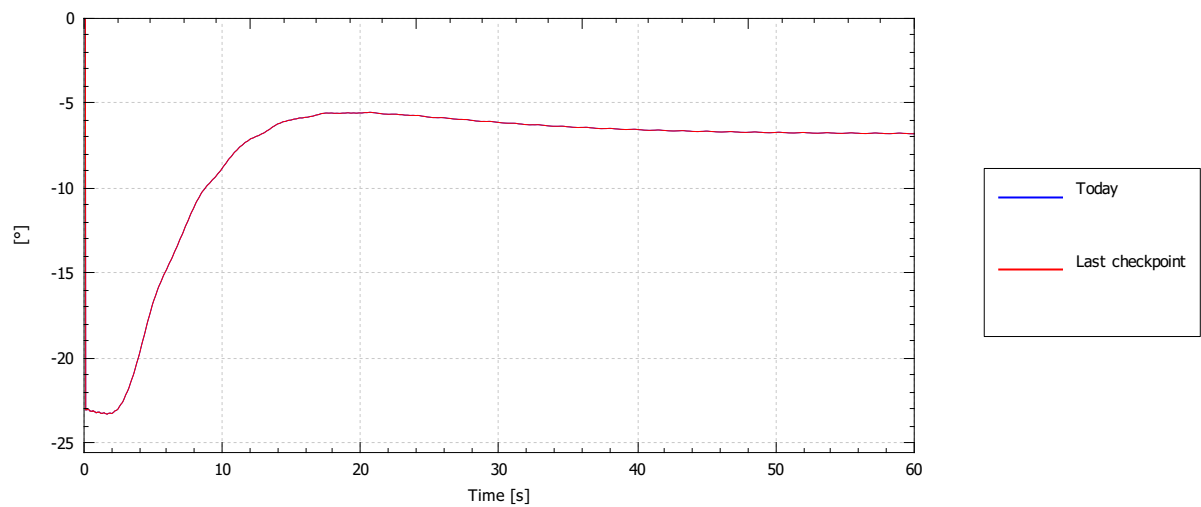
Set point



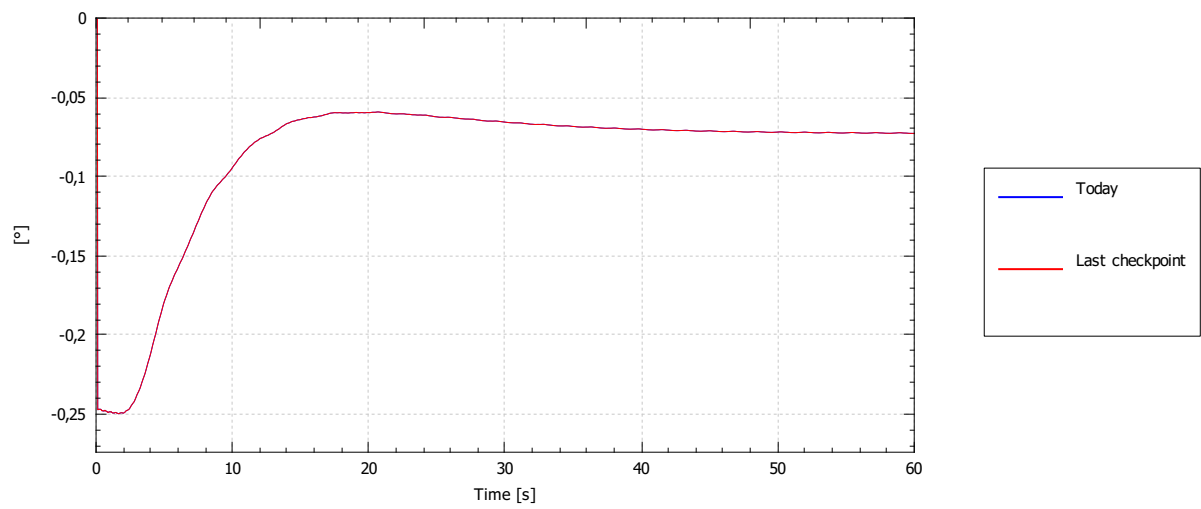
RPM error



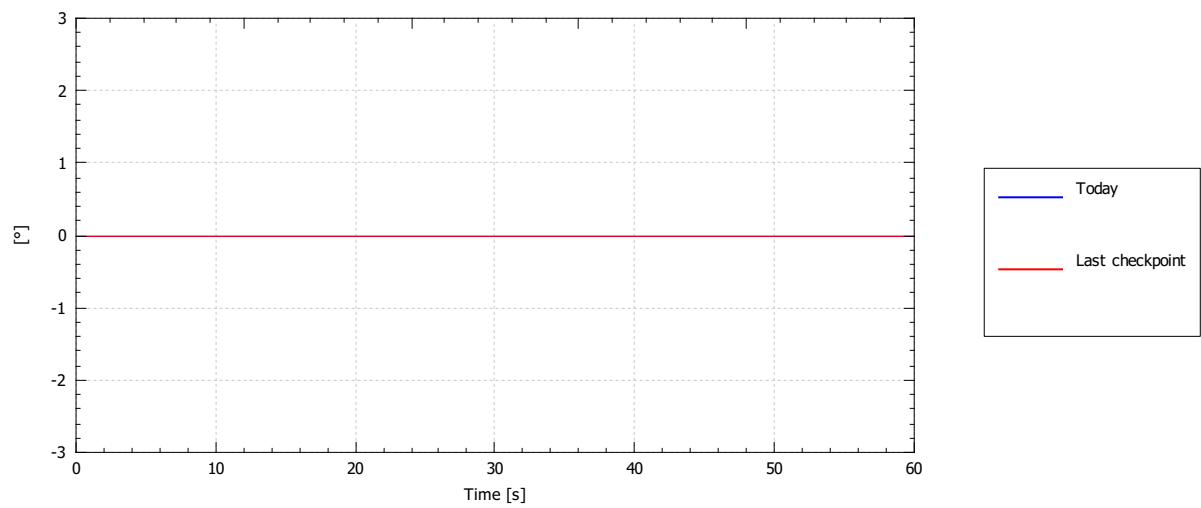
P term



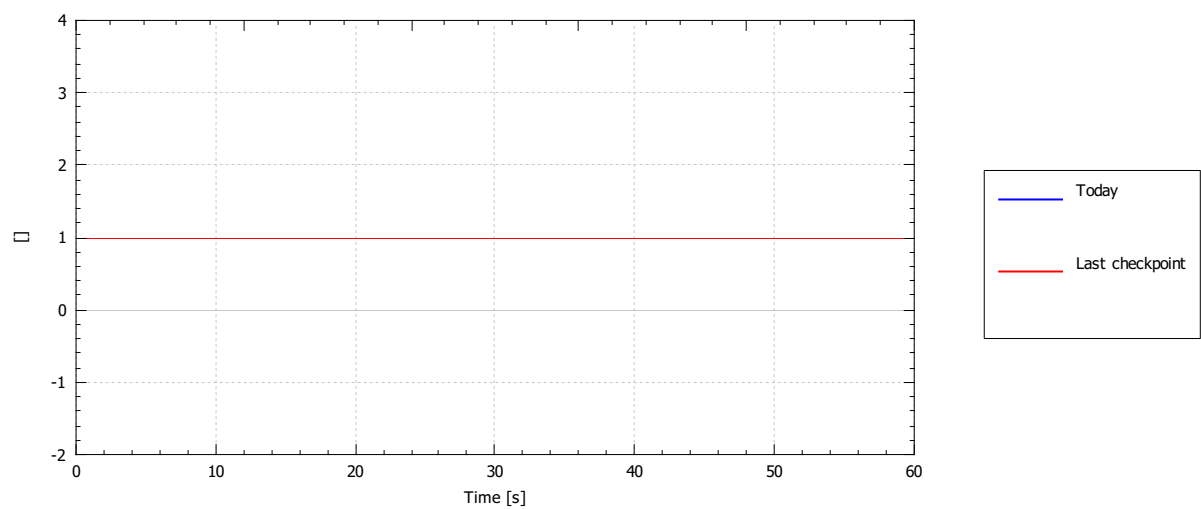
I term

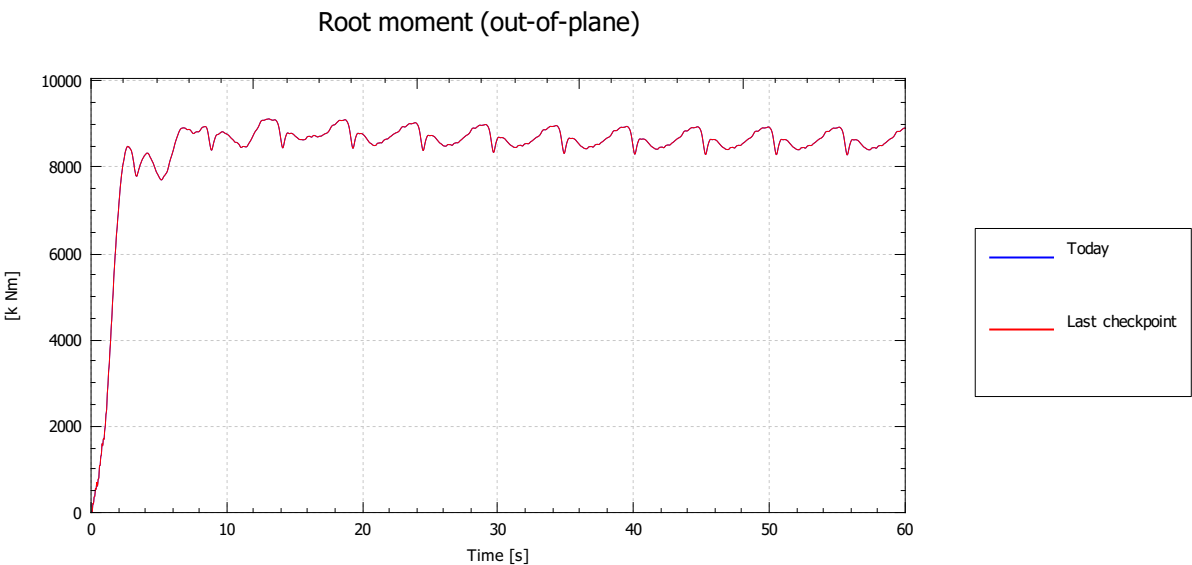
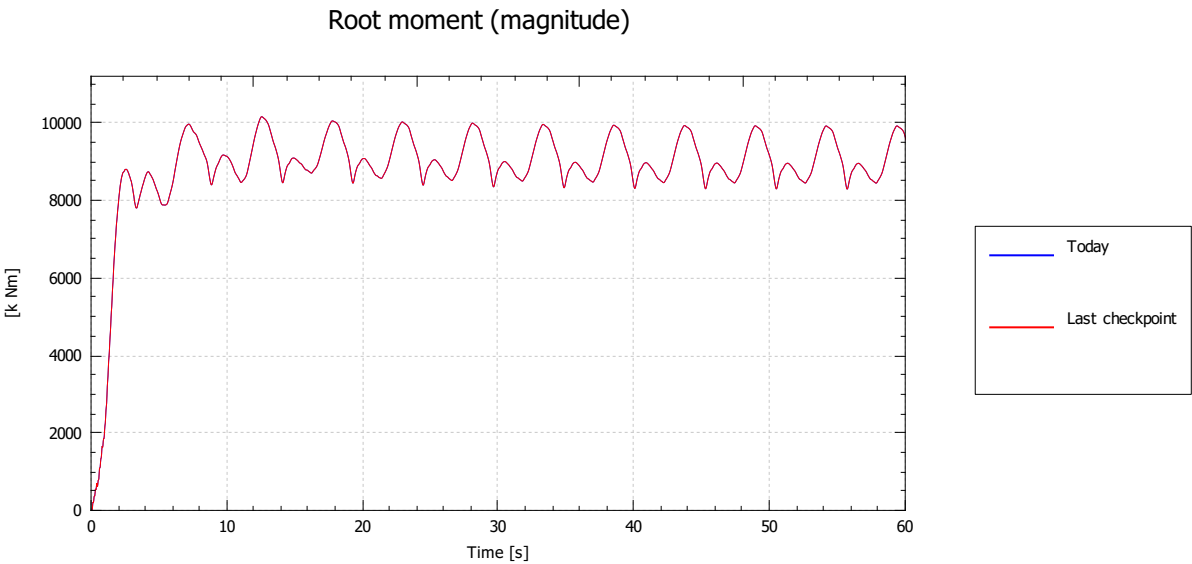
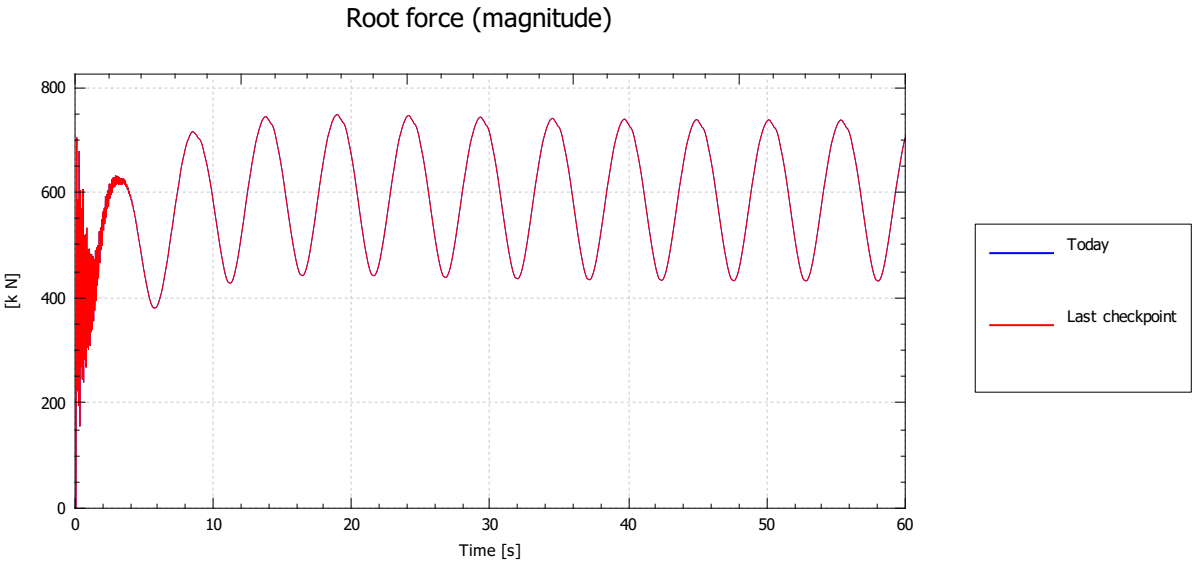


D term

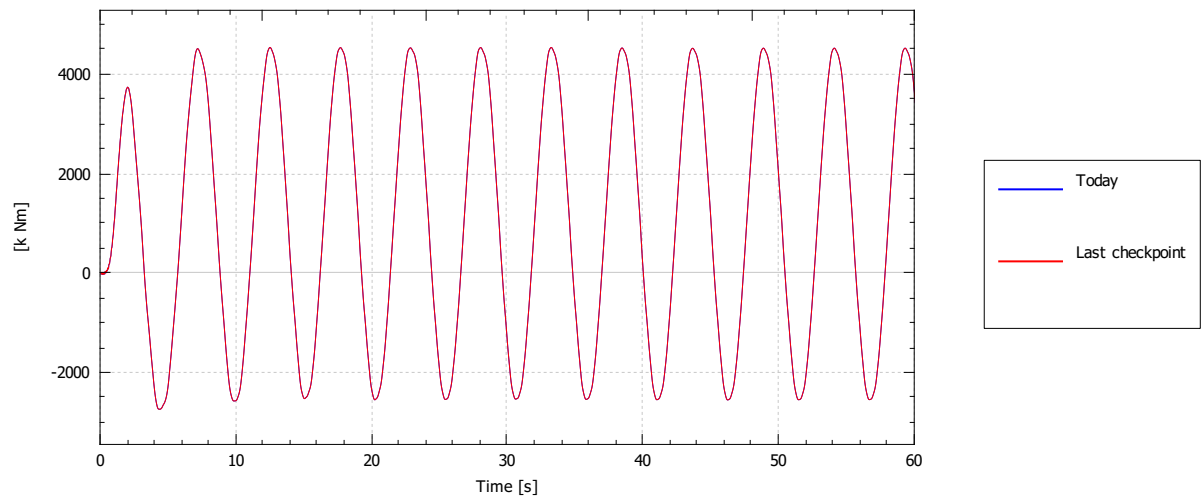


Gain scheduling factor

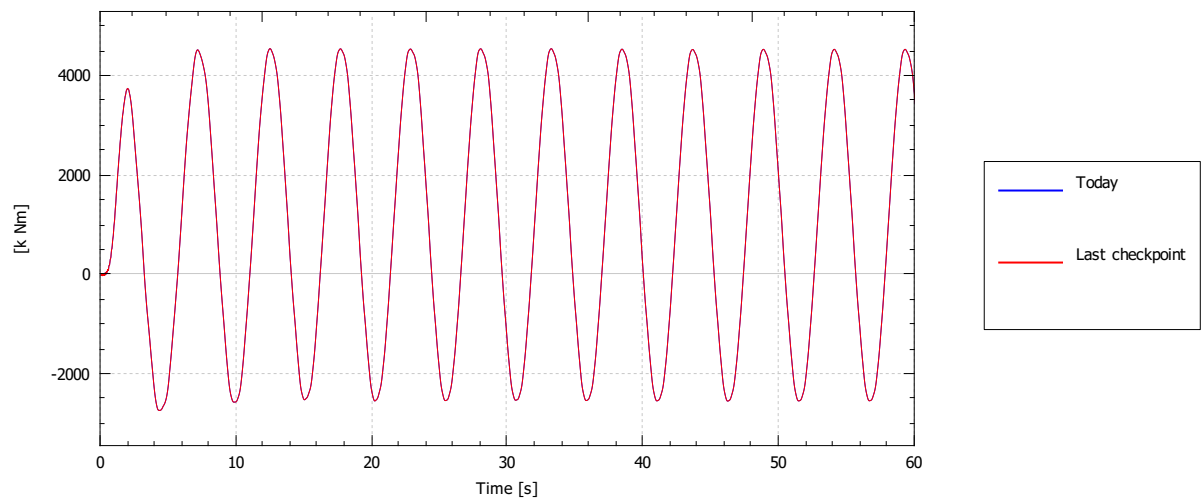




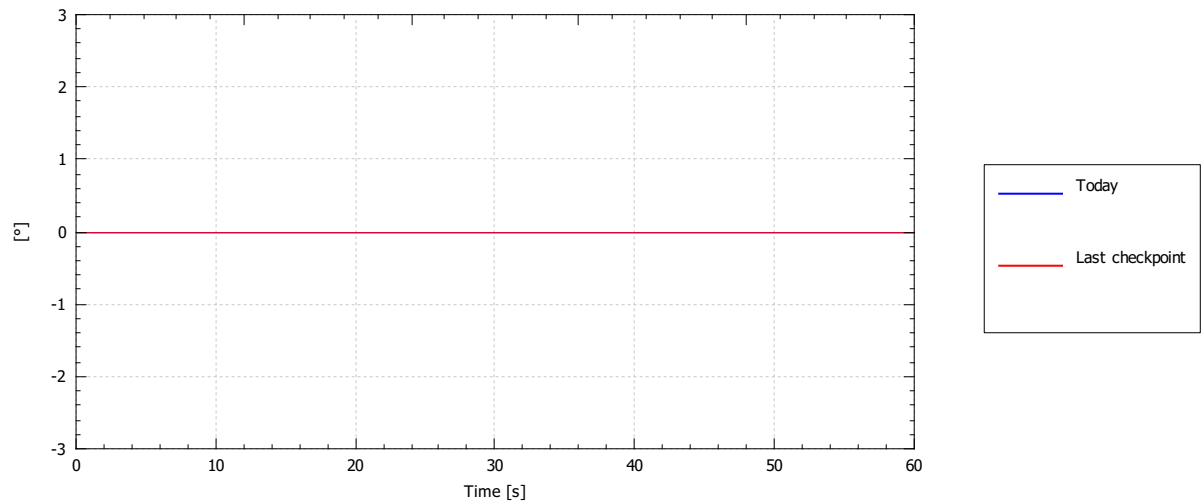
Root moment (in-plane)



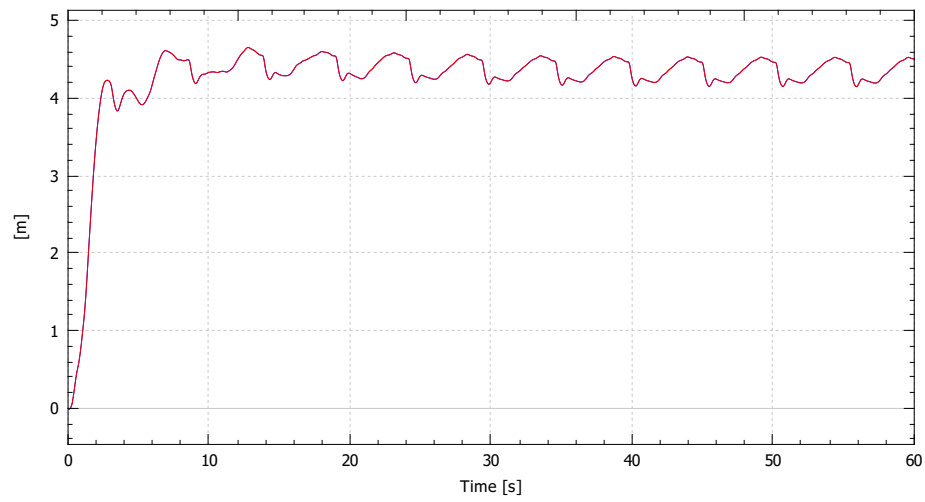
Root moment about shaft



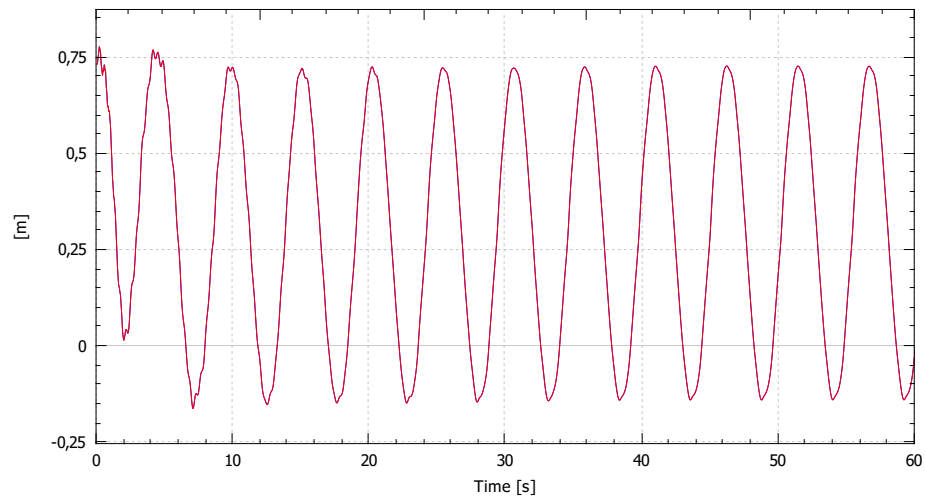
Pitch angle



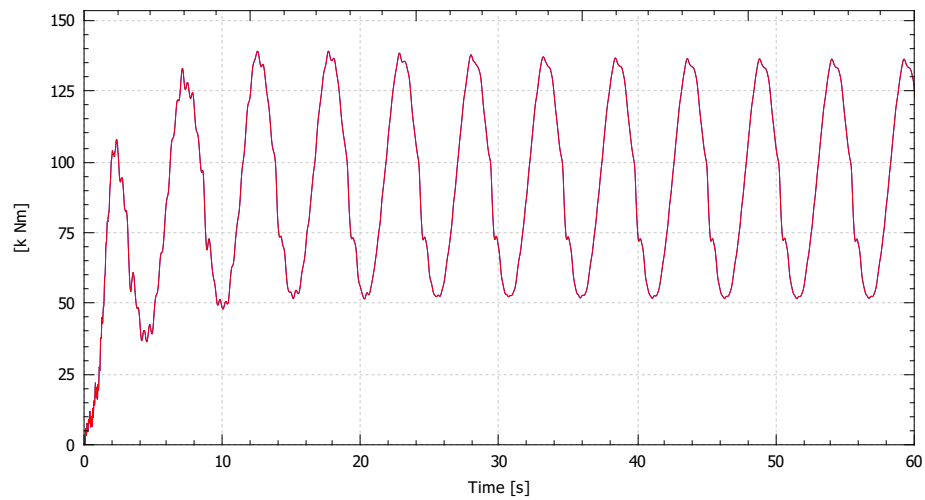
Tip deflection (out-of-plane)

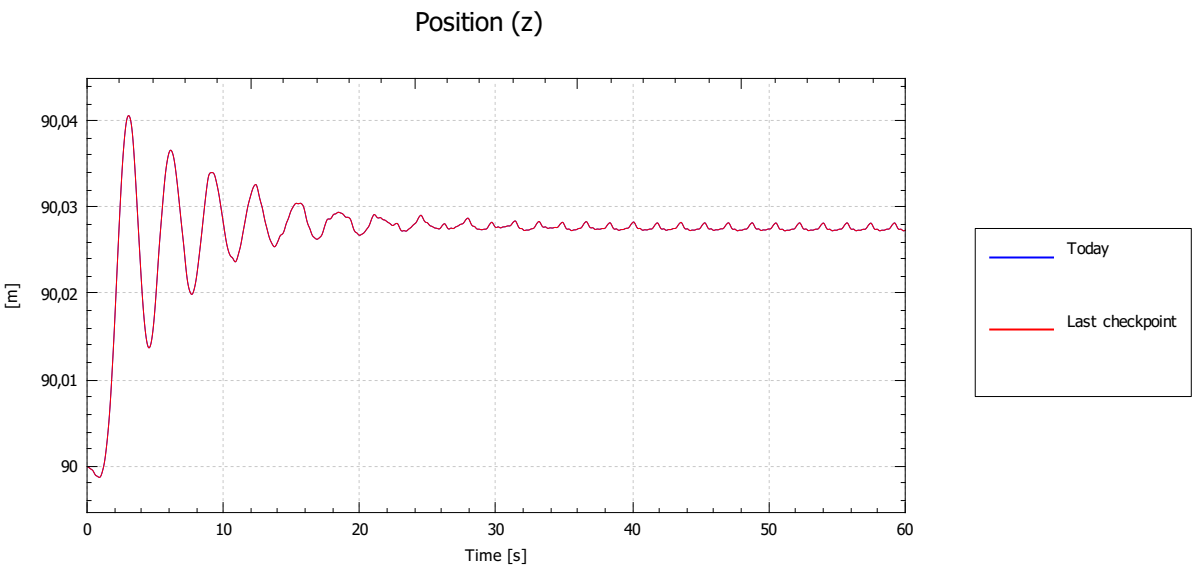
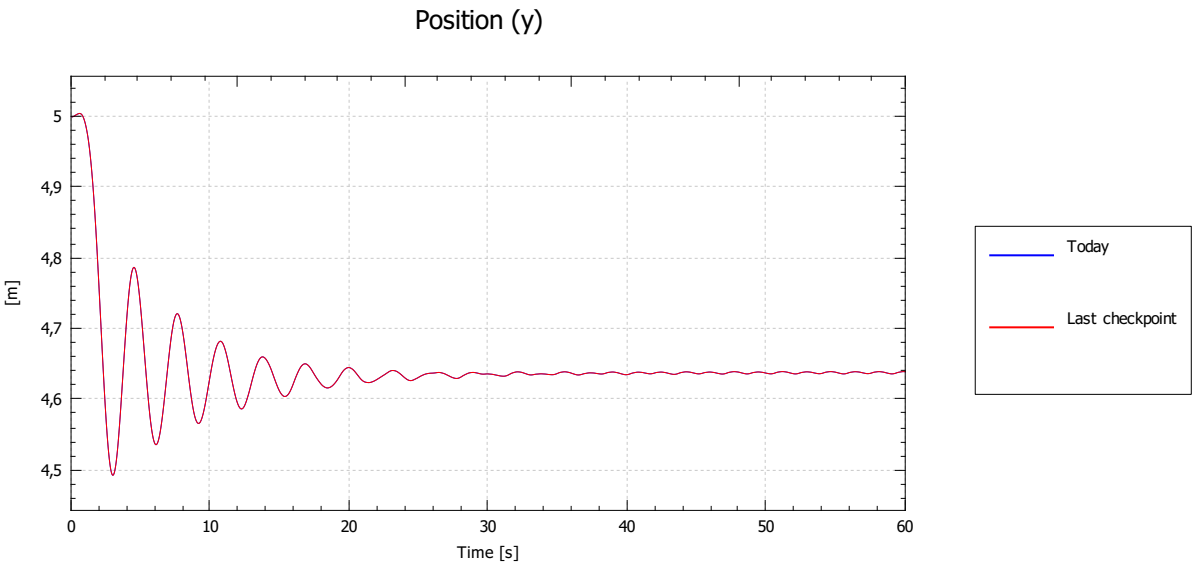
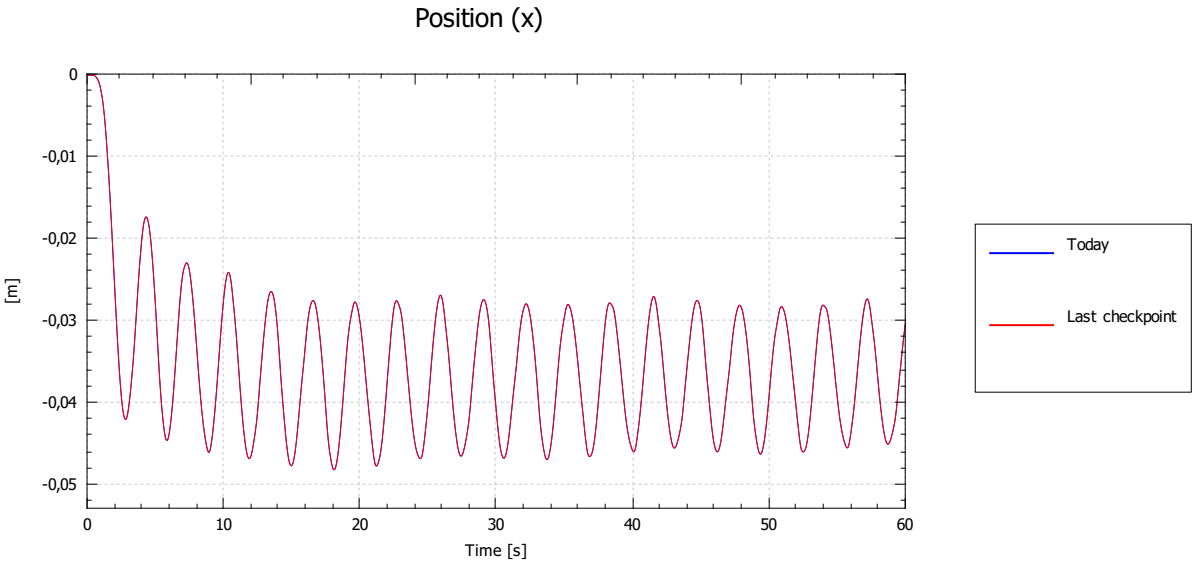


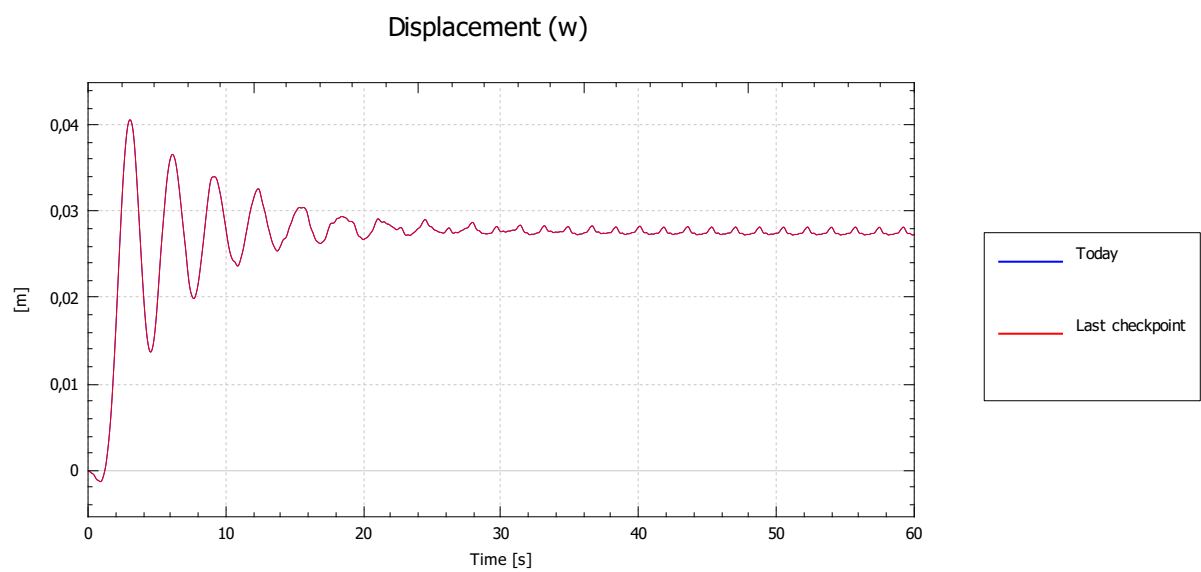
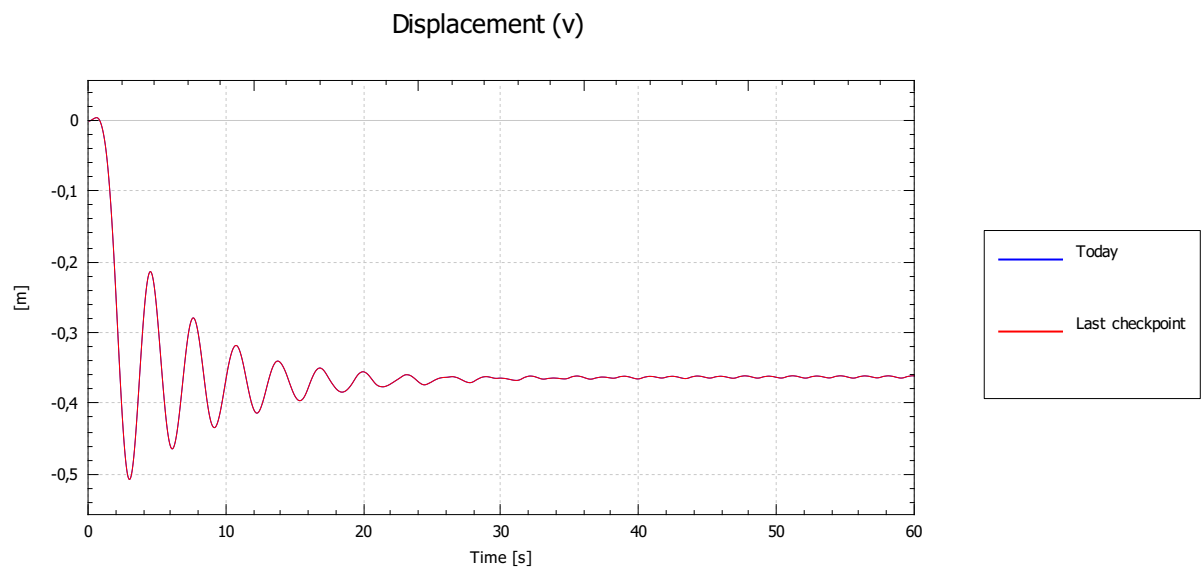
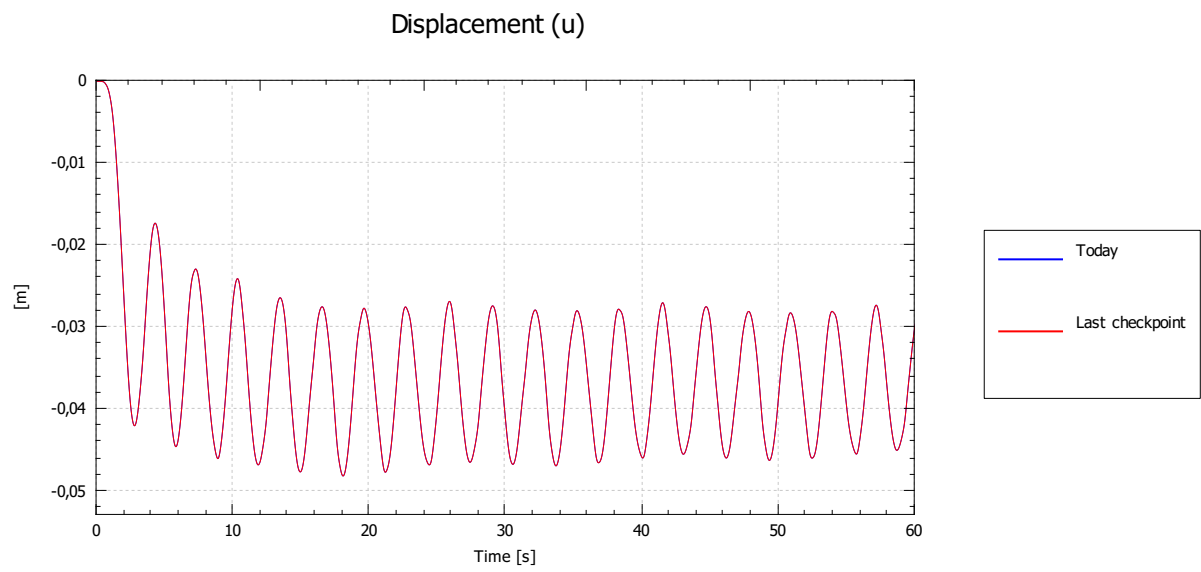
Tip deflection (in-plane)



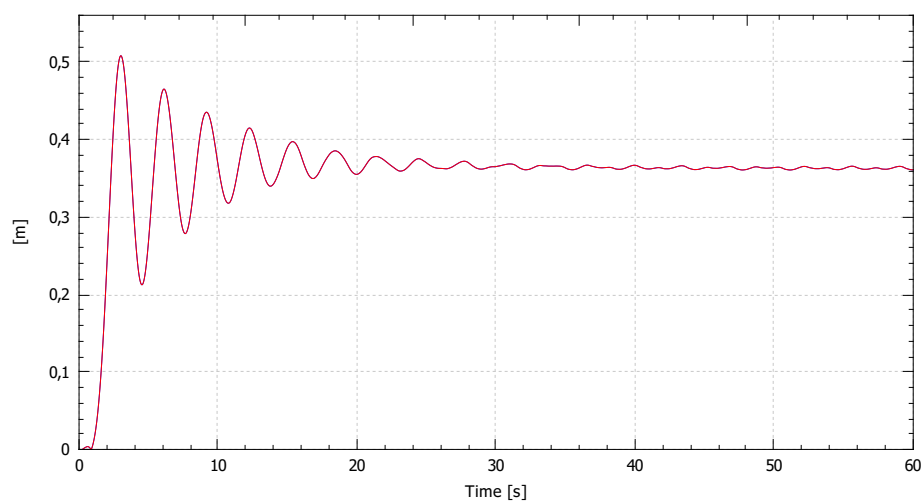
Root torque



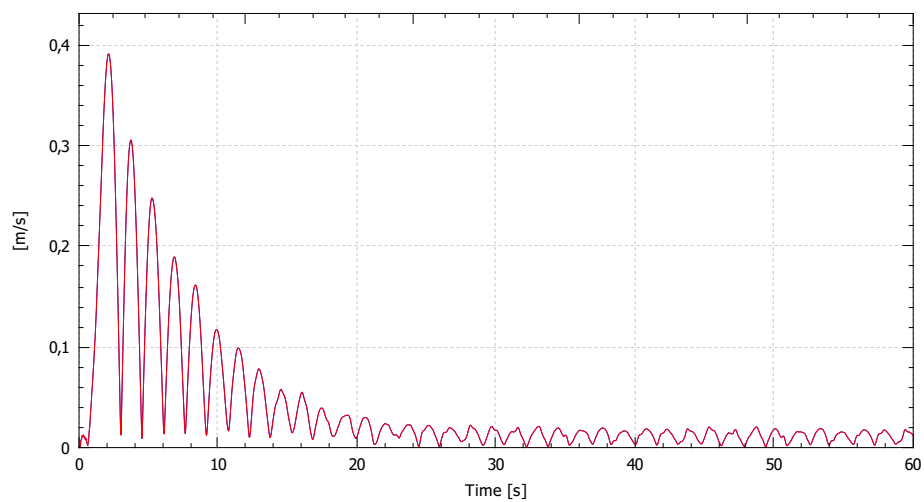




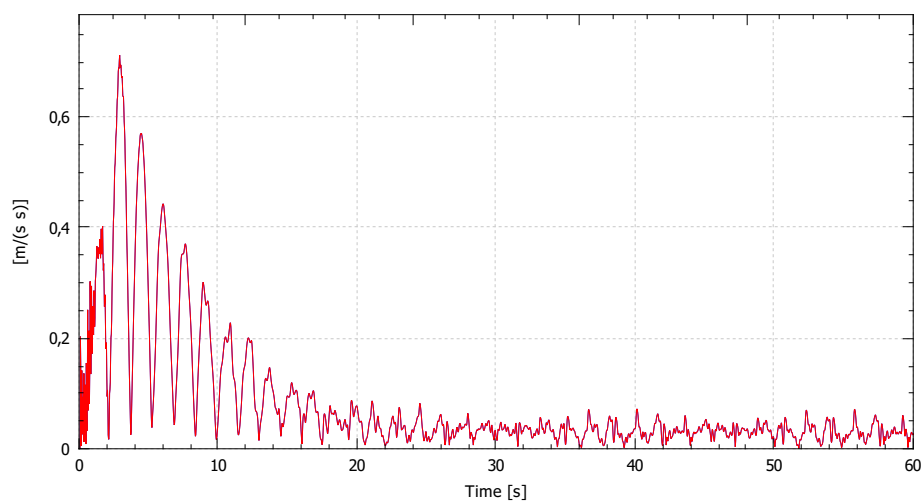
Displacement magnitude



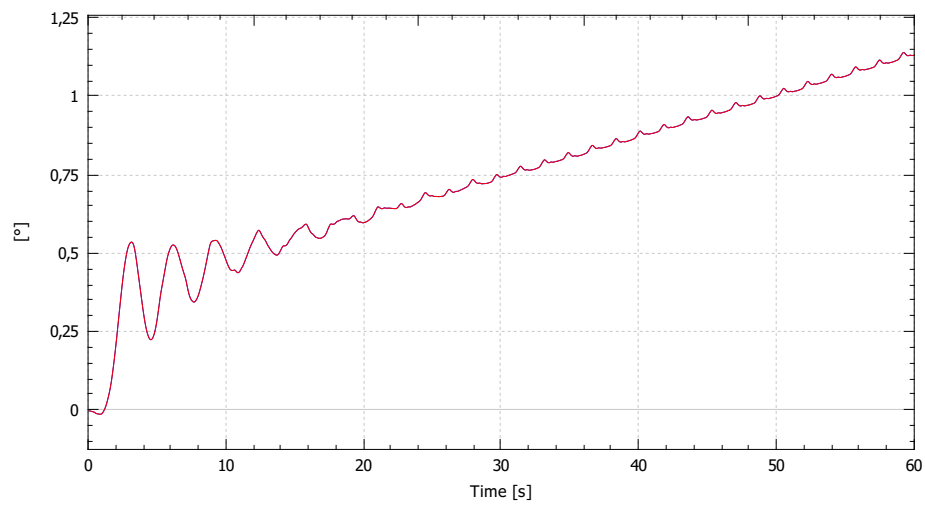
Speed



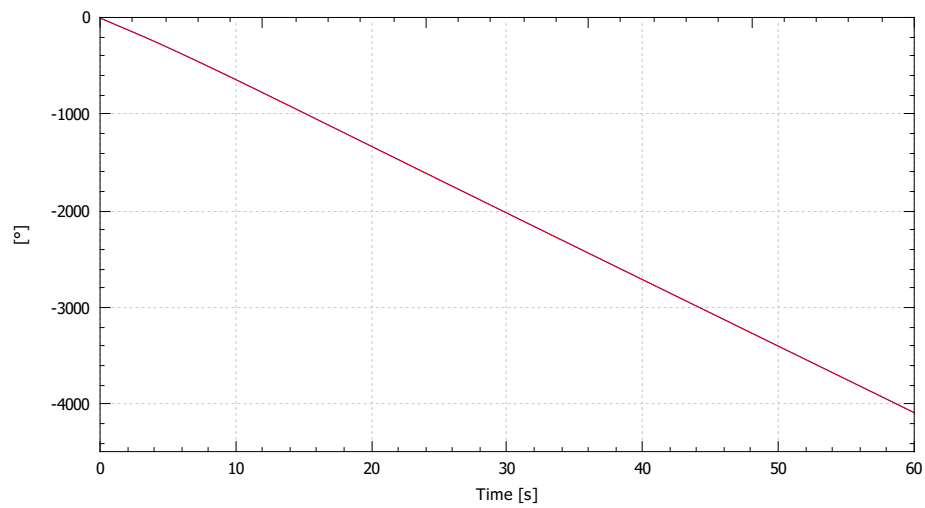
Acceleration, magnitude



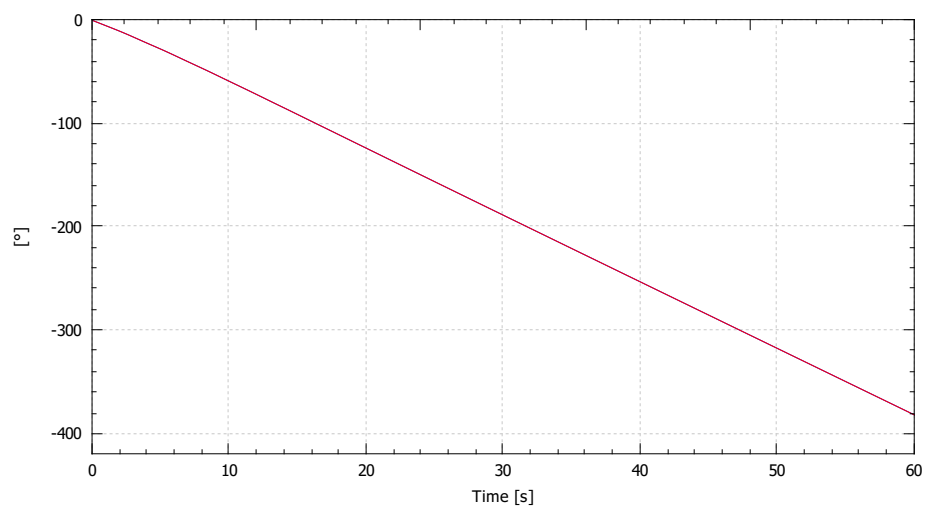
Rotational displacement (ru)



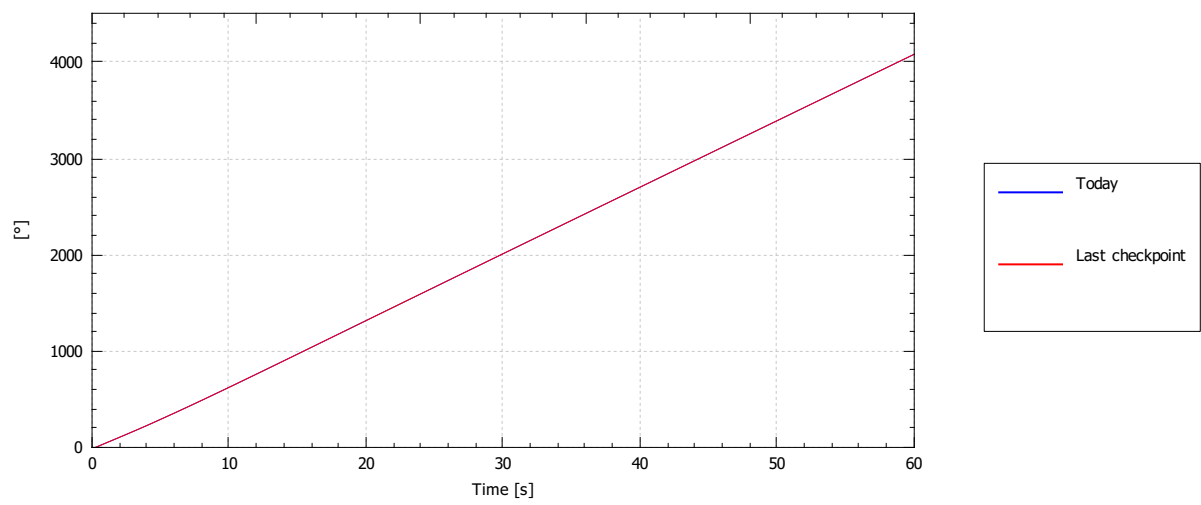
Rotational displacement (rv)



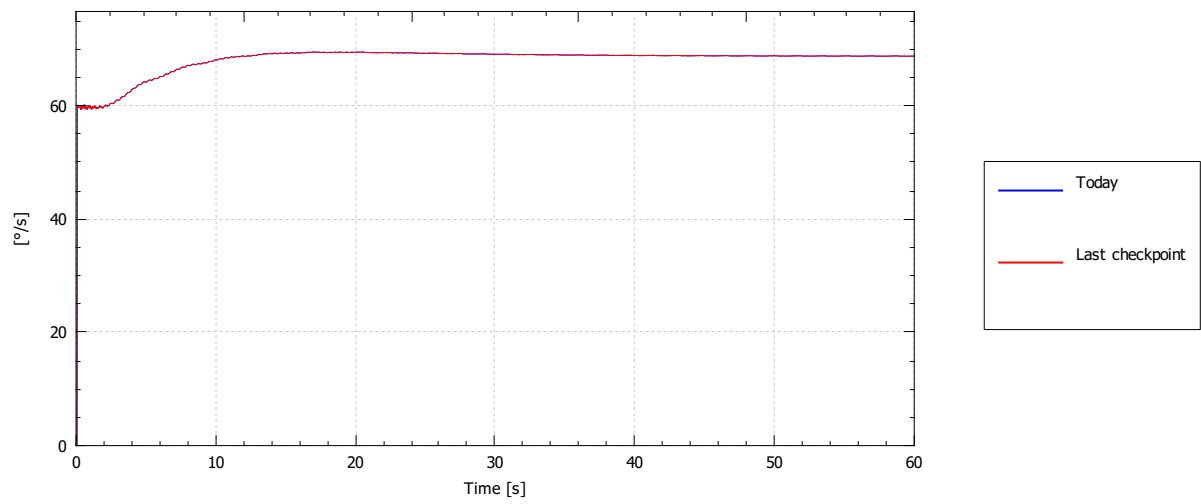
Rotational displacement (rw)



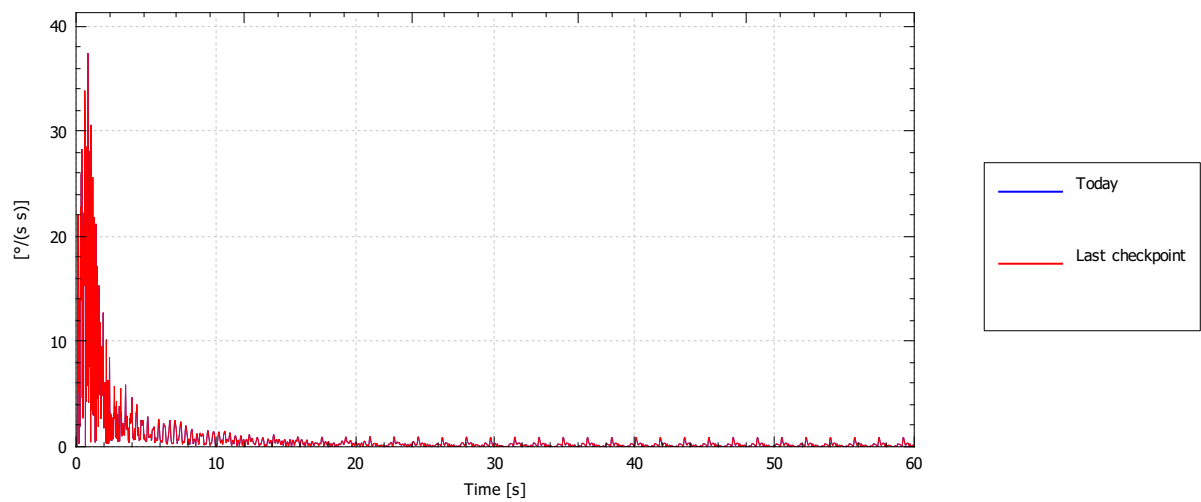
Rotational displacement magnitude



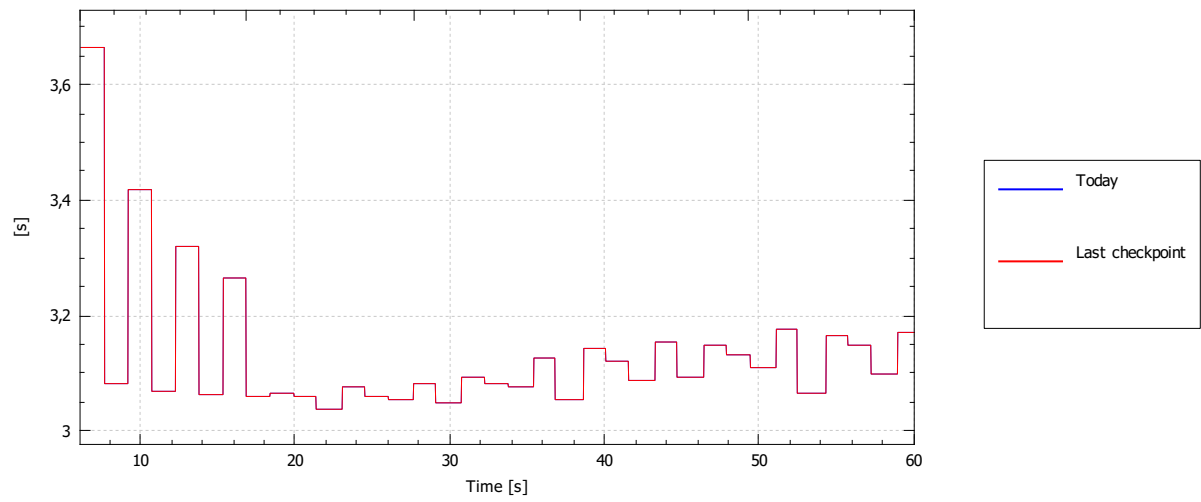
Rotational speed



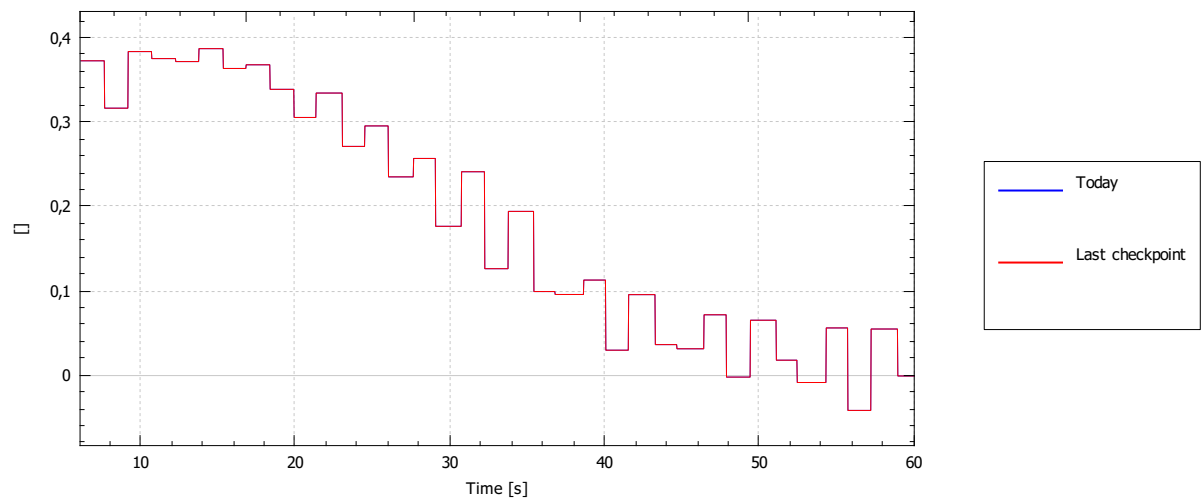
Rotational acceleration mag



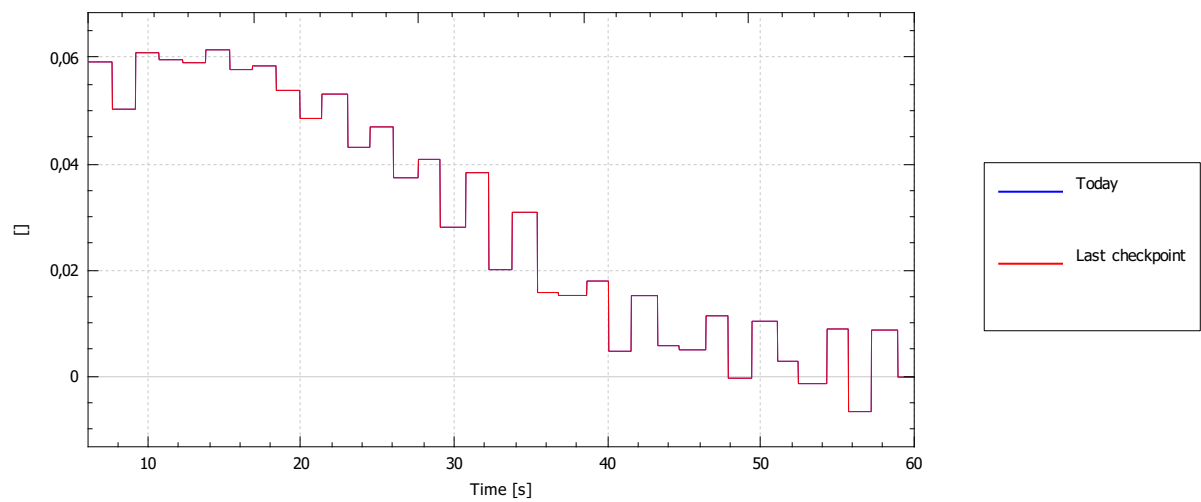
Displacement period



Displacement logarithmic decrement

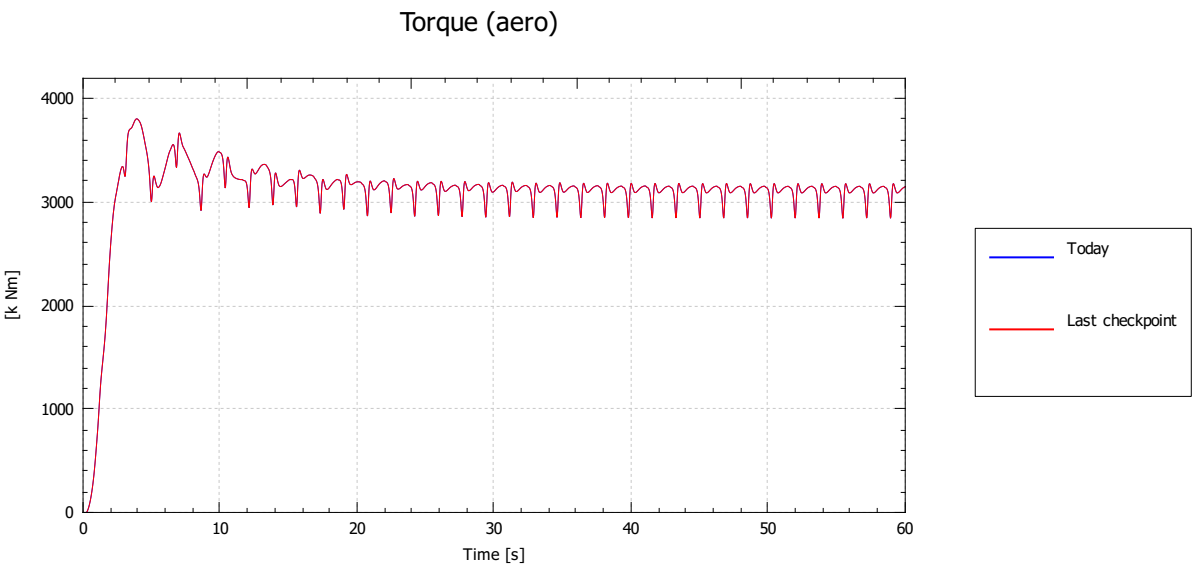
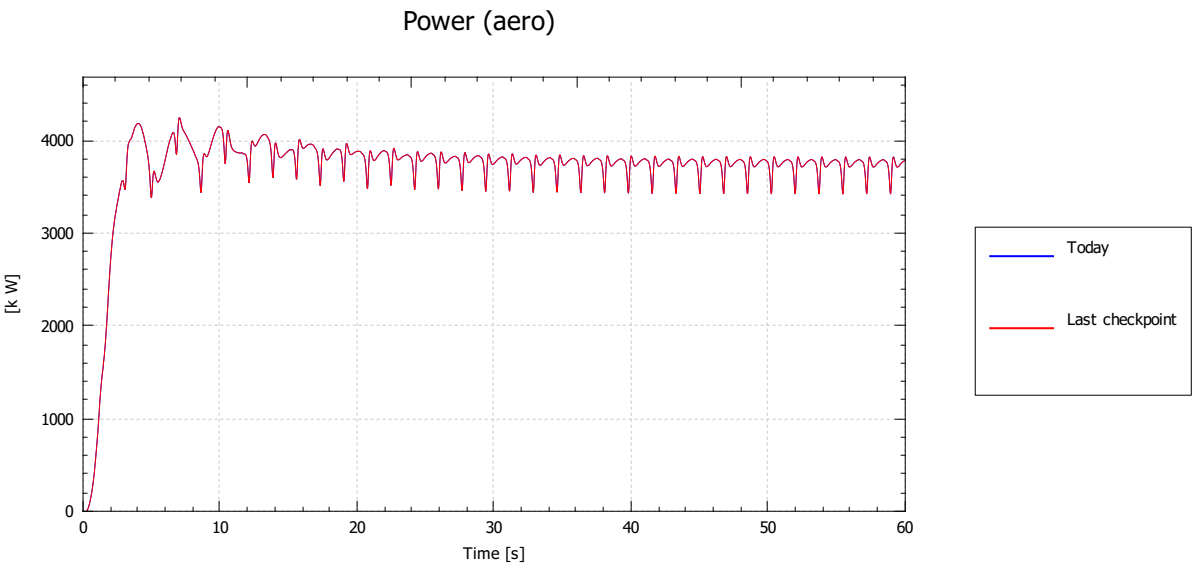


Displacement damping ratio

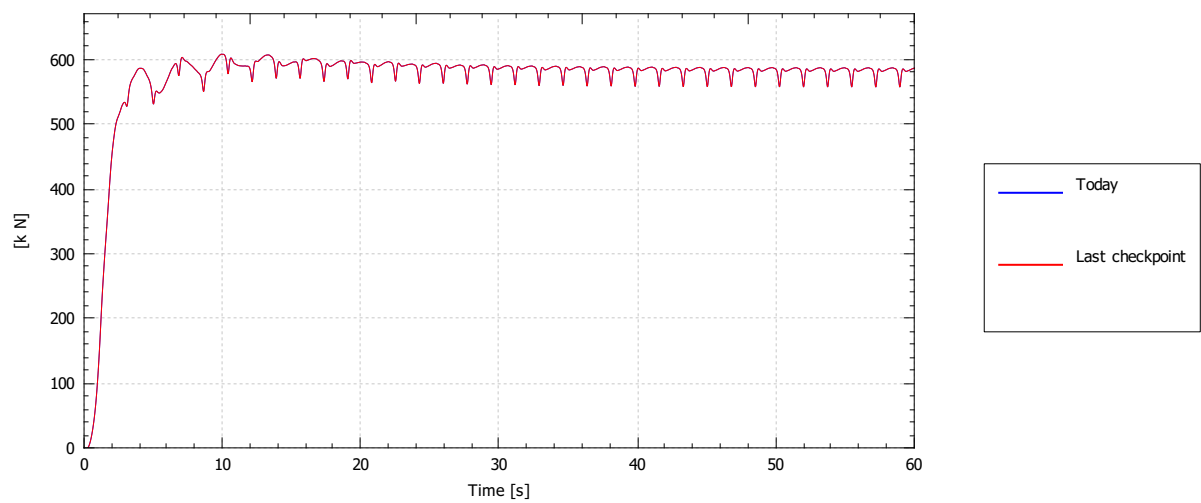


Load case: Pitch actuator mode

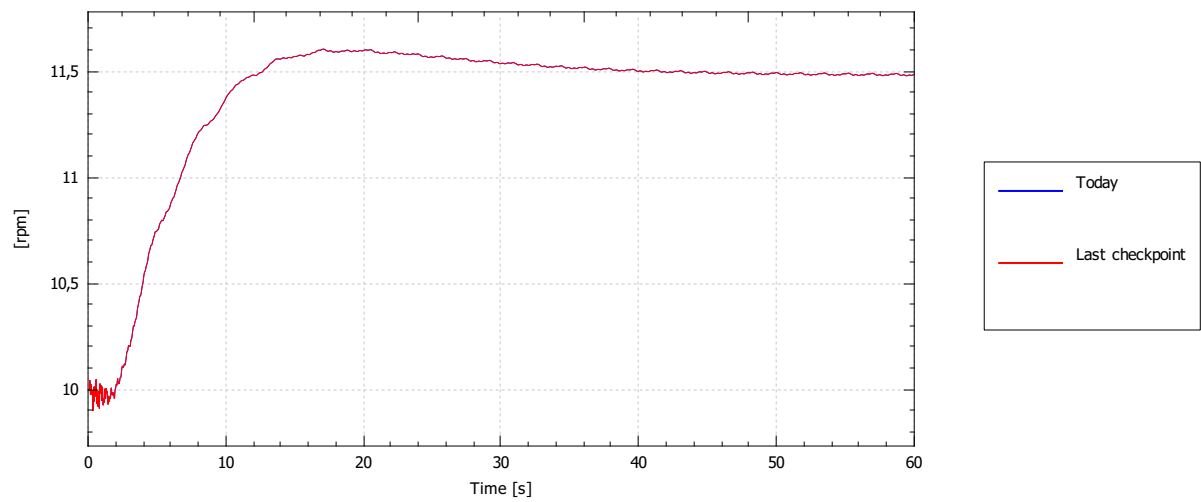
Rotor



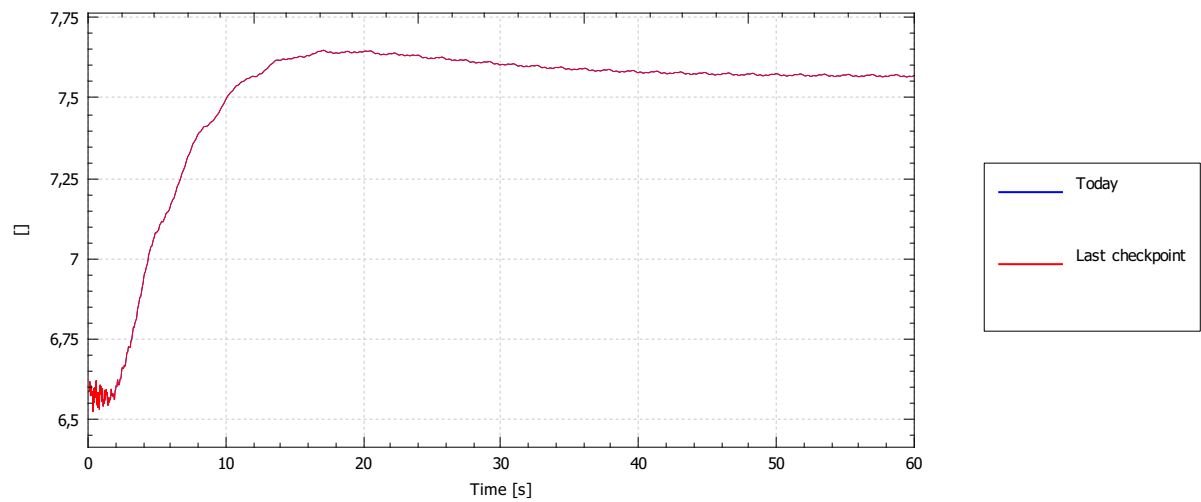
Thrust (aero)



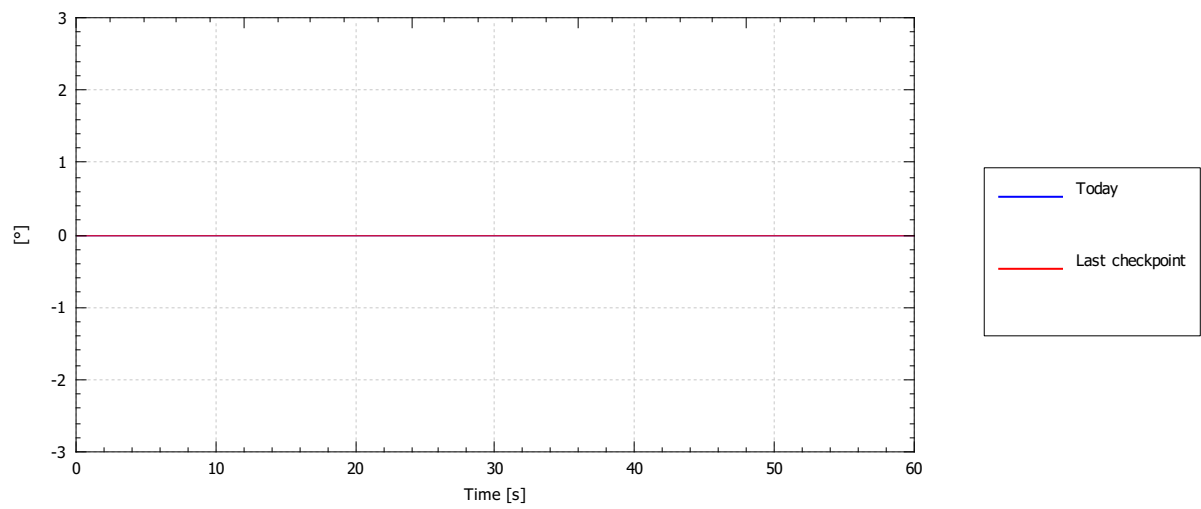
RPM



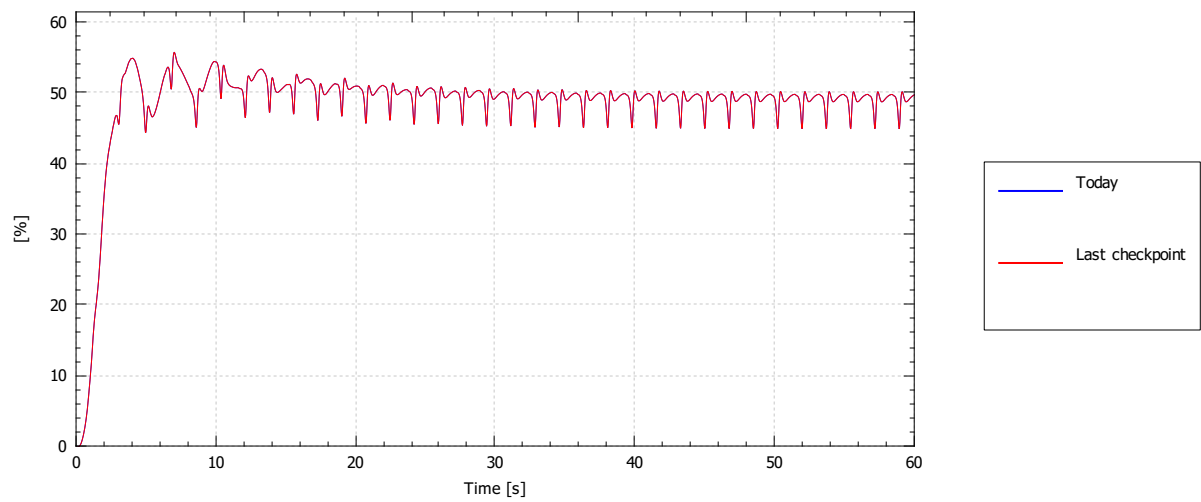
TSR



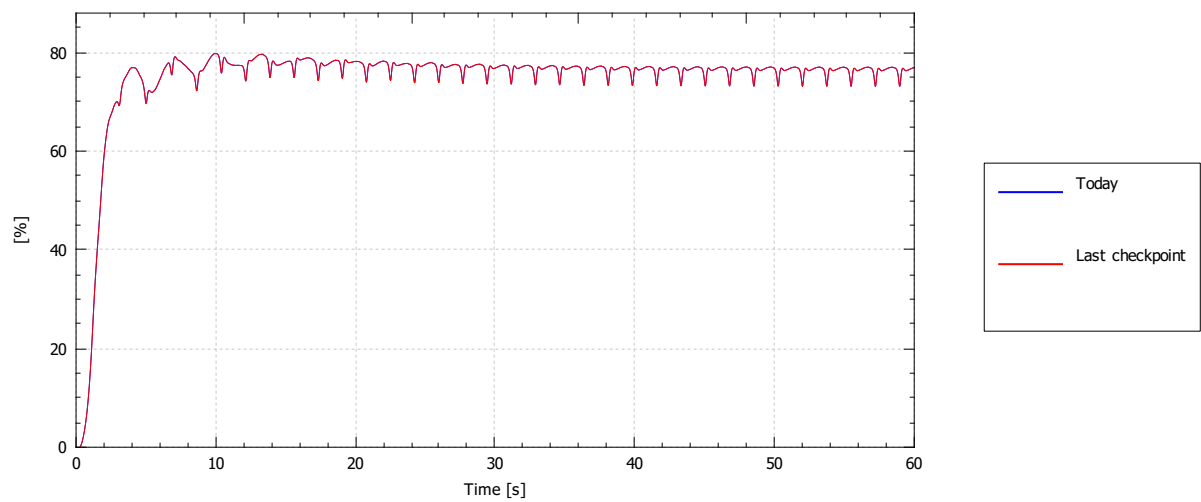
Representative demanded pitch angle



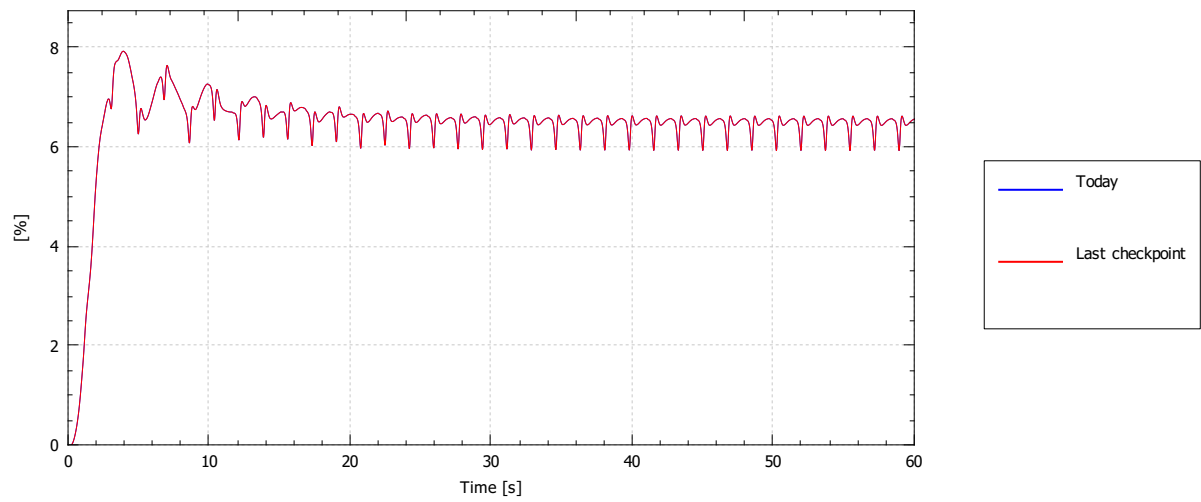
Power coef. (CP)



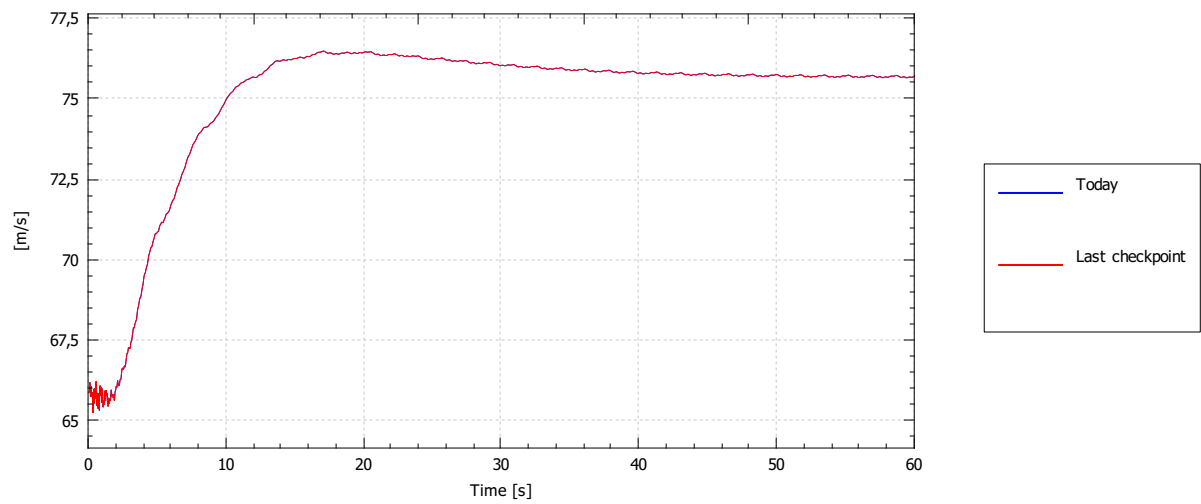
Thrust coef. (CT)



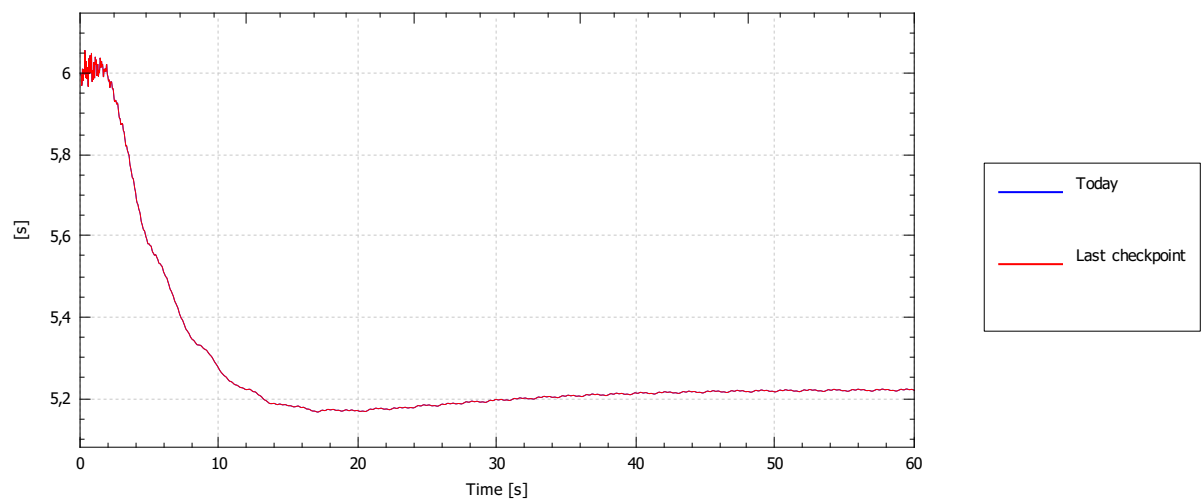
Torque coef. (CQ)



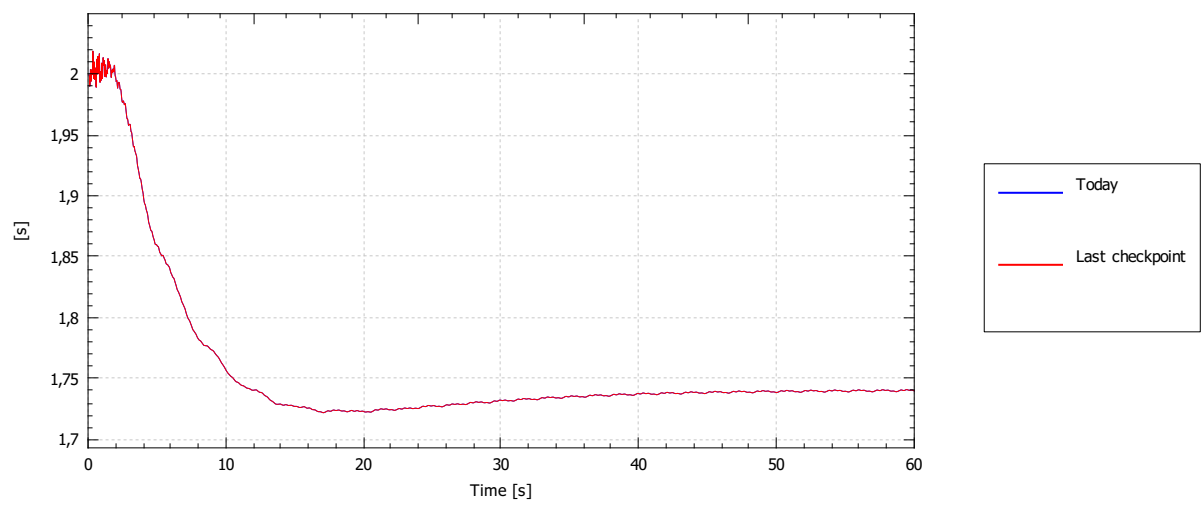
Tip speed



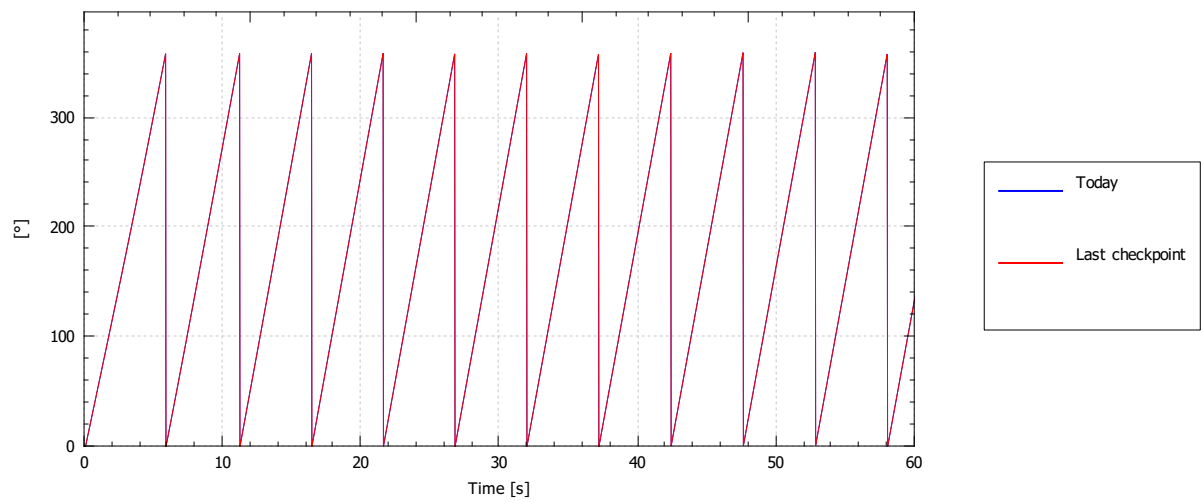
1P (one revolution)



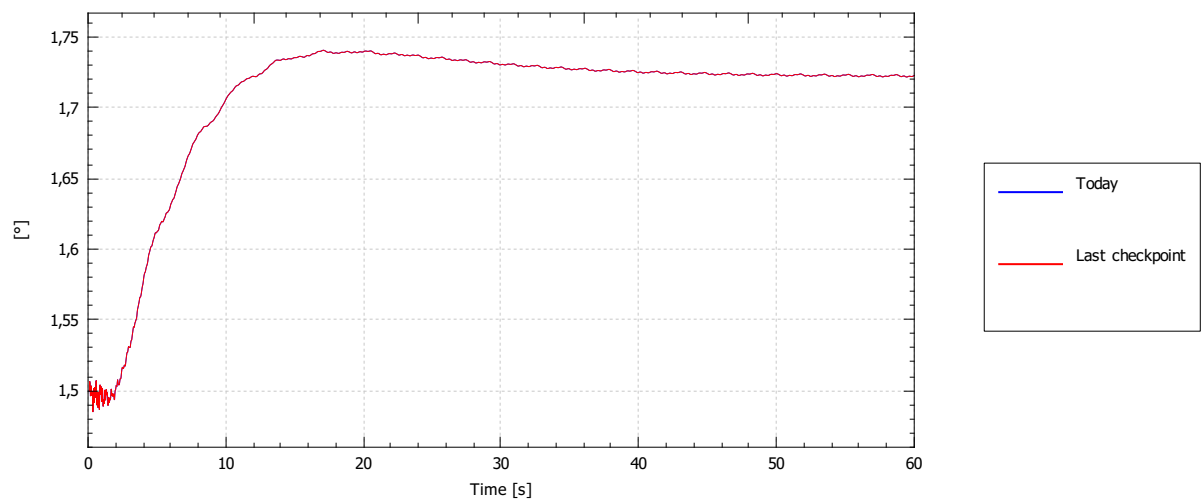
nP (blade passing)



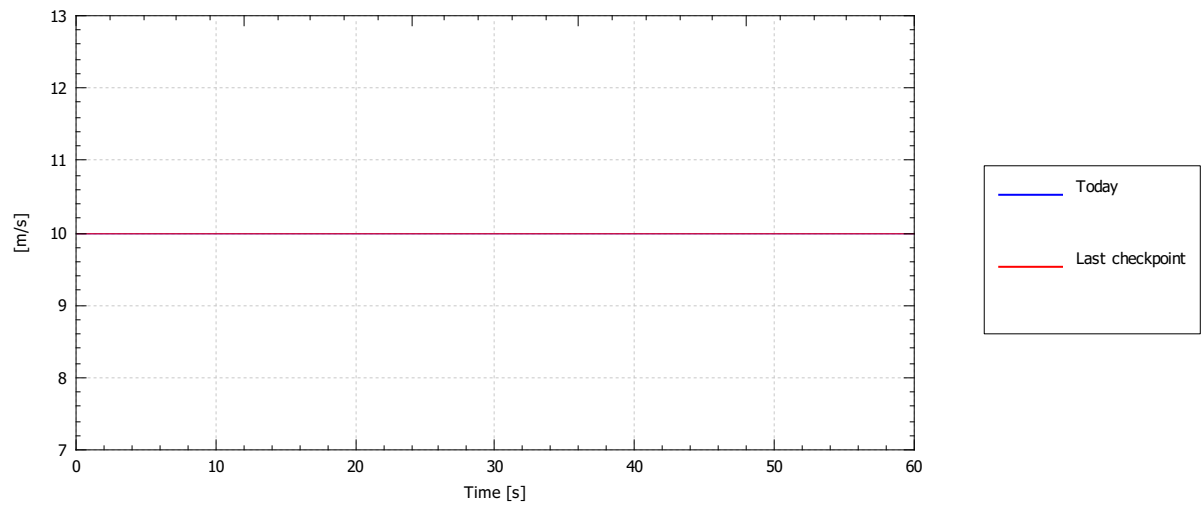
Azimuth angle



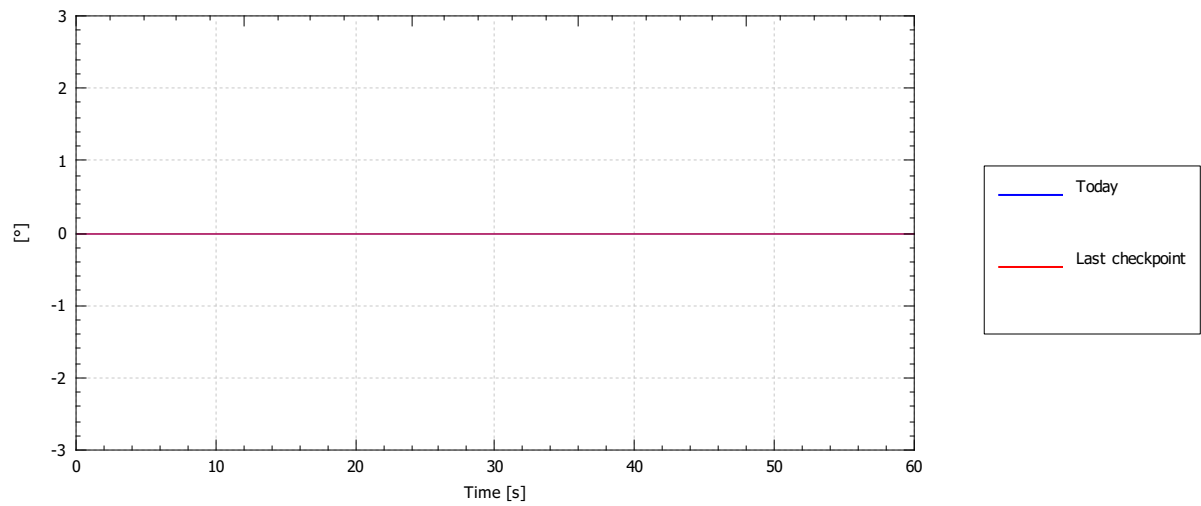
Rotation per timestep



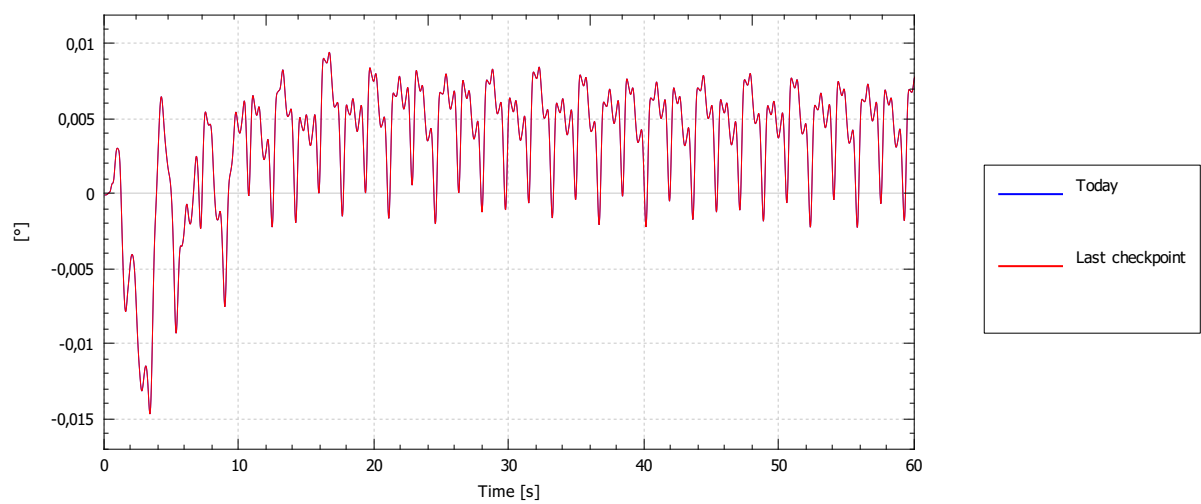
Wind speed at hub, magnitude



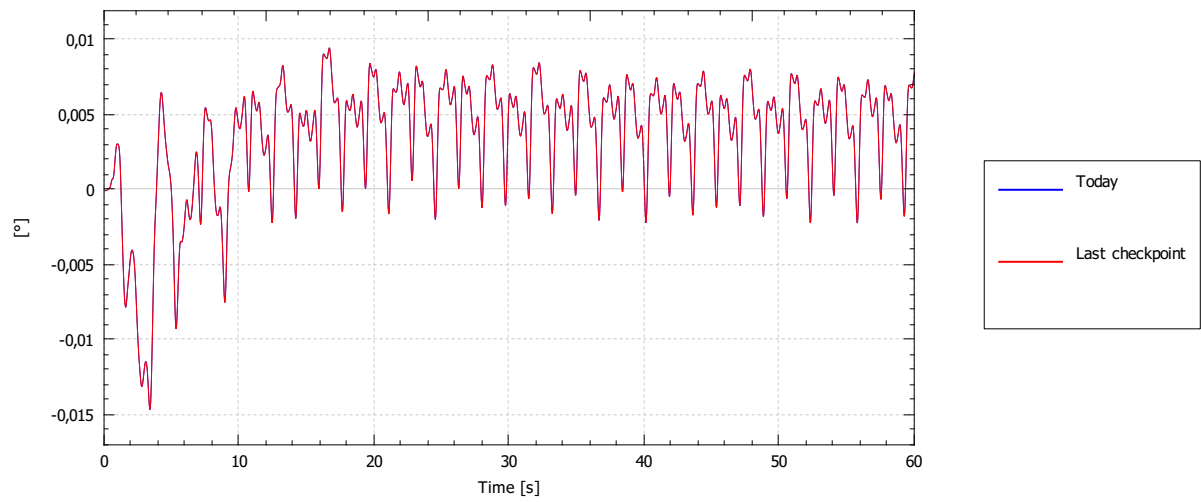
Wind angle at hub



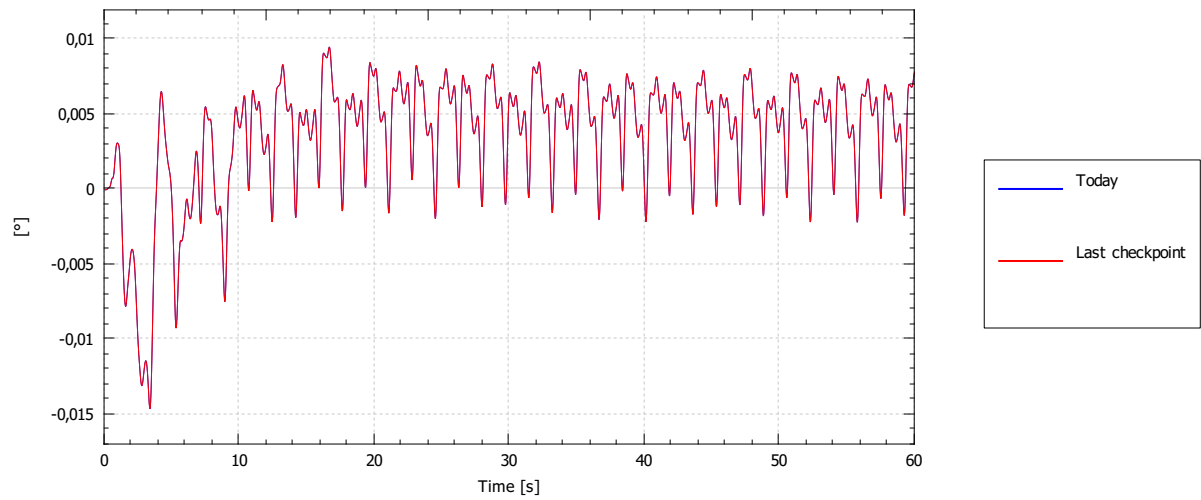
Yaw angle relative to forward



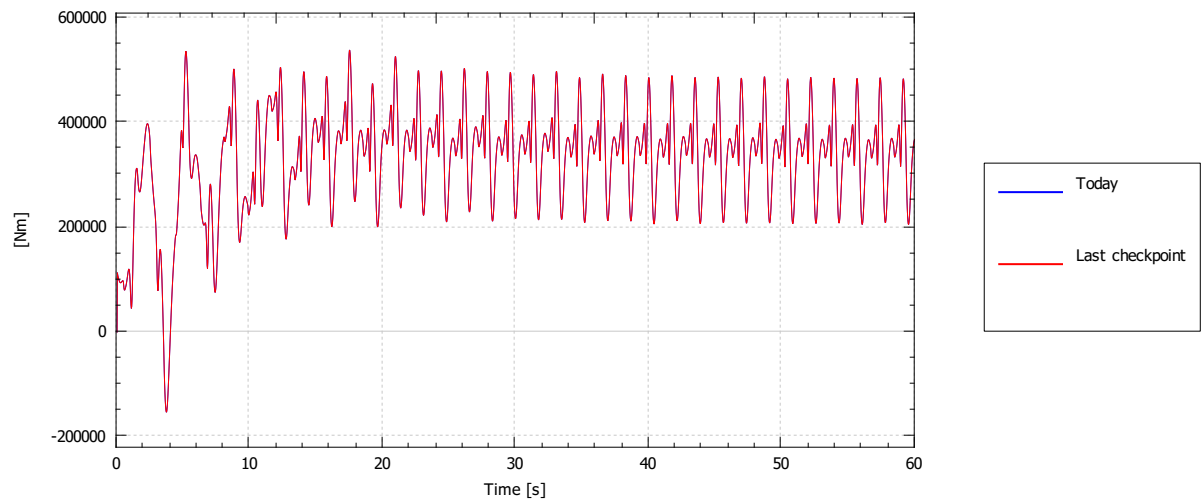
Yaw angle to reference direction



Yaw error

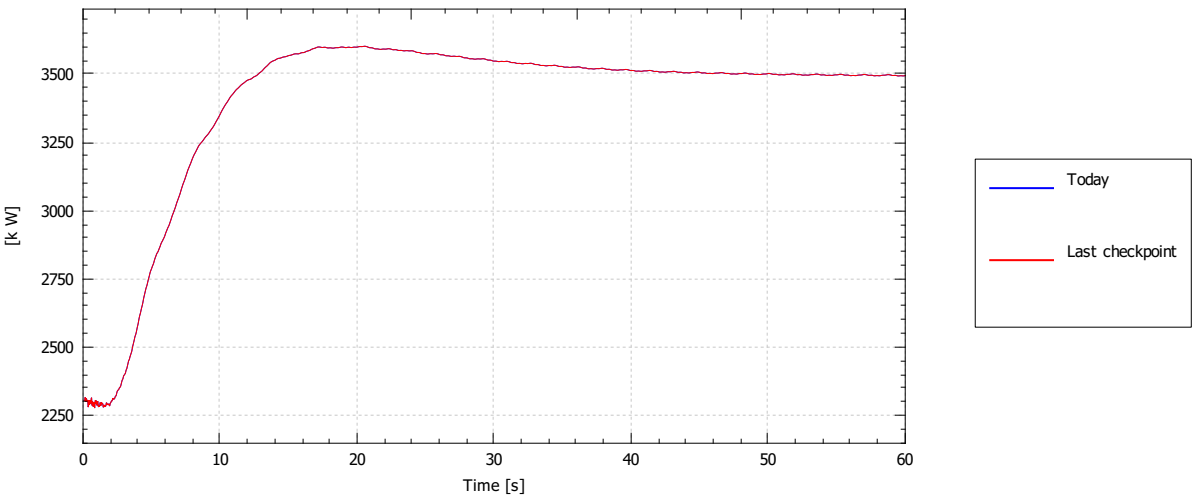


Torque about yaw axis

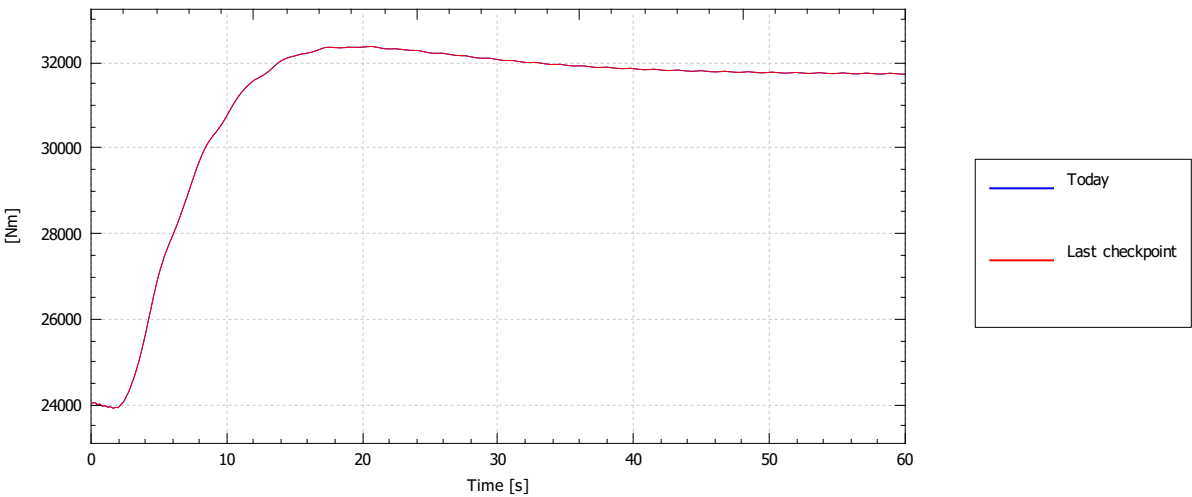


Generator

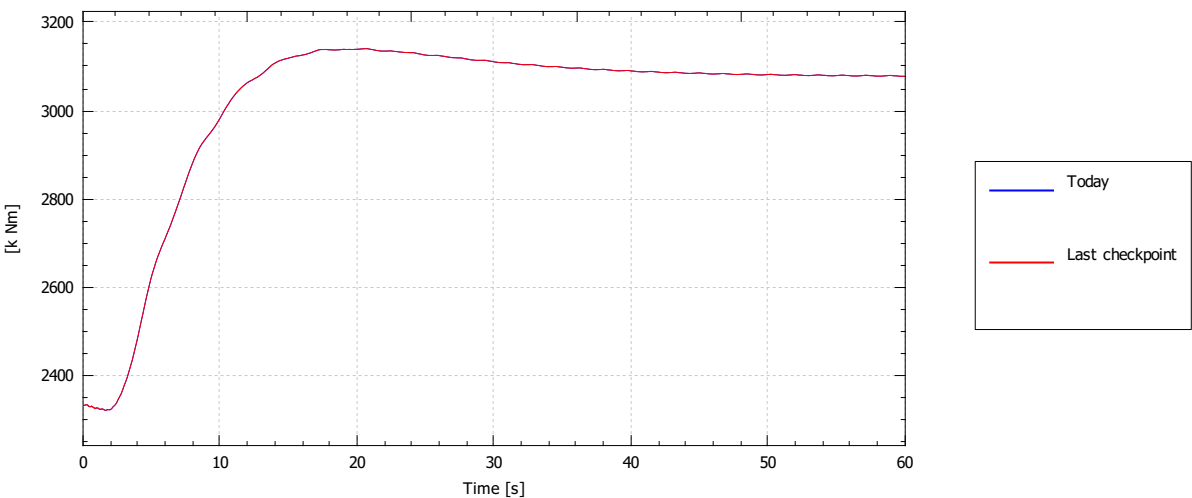
Power (electrical)



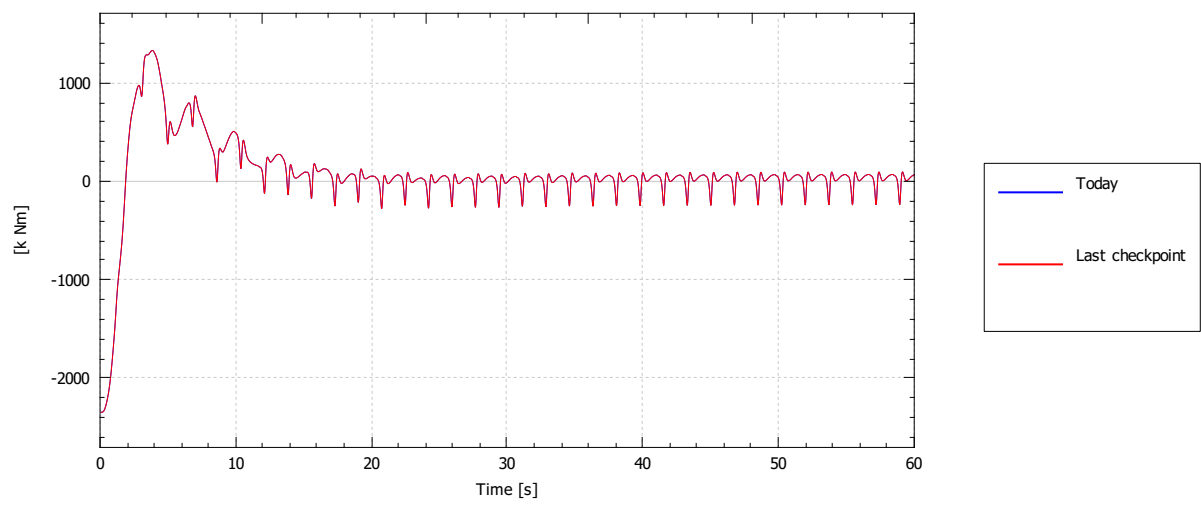
Torque



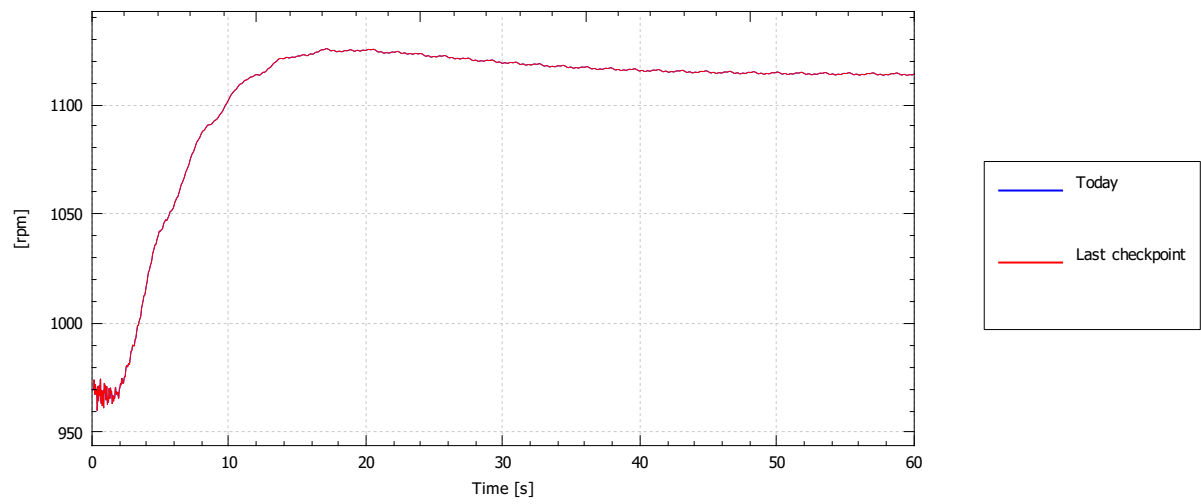
Torque on main shaft



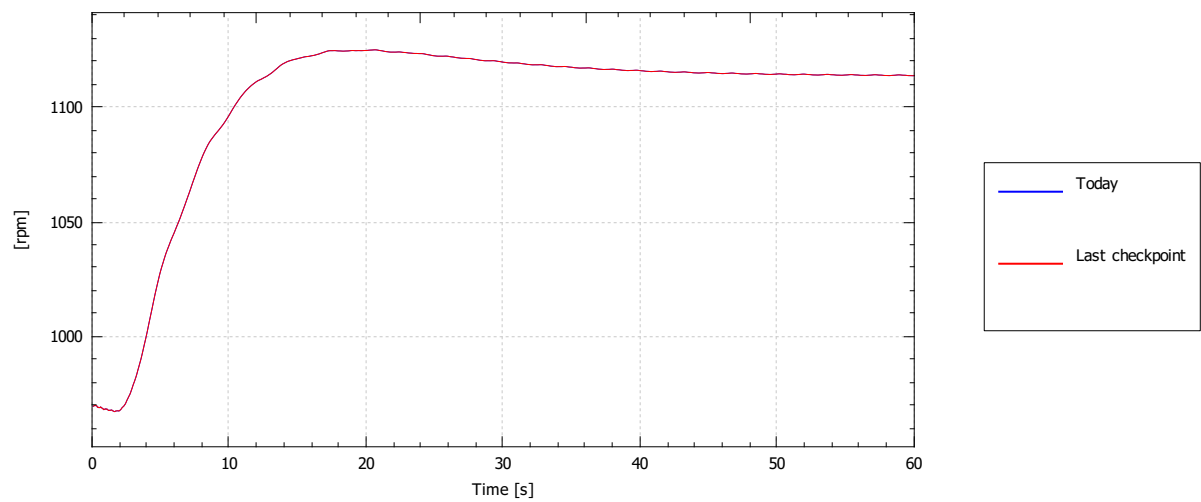
Torque diff. on main shaft



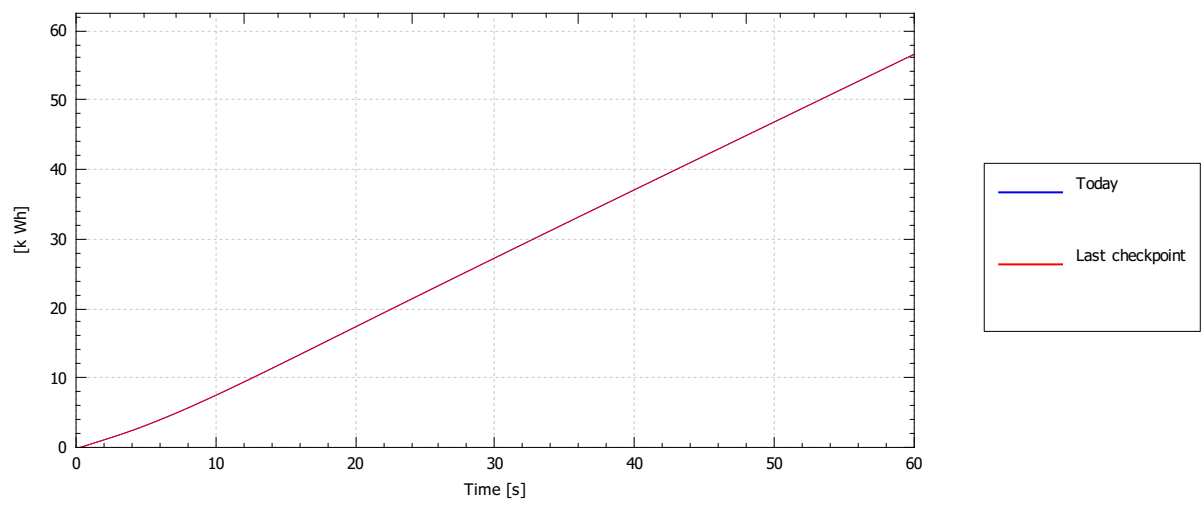
RPM



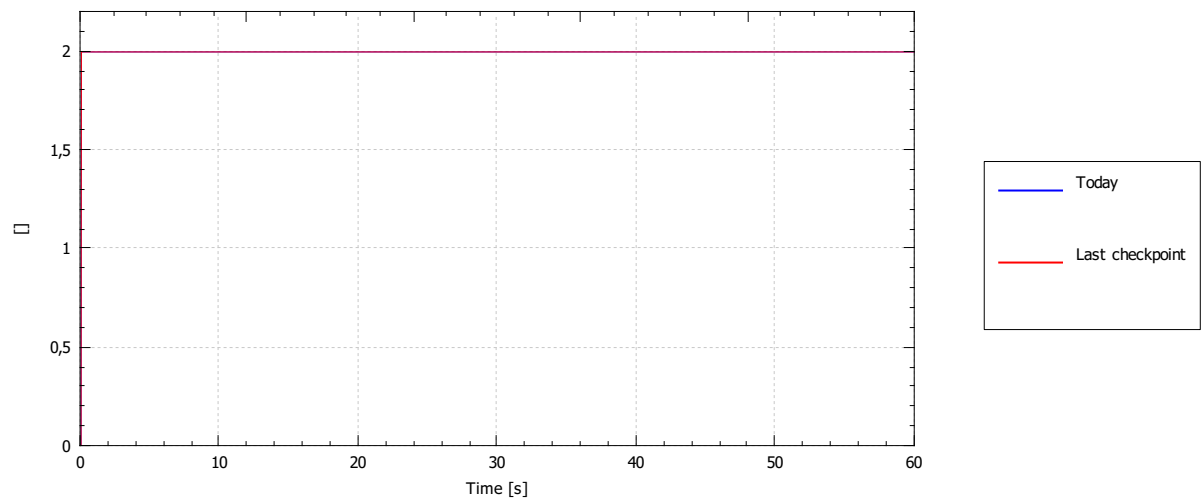
Filtered RPM



Electricity production

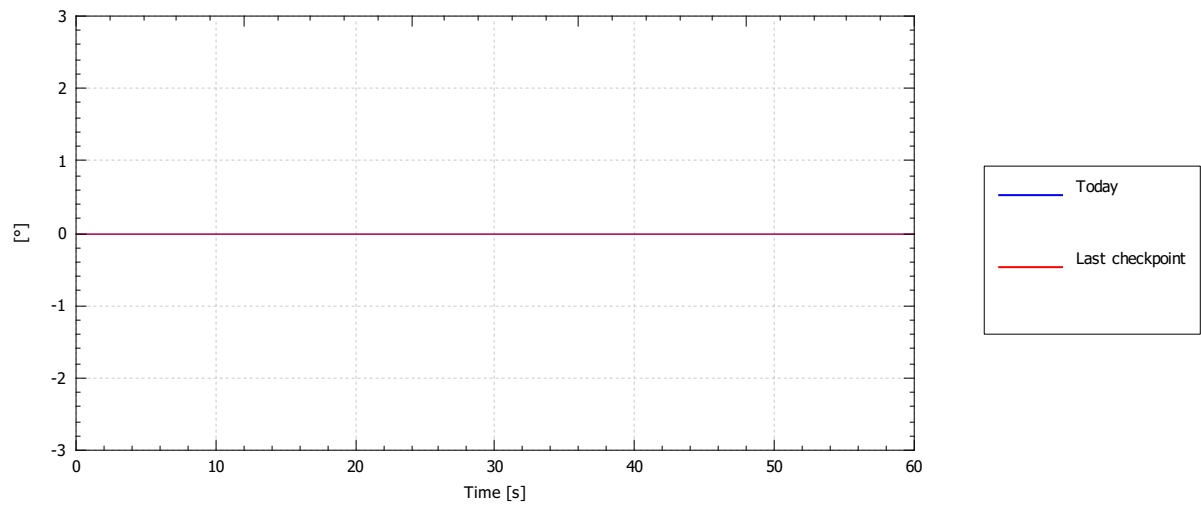


Region

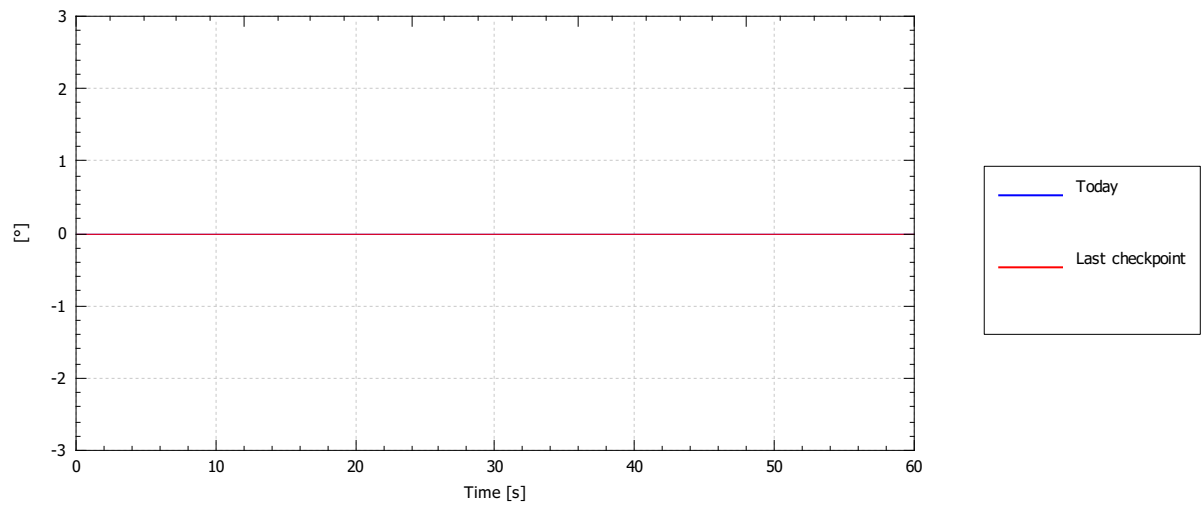


Demanded pitch controller

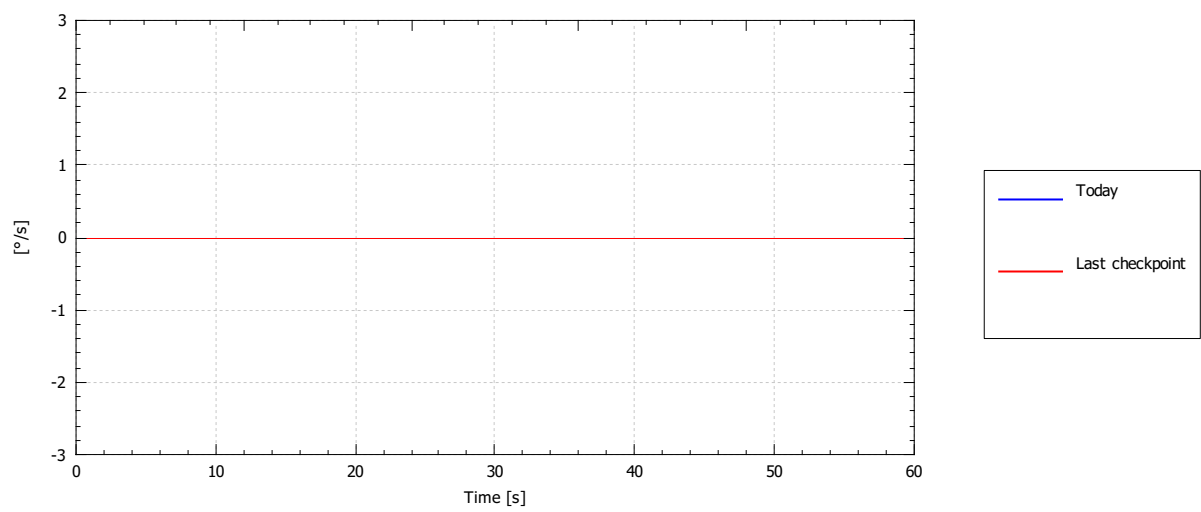
Demanded collective pitch angle



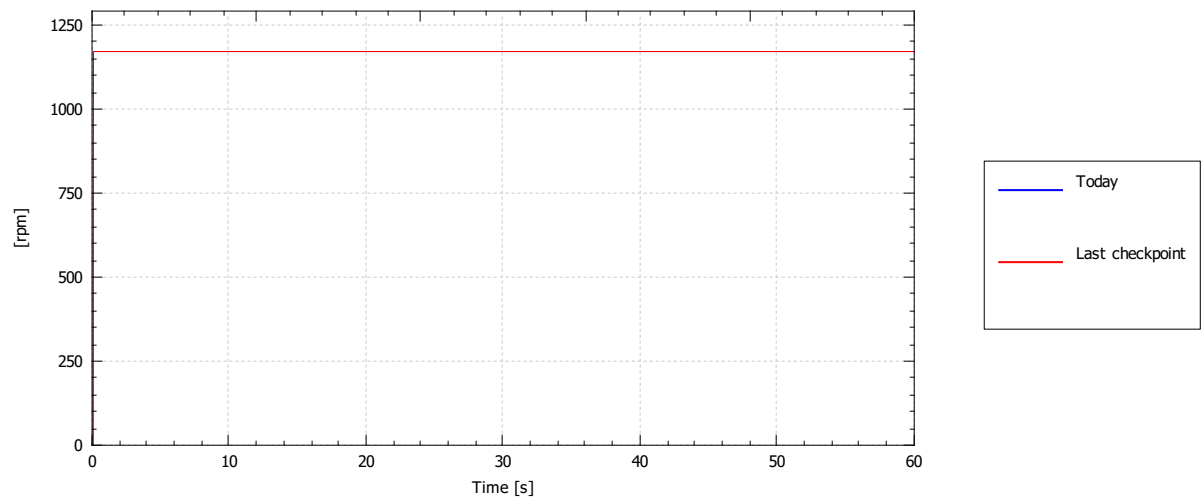
Cumulative demanded collective pitch angle



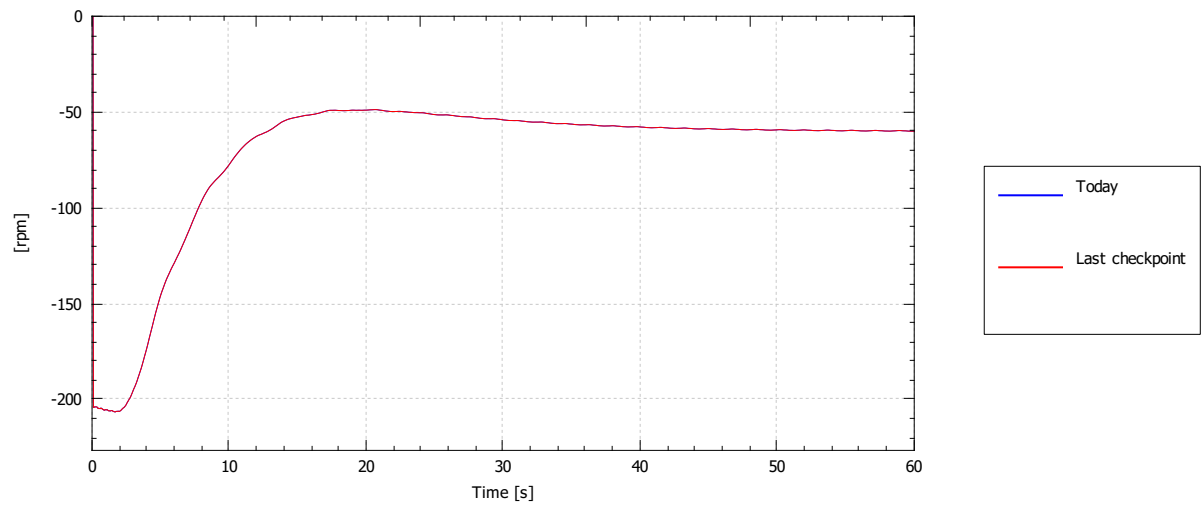
Demanded collective pitch angle rate



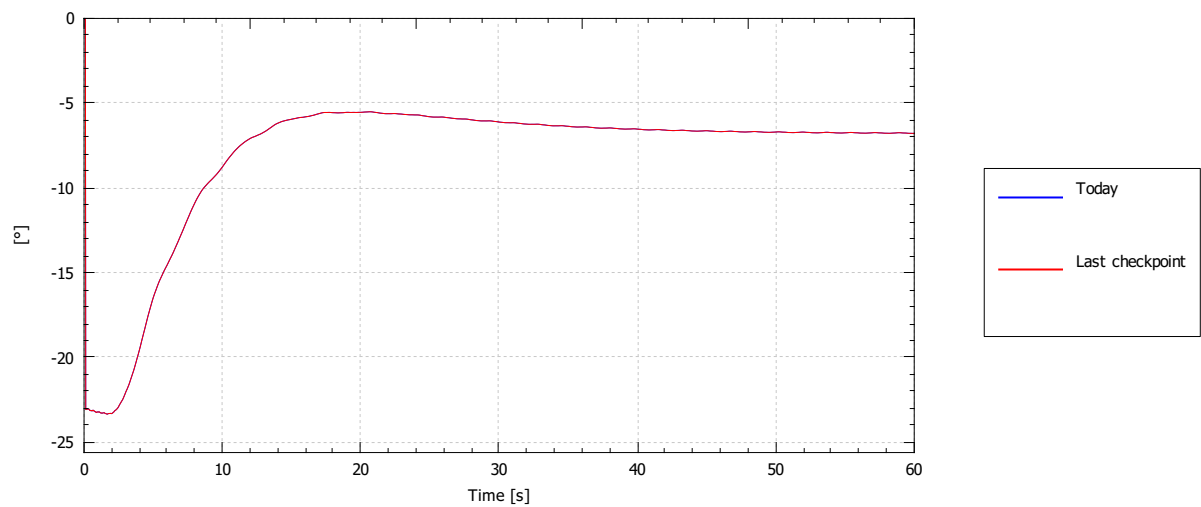
Set point



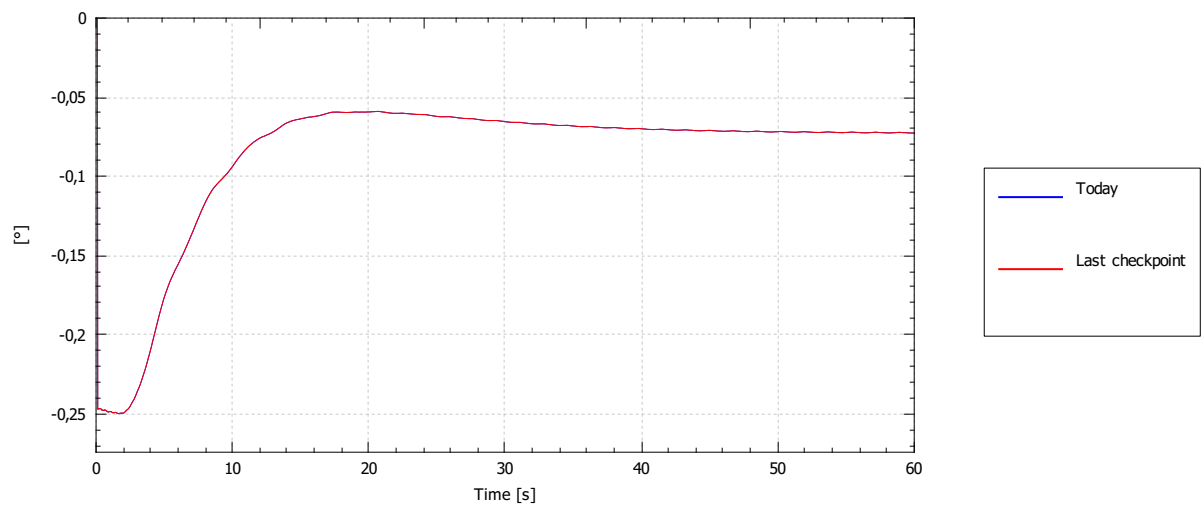
RPM error



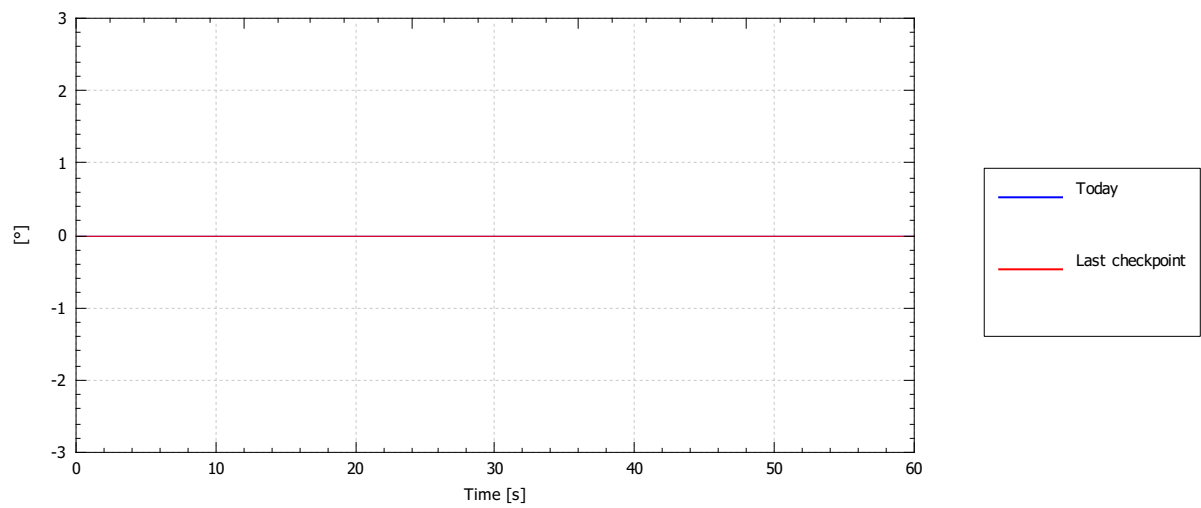
P term



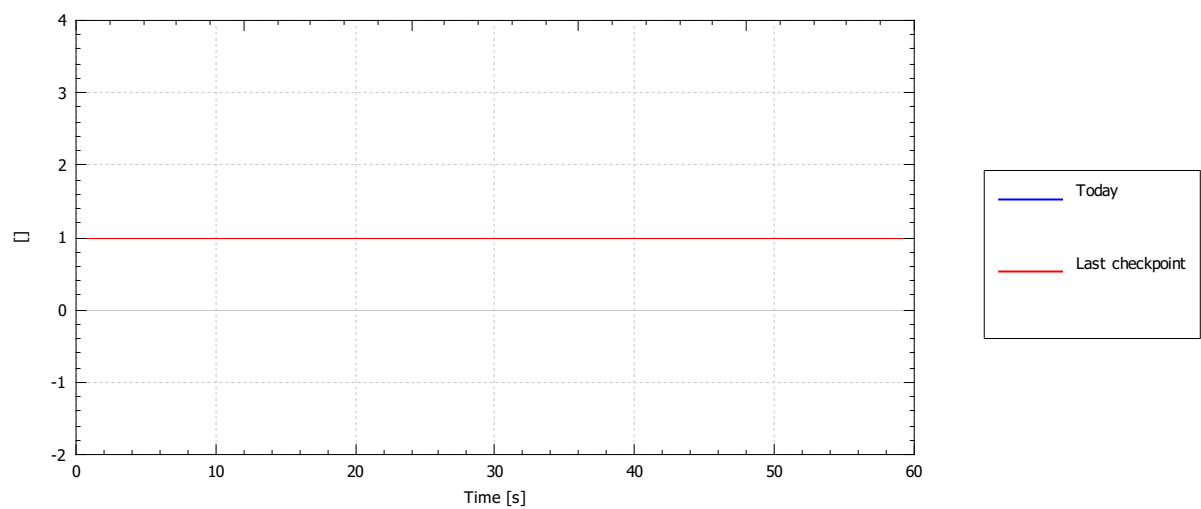
I term

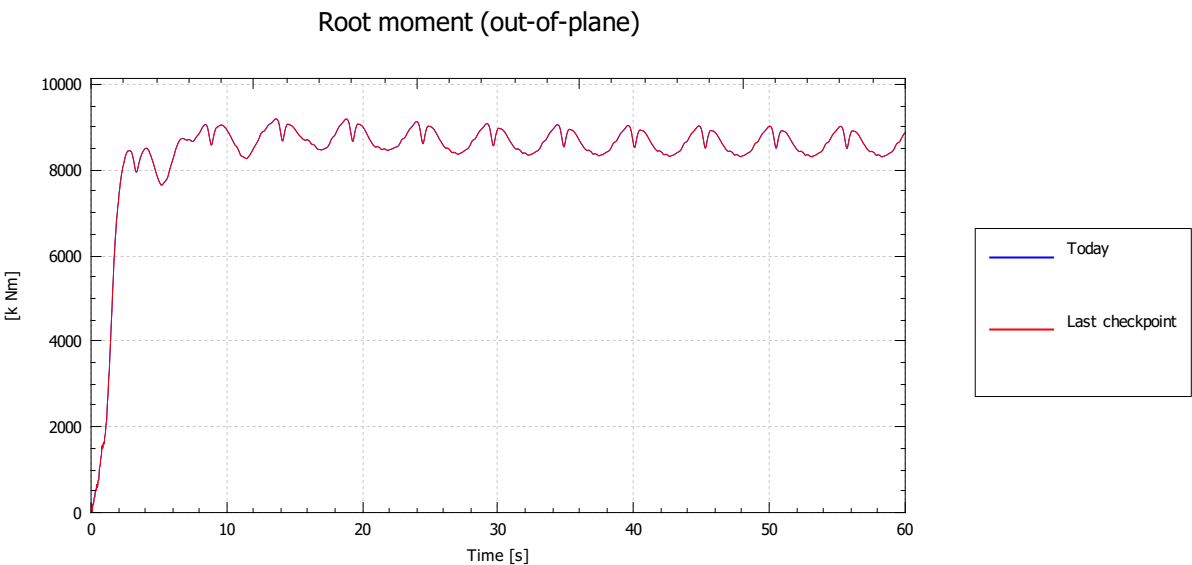
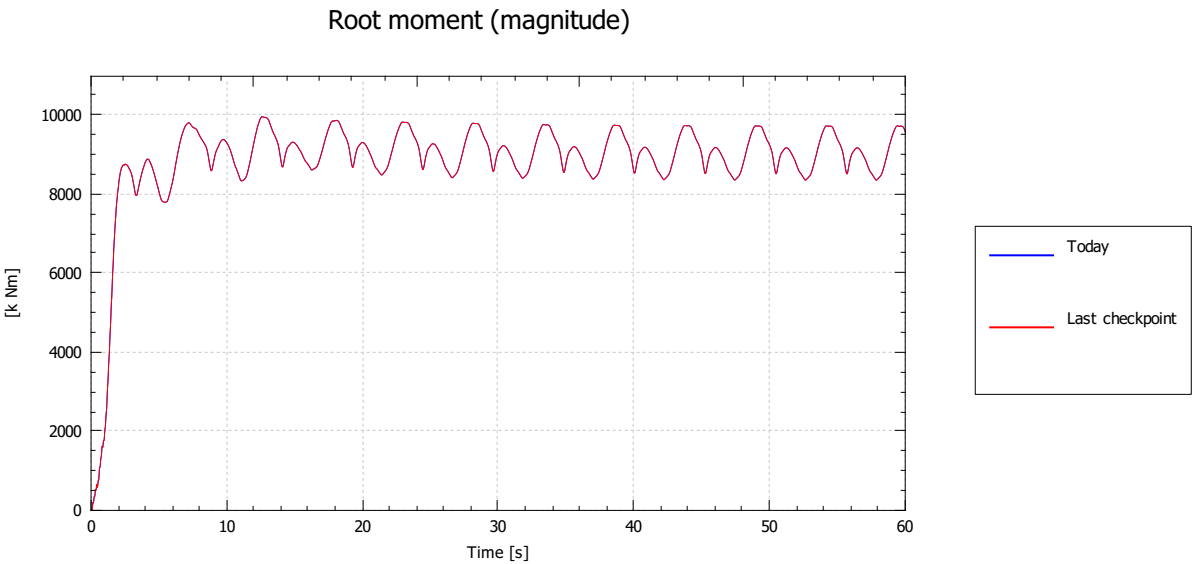
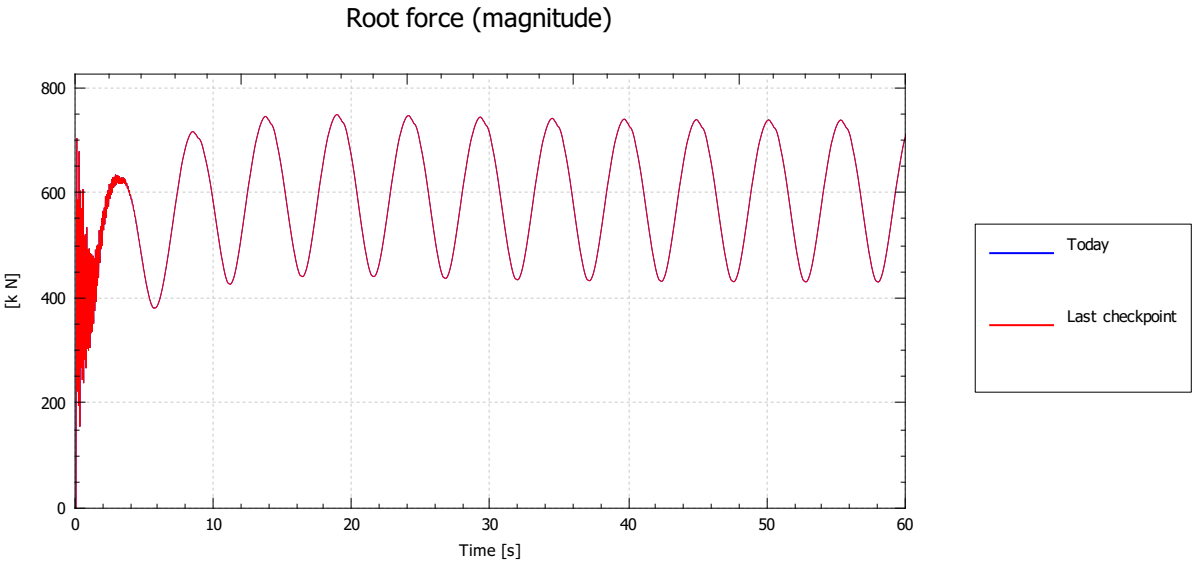


D term

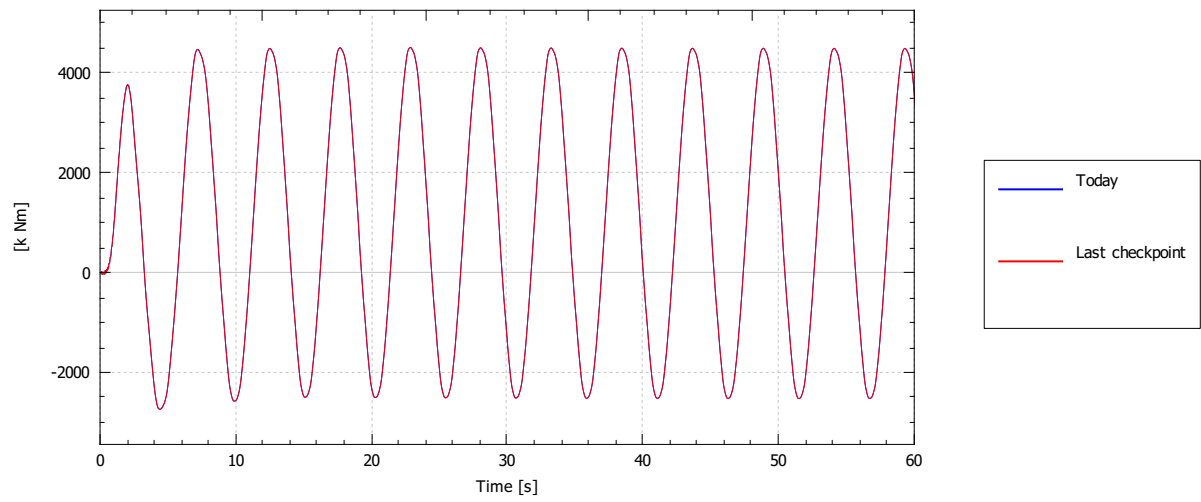


Gain scheduling factor

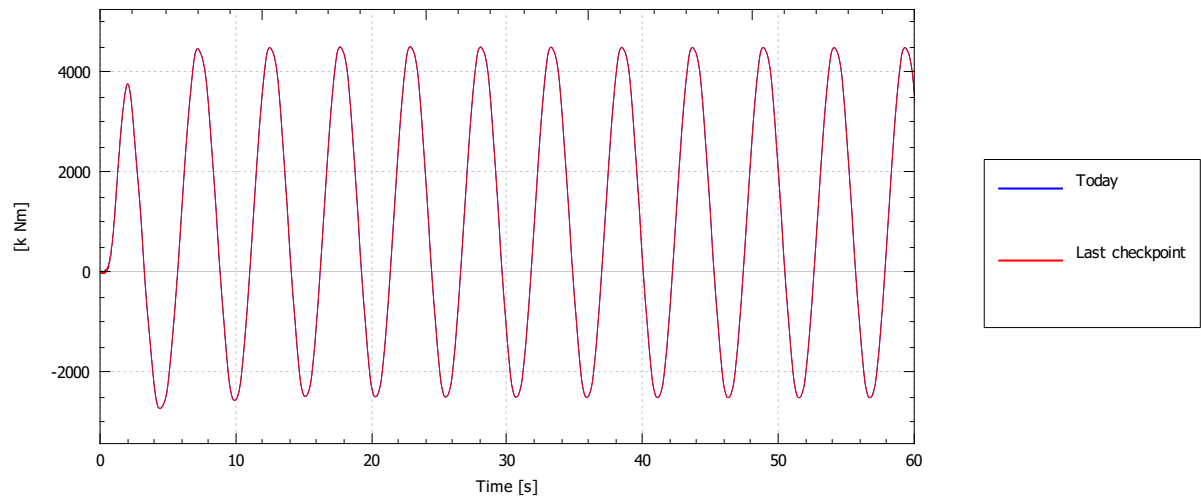




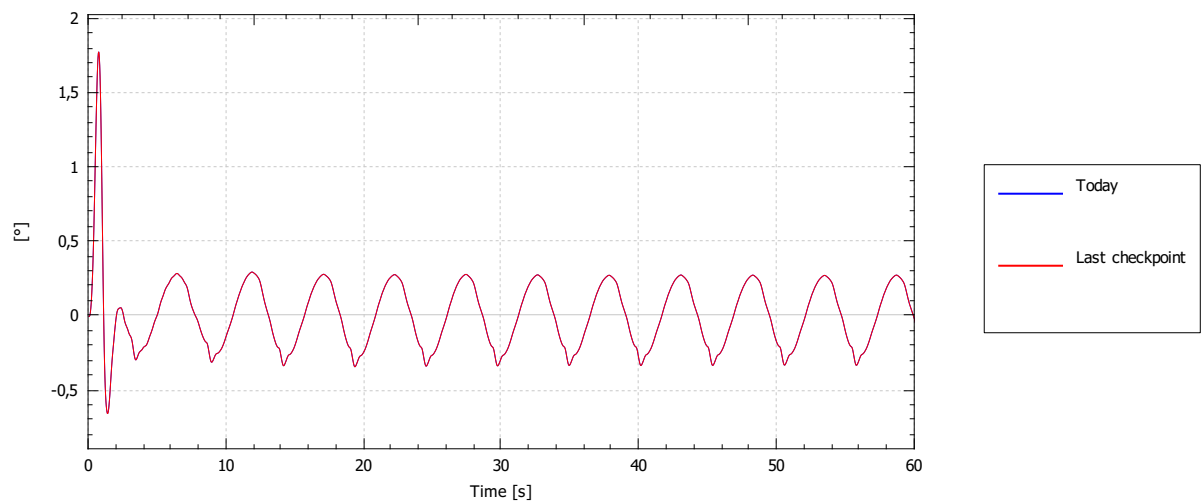
Root moment (in-plane)



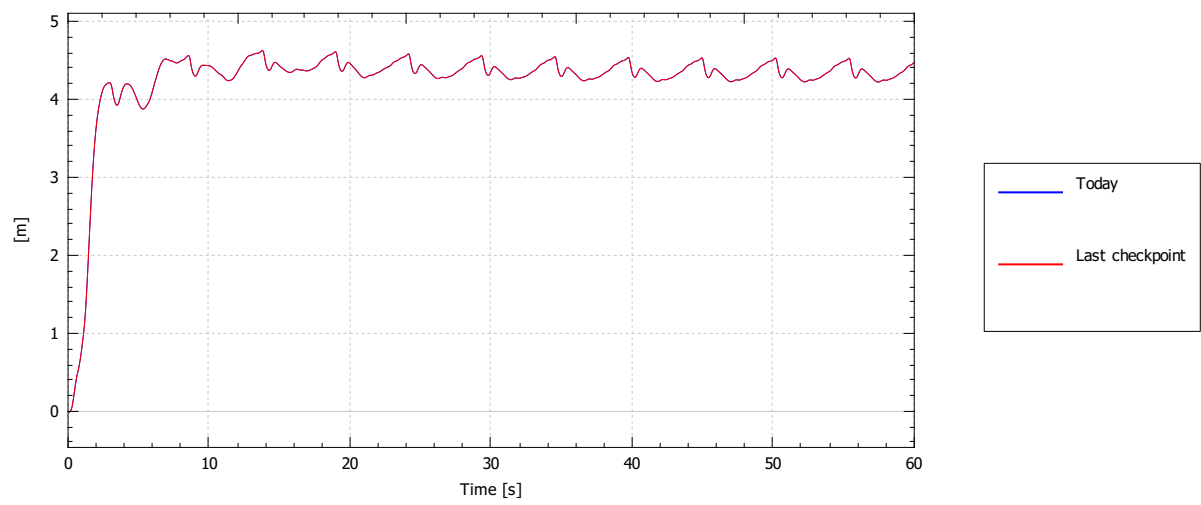
Root moment about shaft



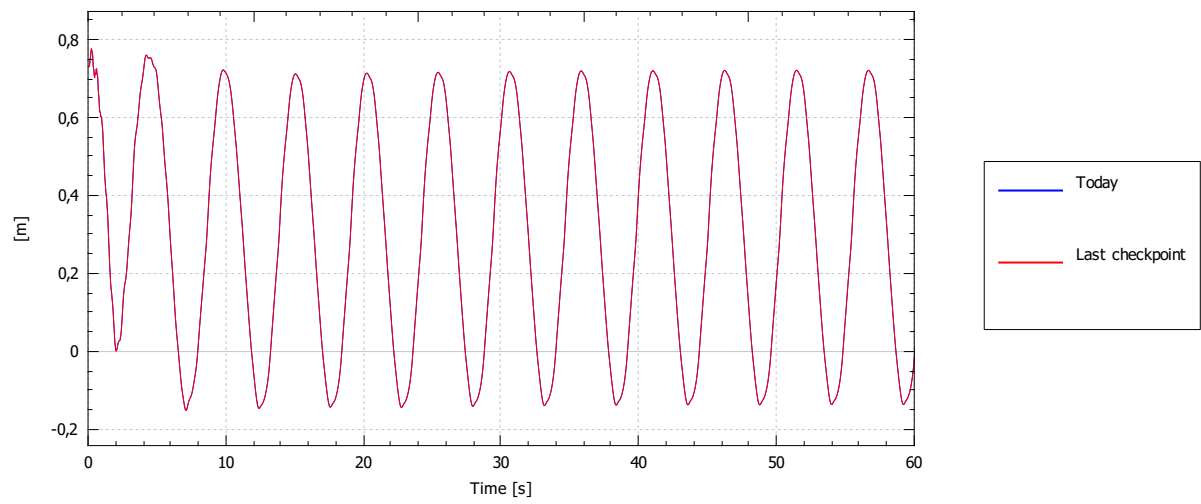
Pitch angle



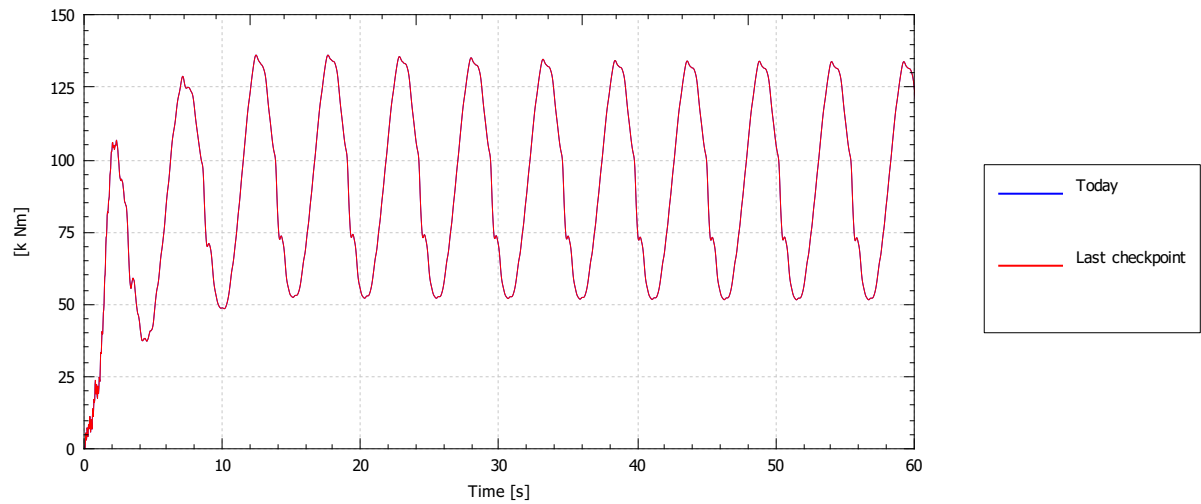
Tip deflection (out-of-plane)

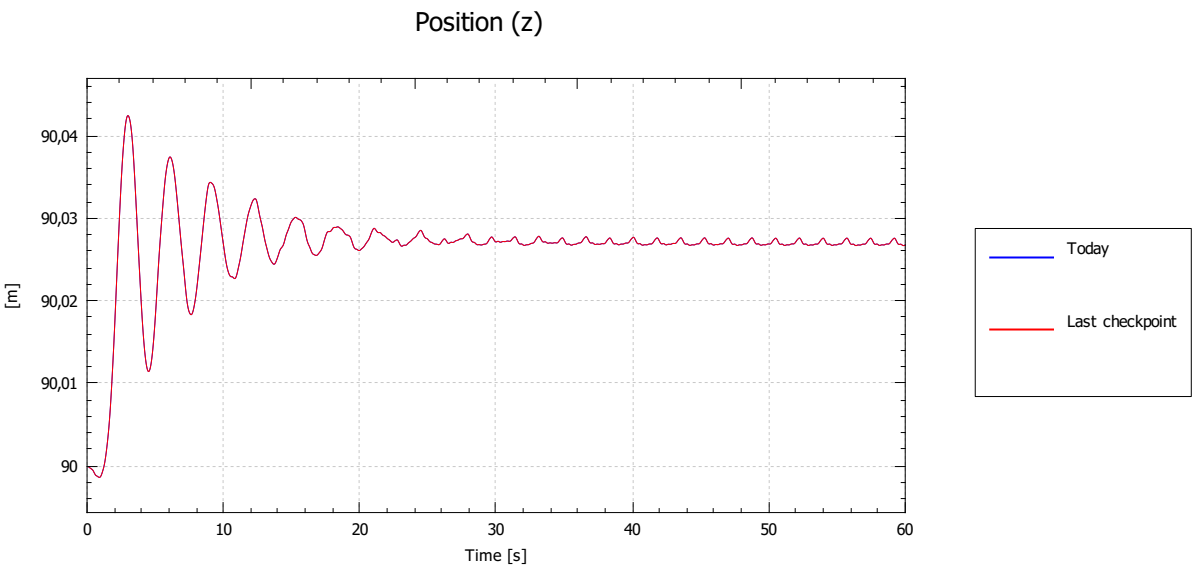
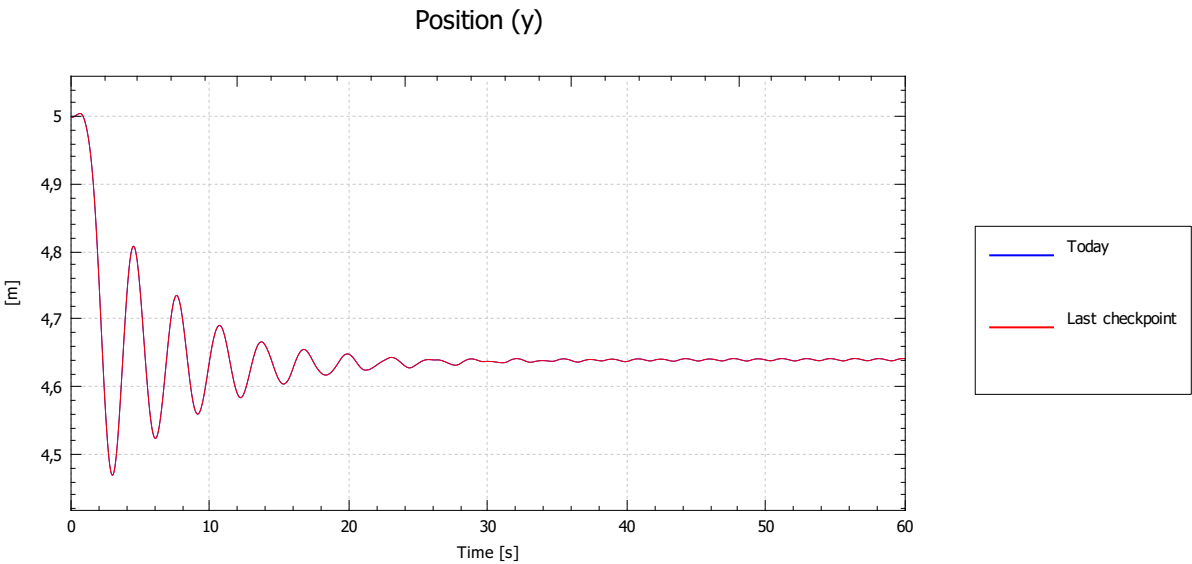
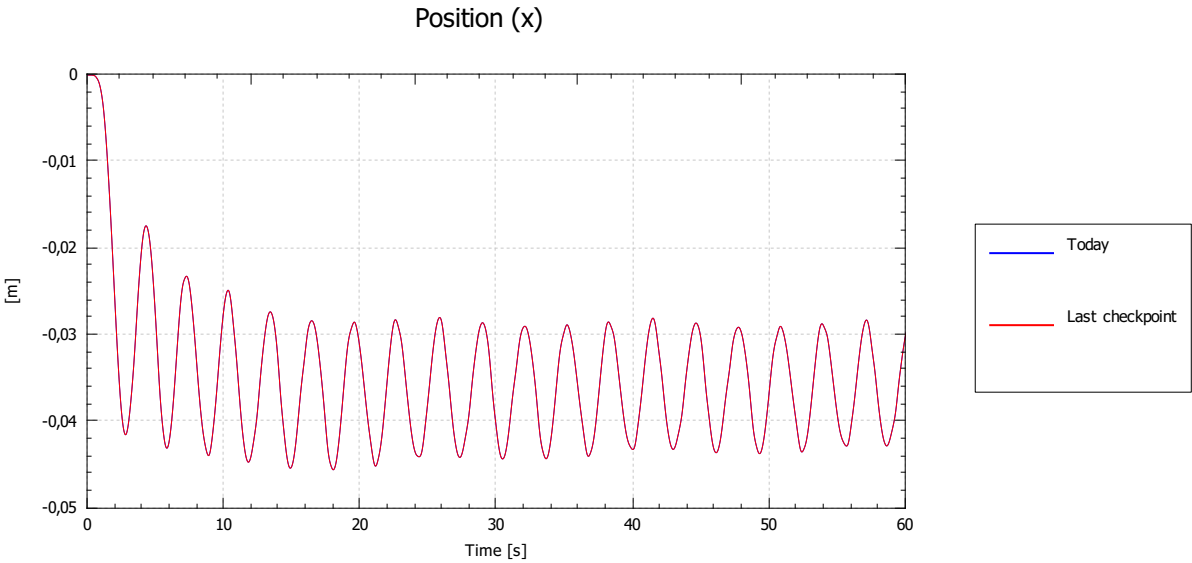


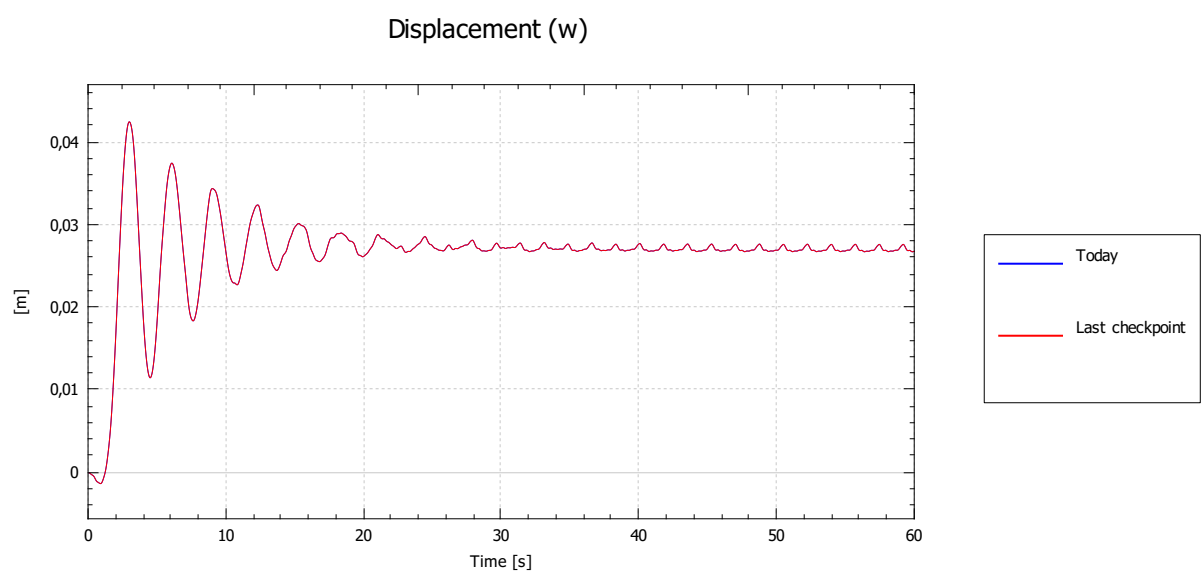
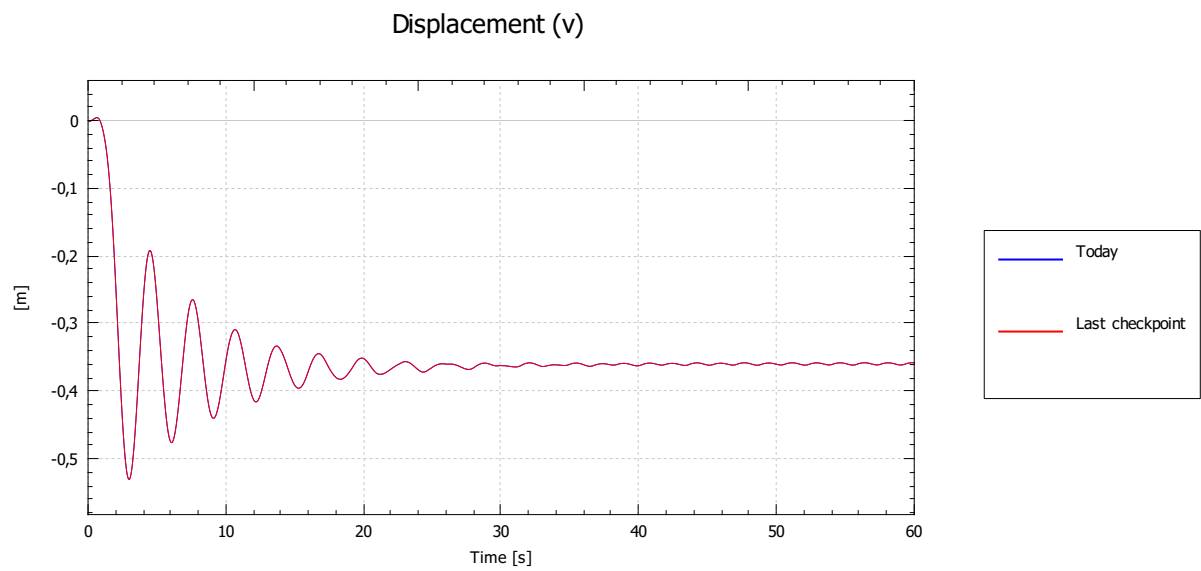
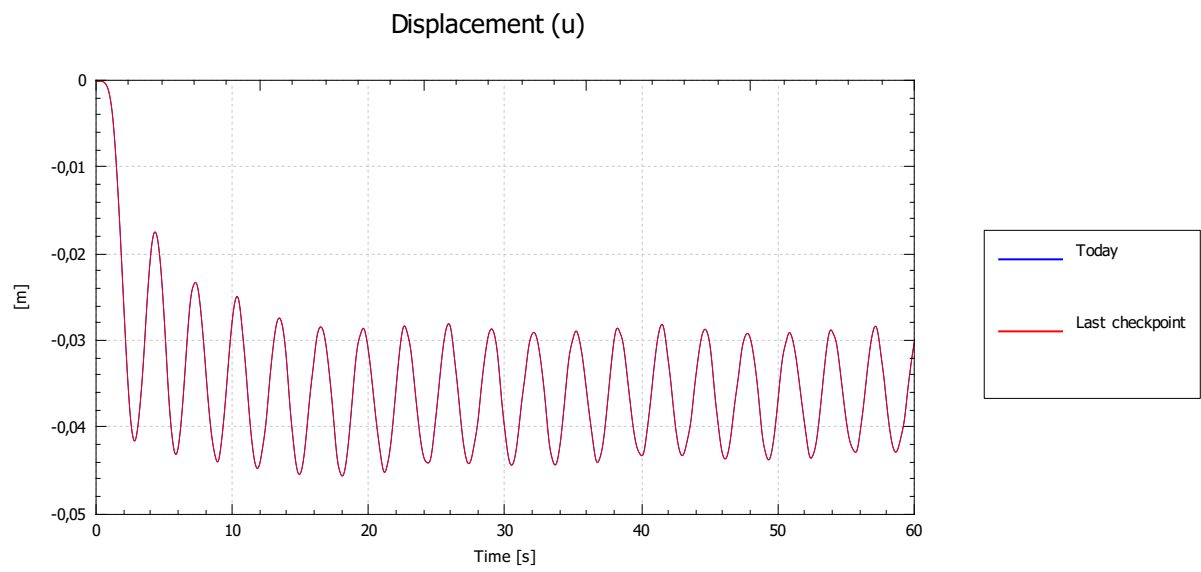
Tip deflection (in-plane)



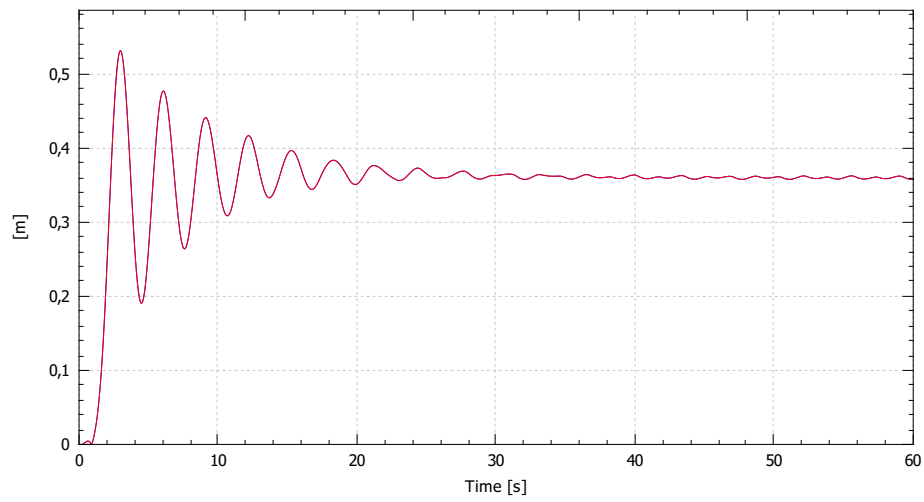
Root torque



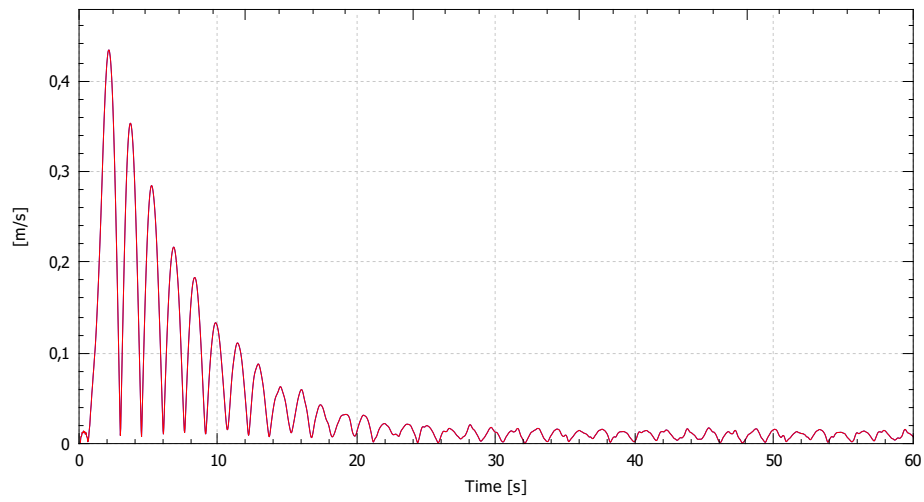




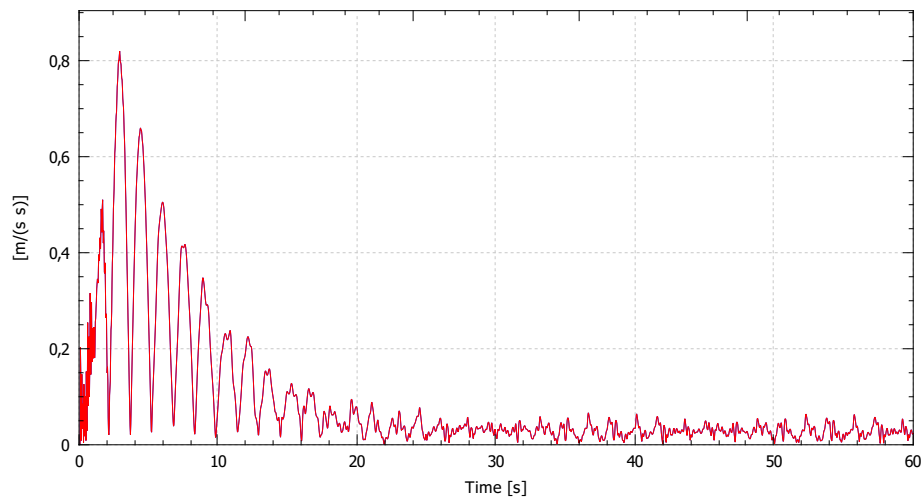
Displacement magnitude



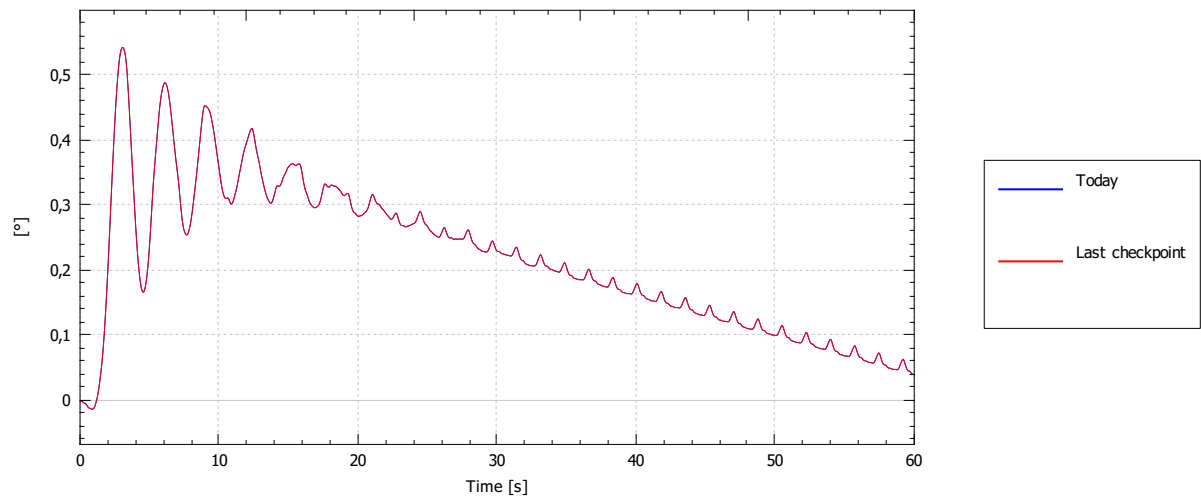
Speed



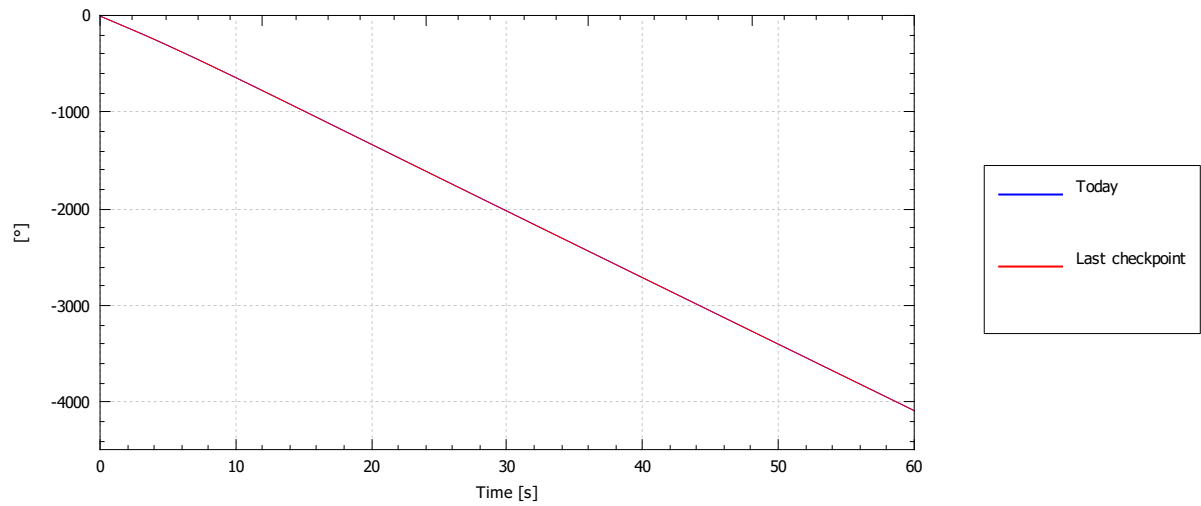
Acceleration, magnitude



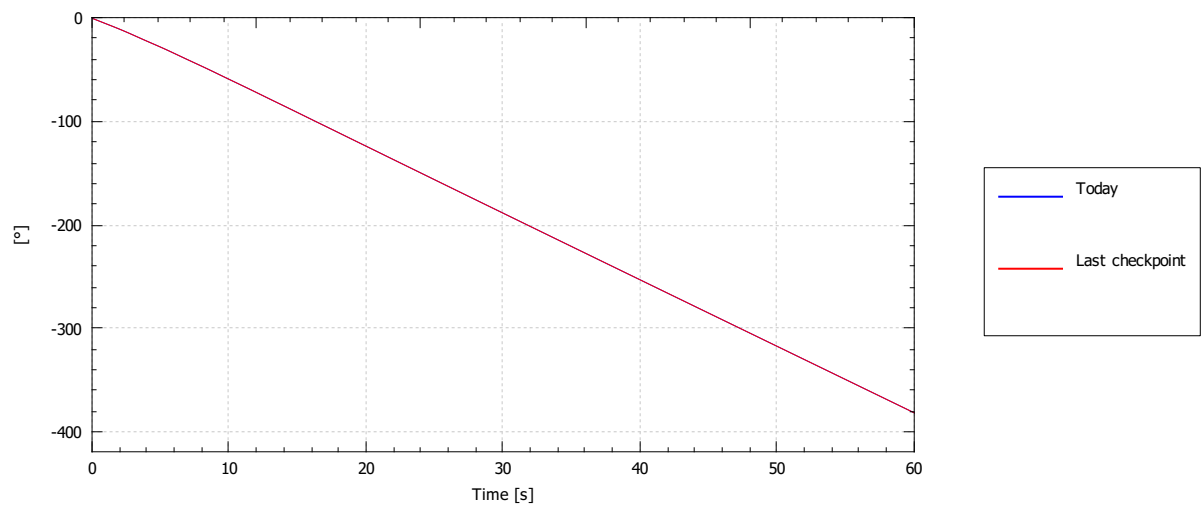
Rotational displacement (ru)



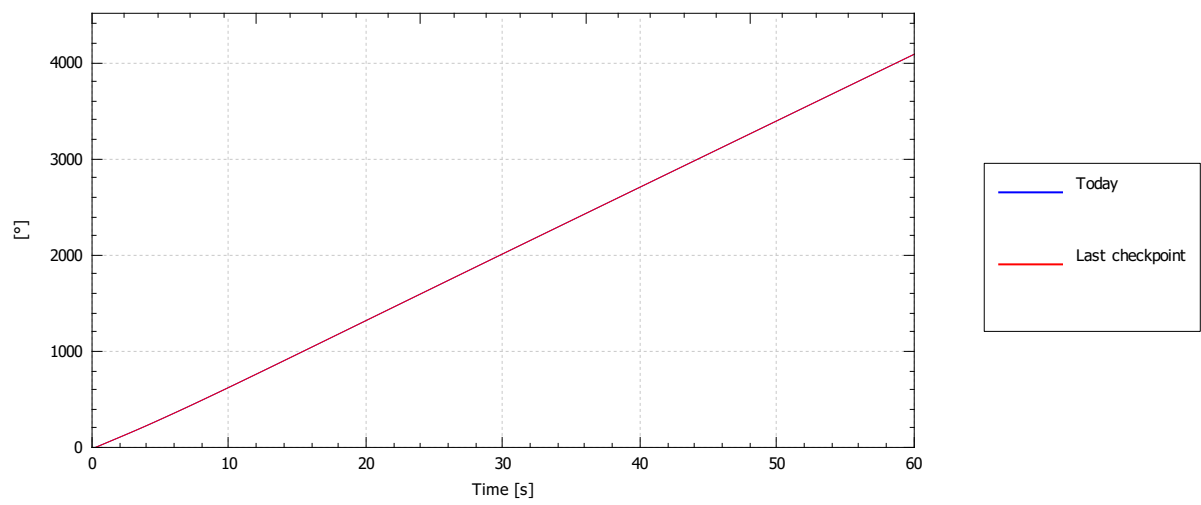
Rotational displacement (rv)



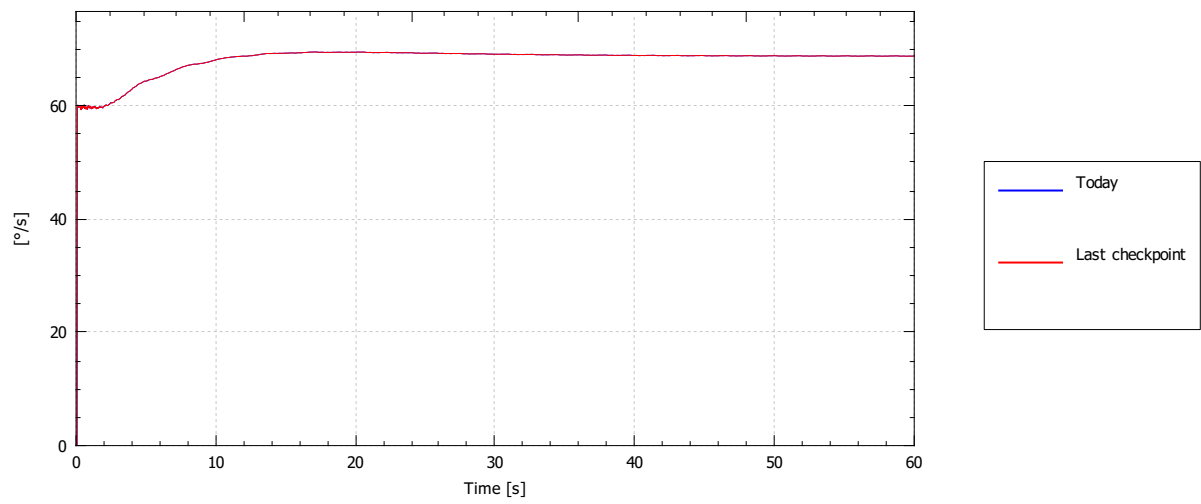
Rotational displacement (rw)



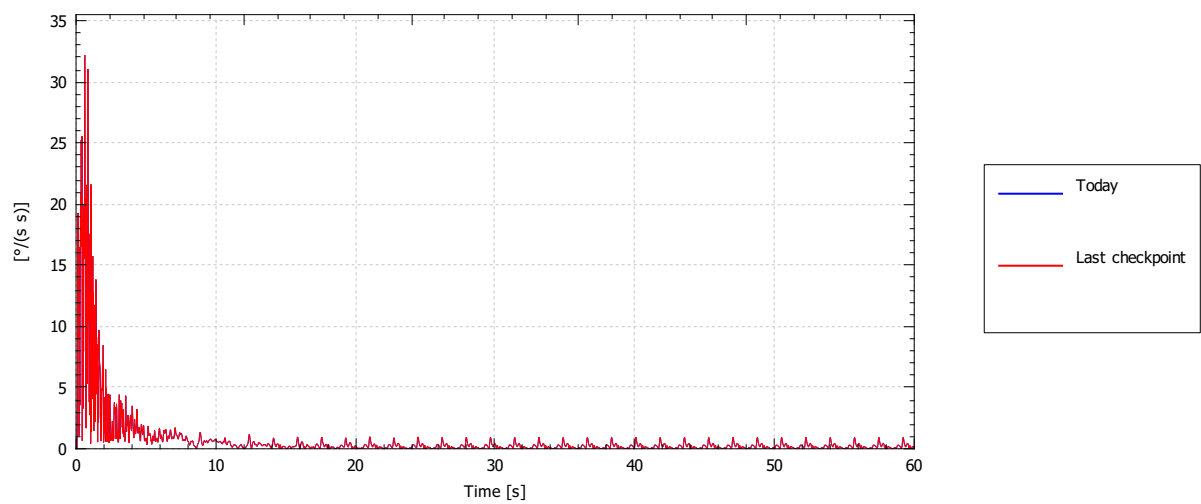
Rotational displacement magnitude



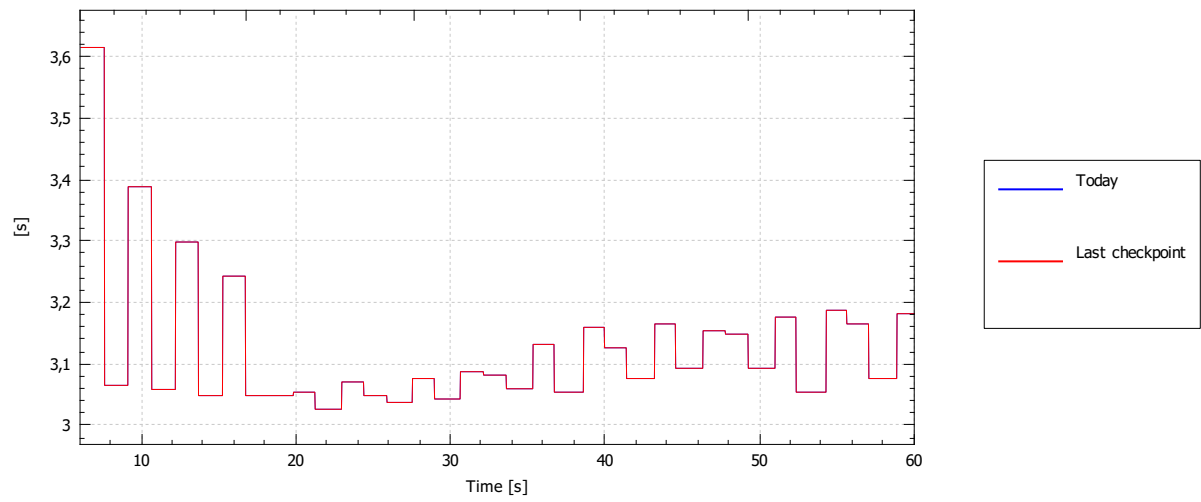
Rotational speed



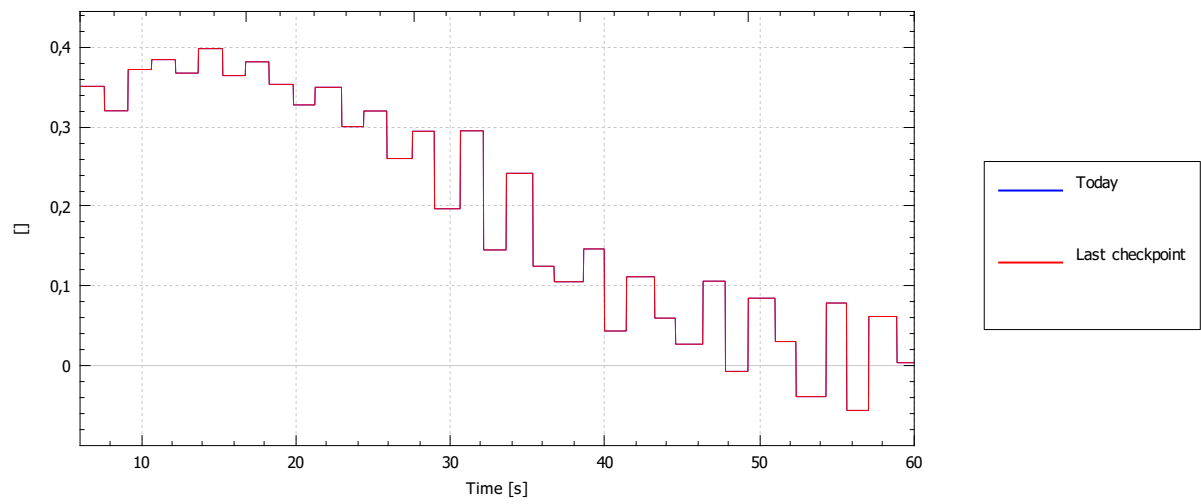
Rotational acceleration mag



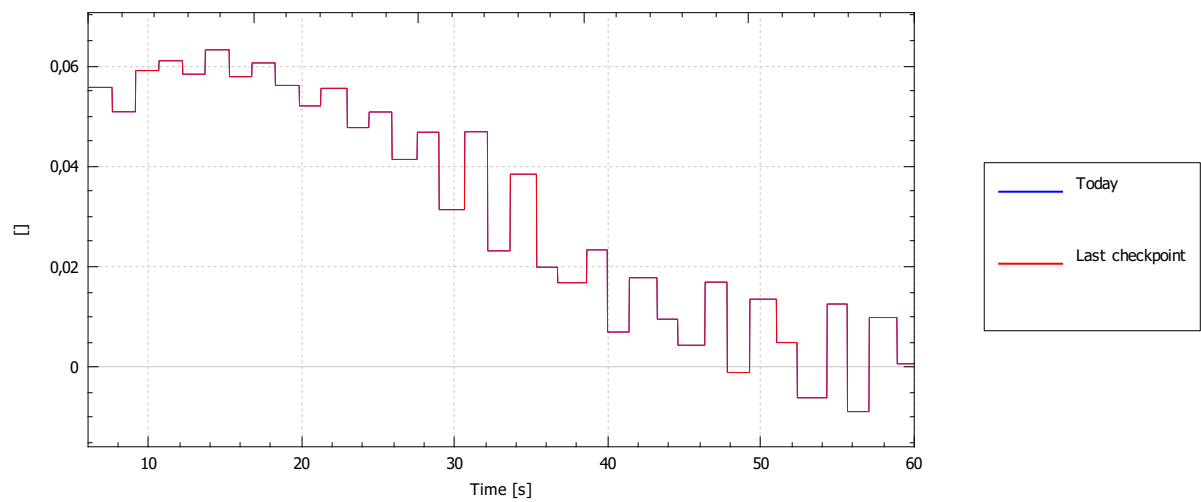
Displacement period



Displacement logarithmic decrement

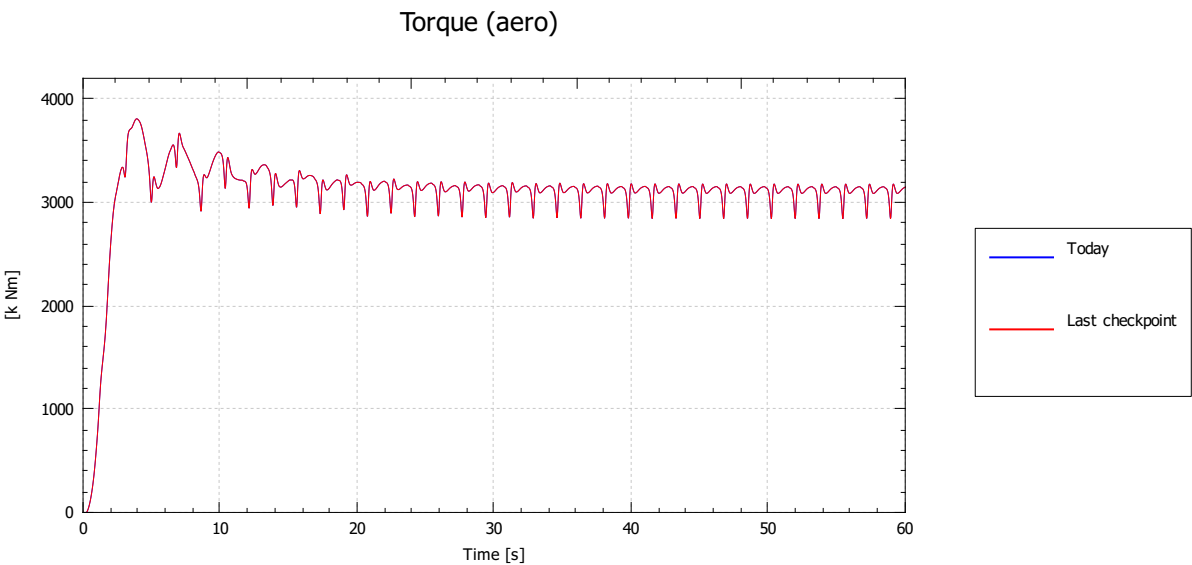
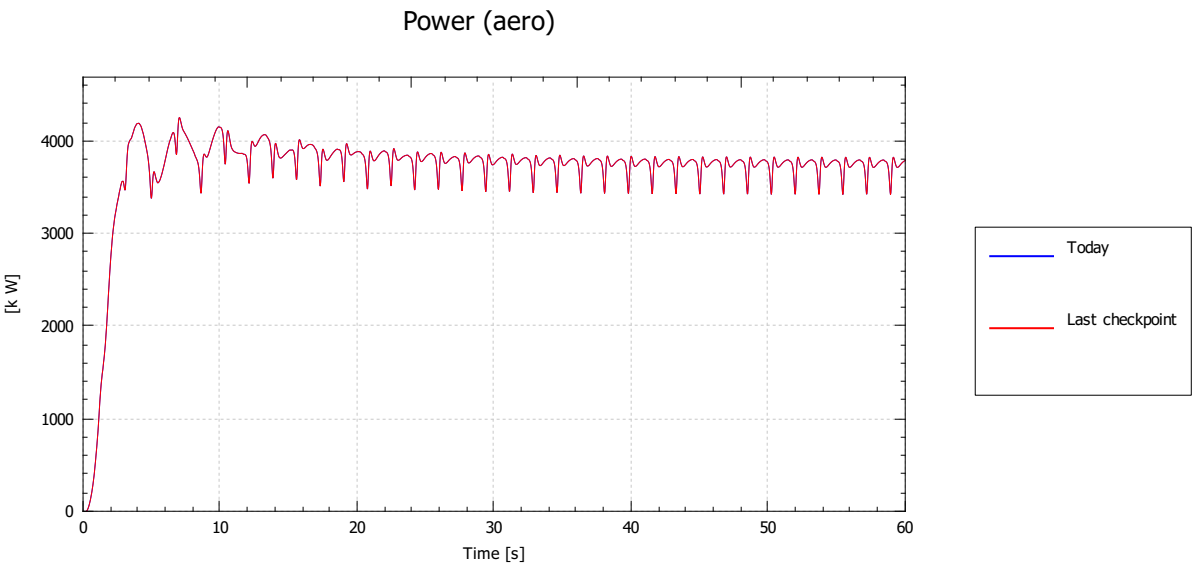


Displacement damping ratio

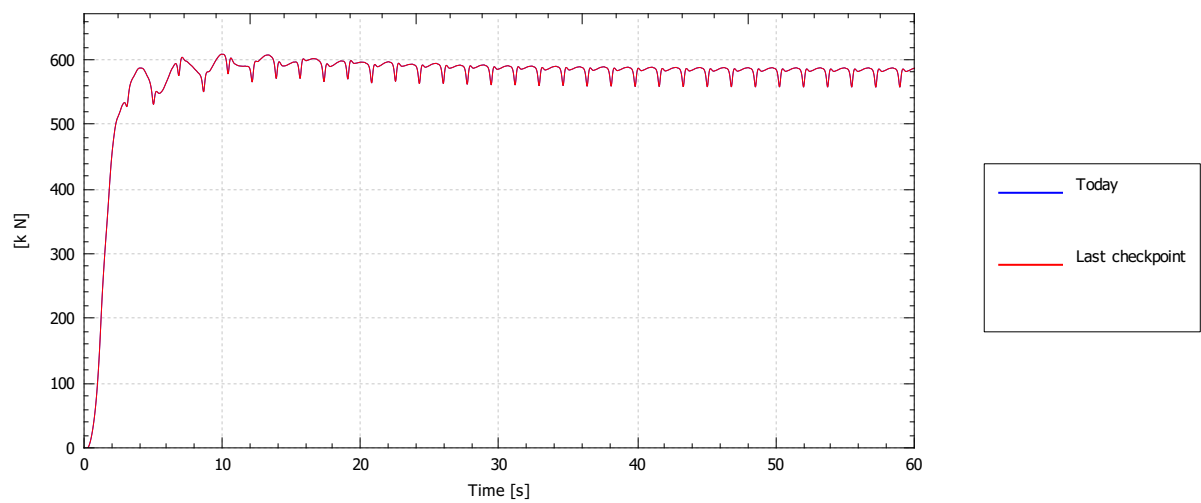


Load case: Ref actuator torque

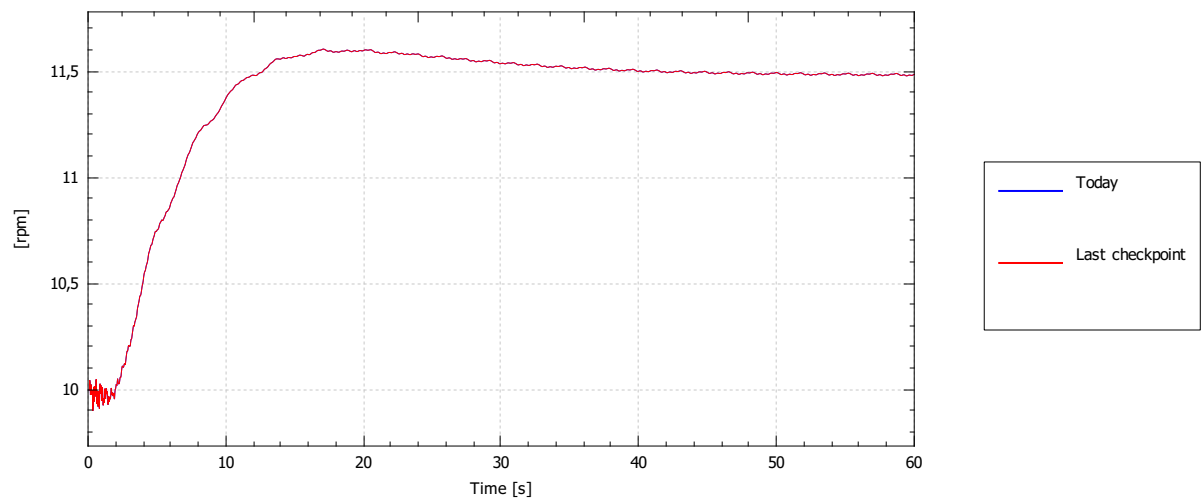
Rotor



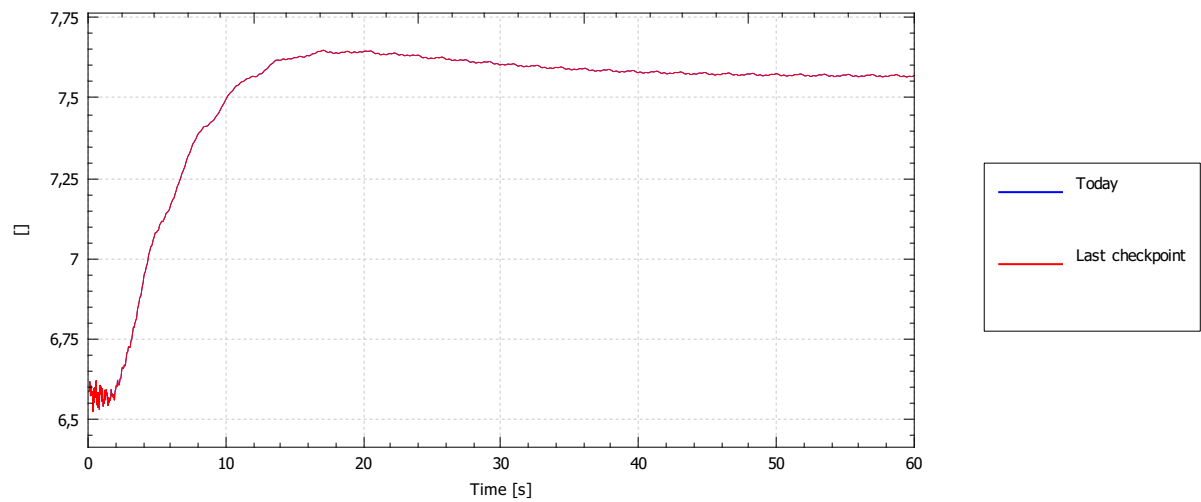
Thrust (aero)



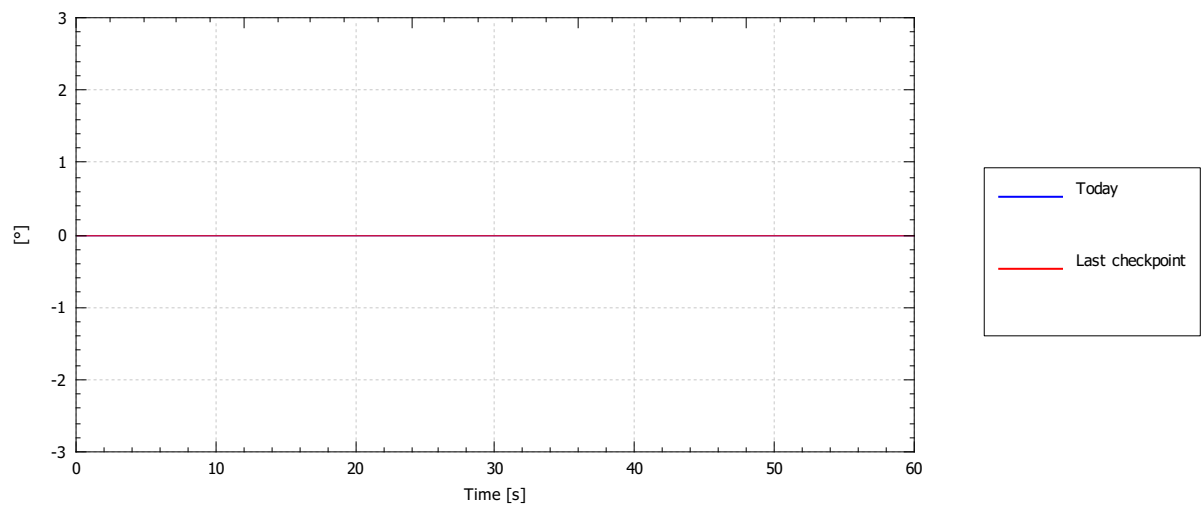
RPM



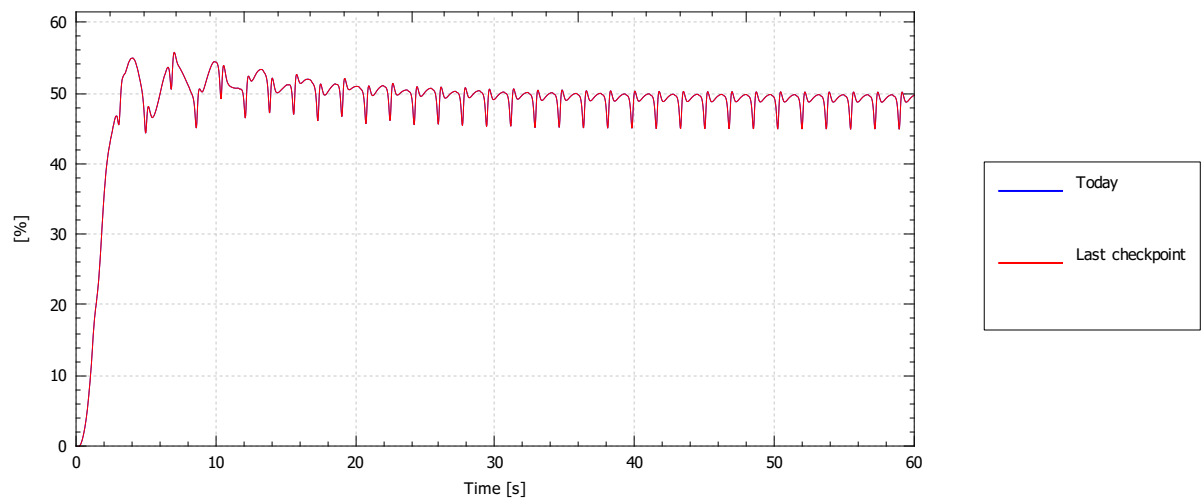
TSR



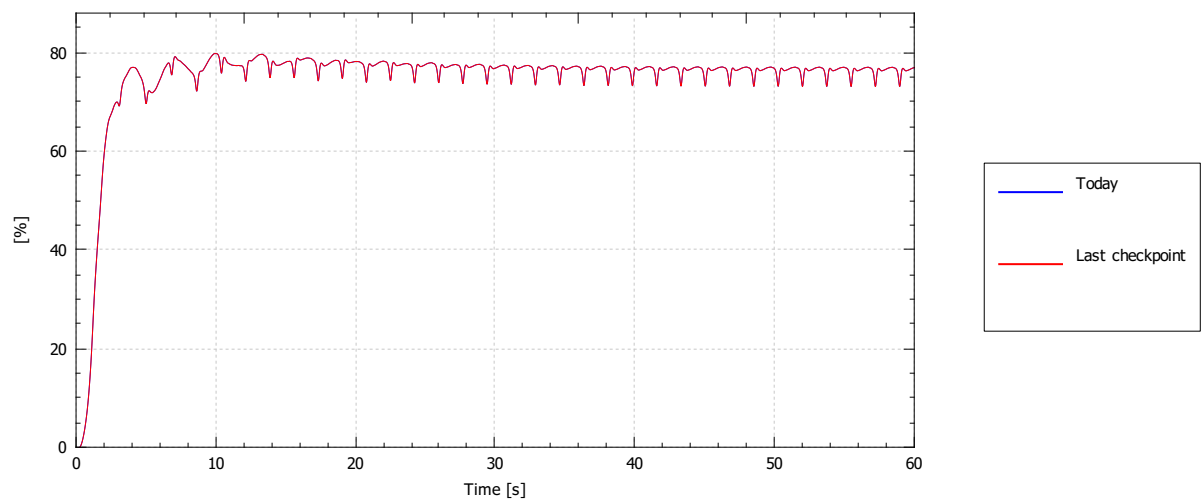
Representative demanded pitch angle



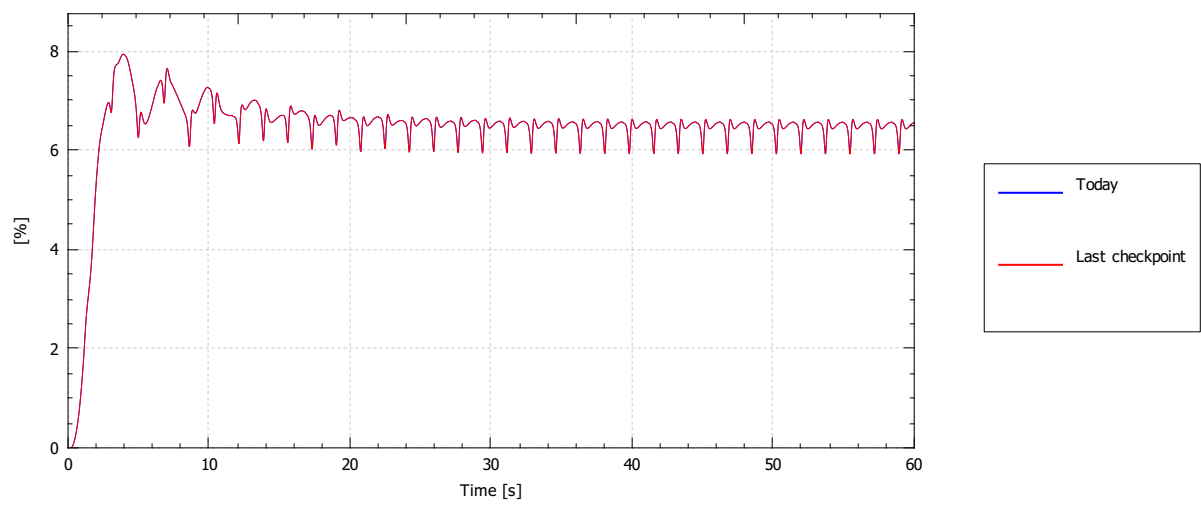
Power coef. (CP)



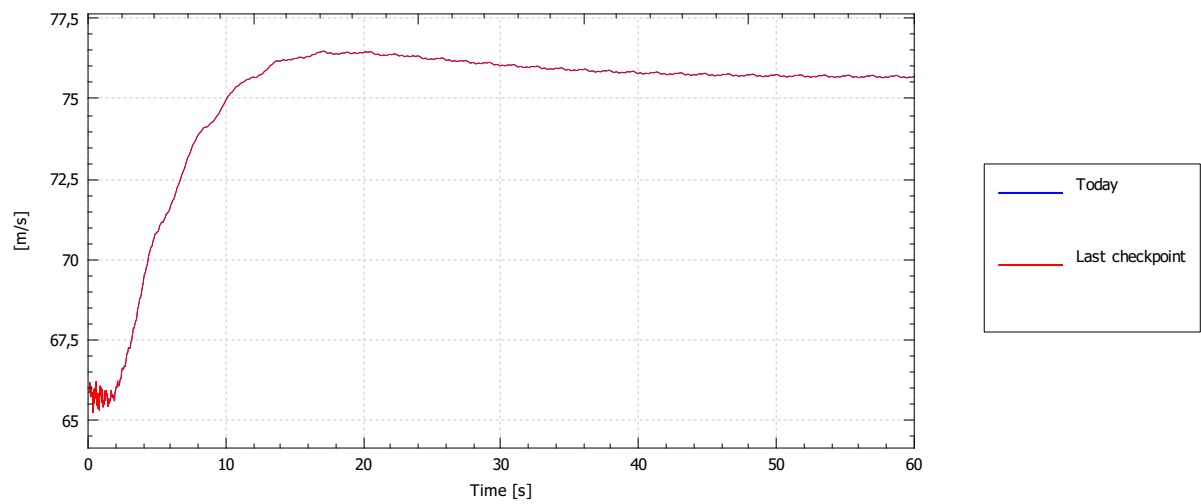
Thrust coef. (CT)



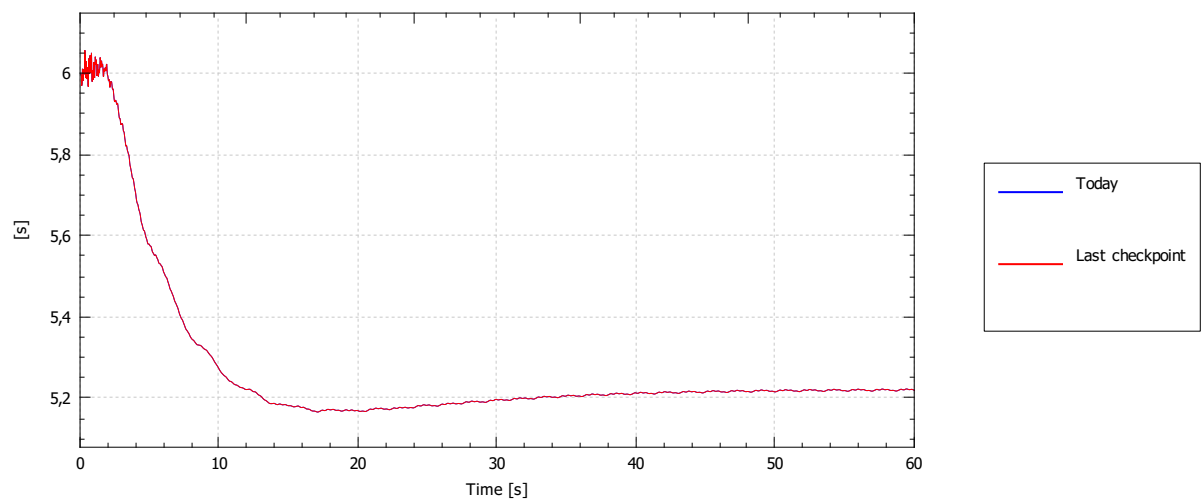
Torque coef. (CQ)



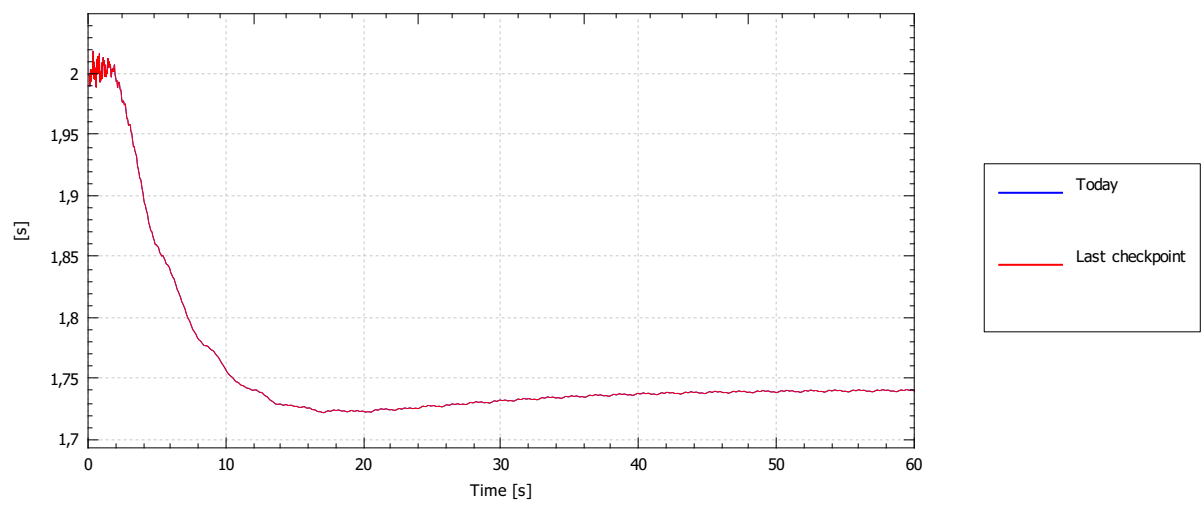
Tip speed



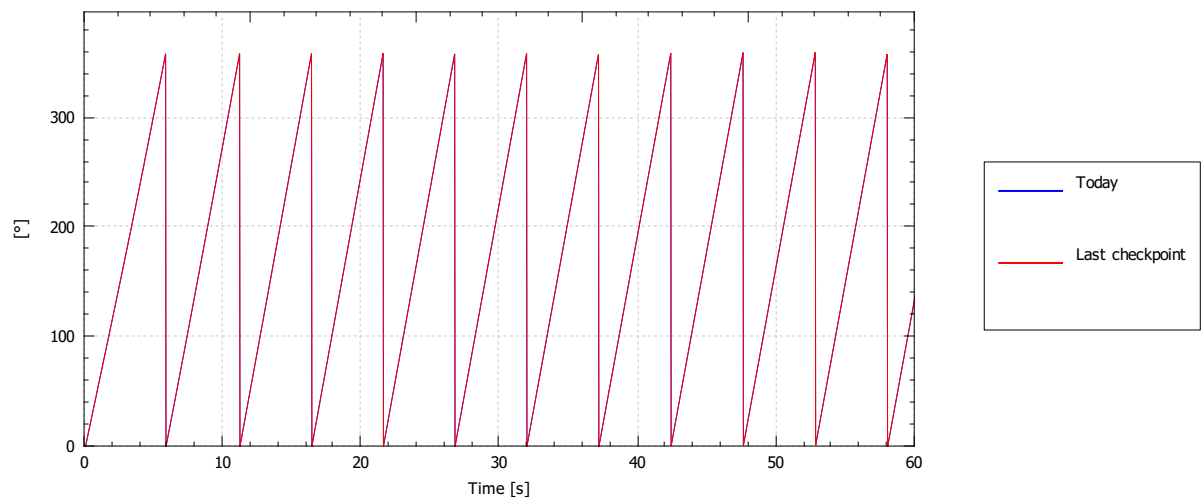
1P (one revolution)



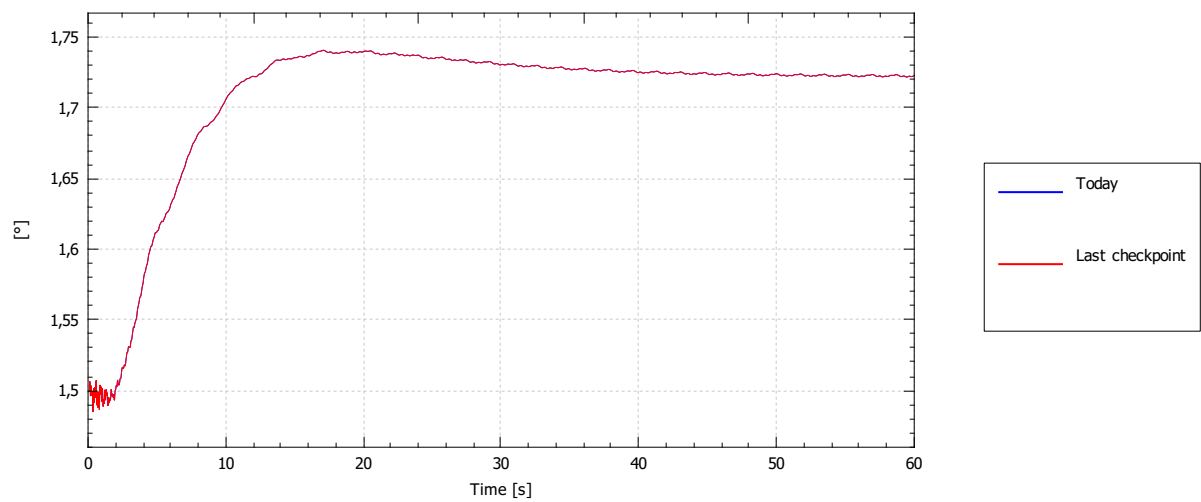
nP (blade passing)



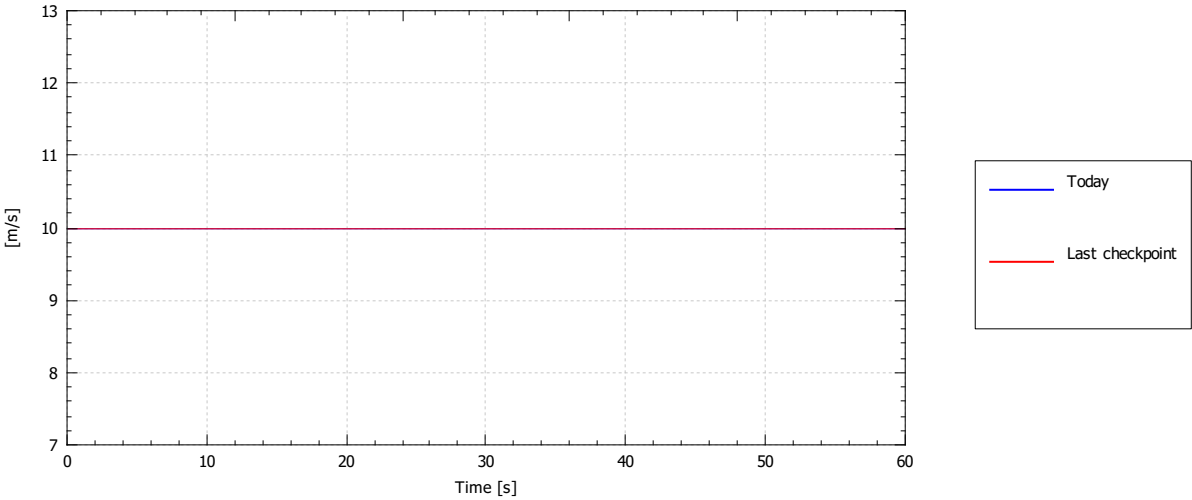
Azimuth angle



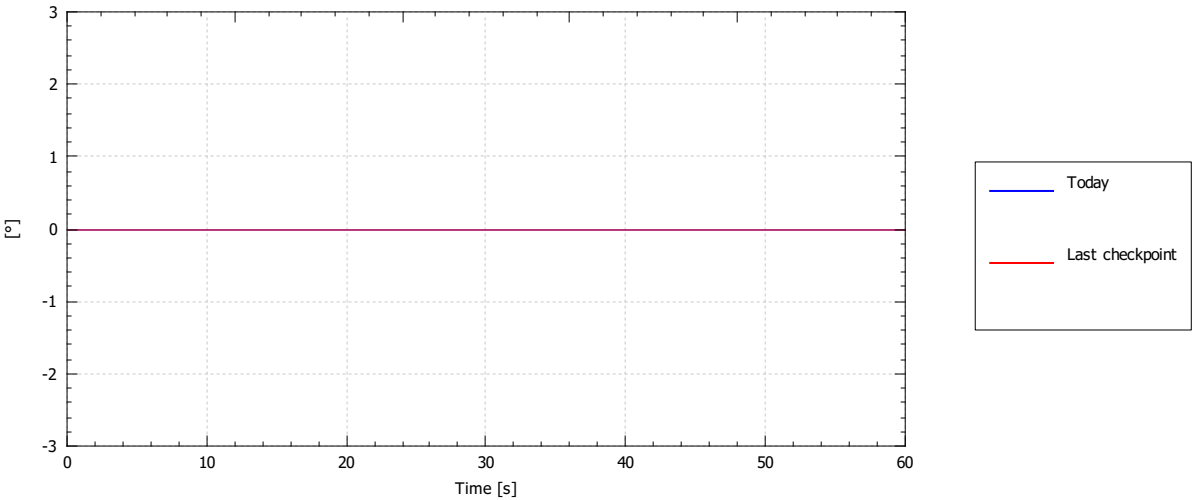
Rotation per timestep



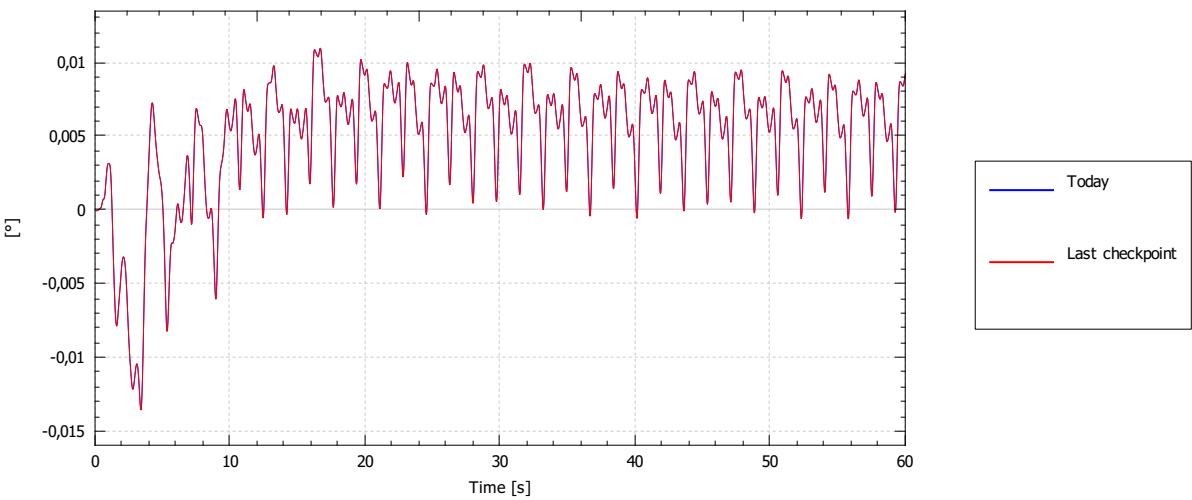
Wind speed at hub, magnitude



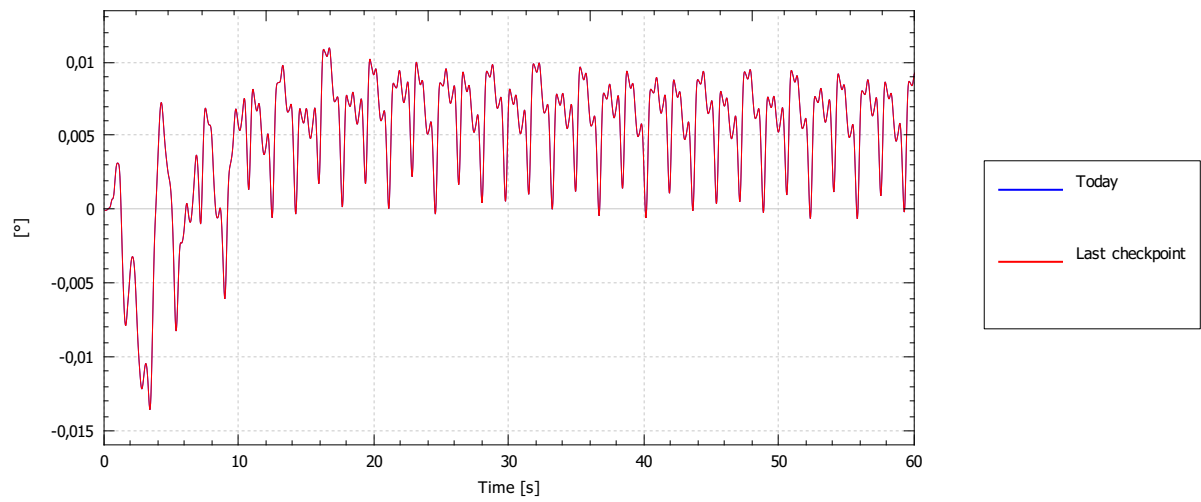
Wind angle at hub



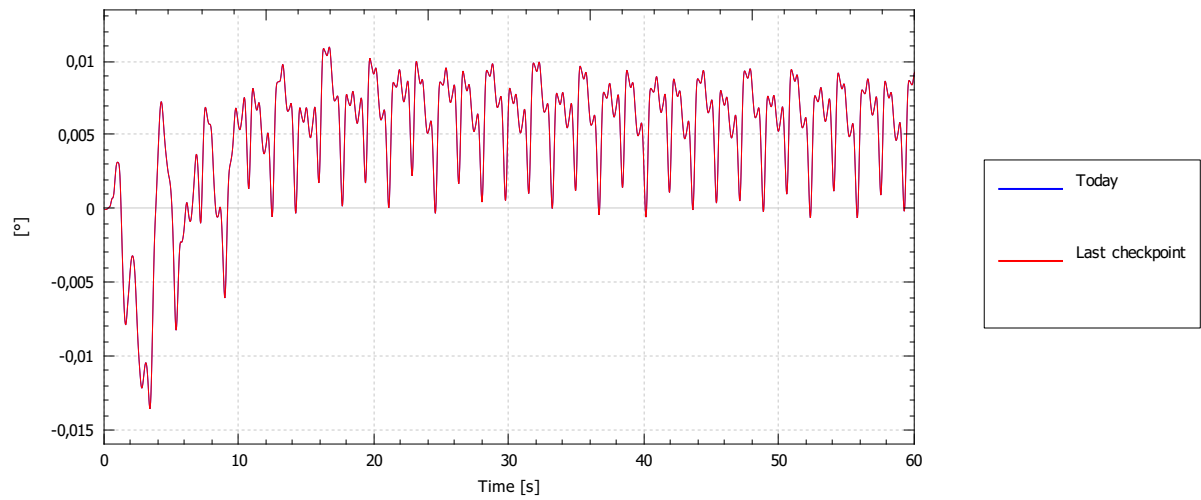
Yaw angle relative to forward



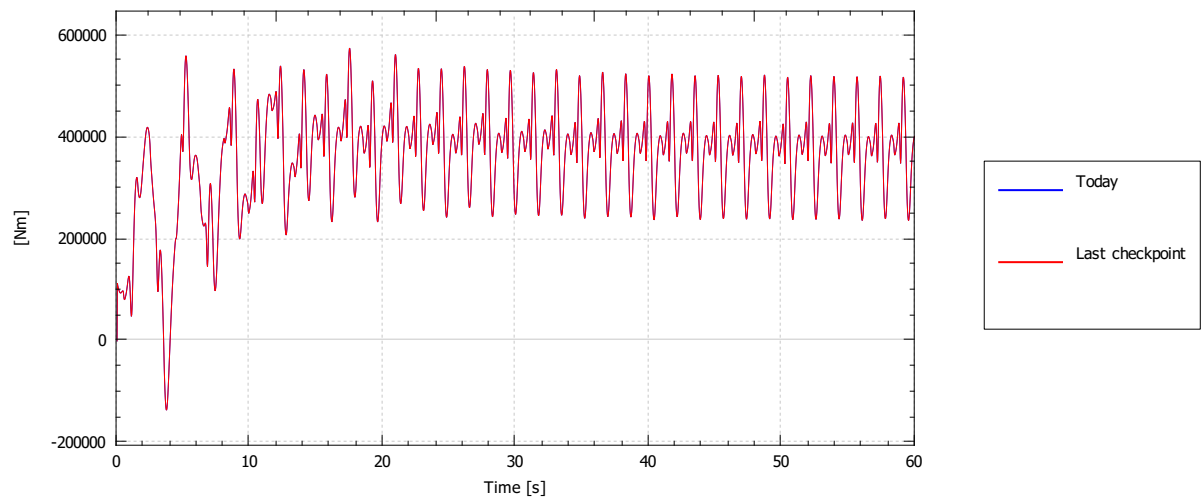
Yaw angle to reference direction



Yaw error

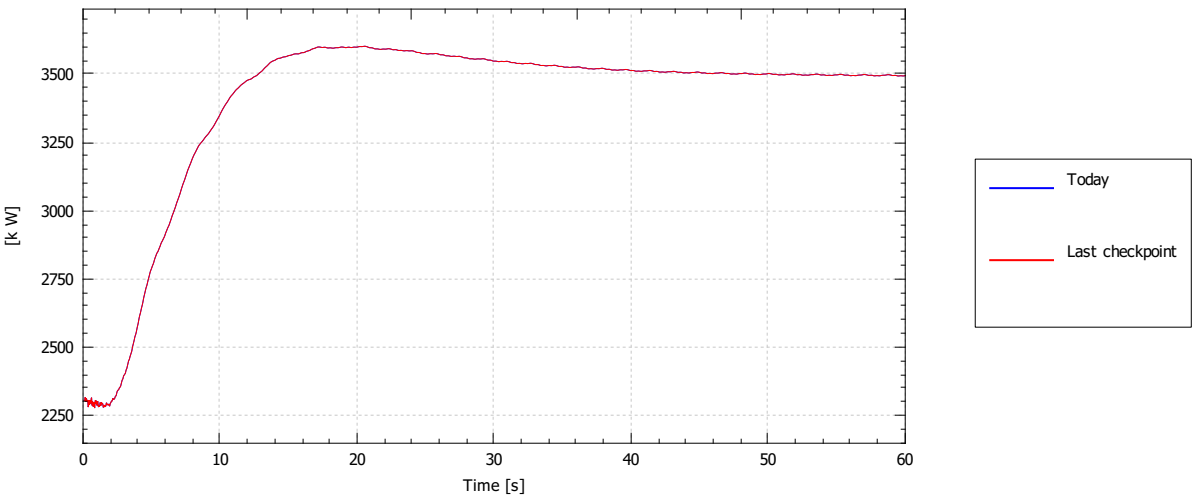


Torque about yaw axis

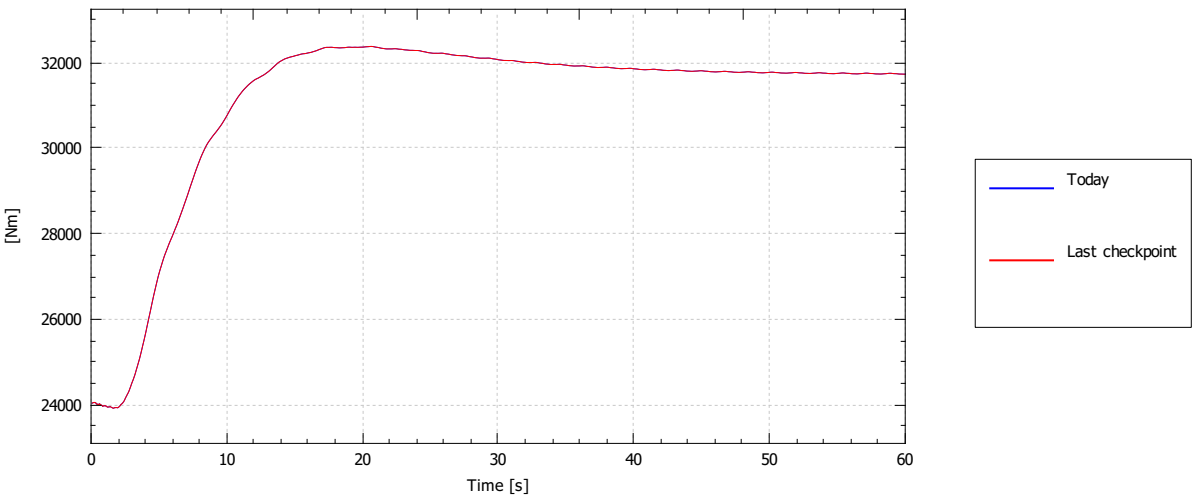


Generator

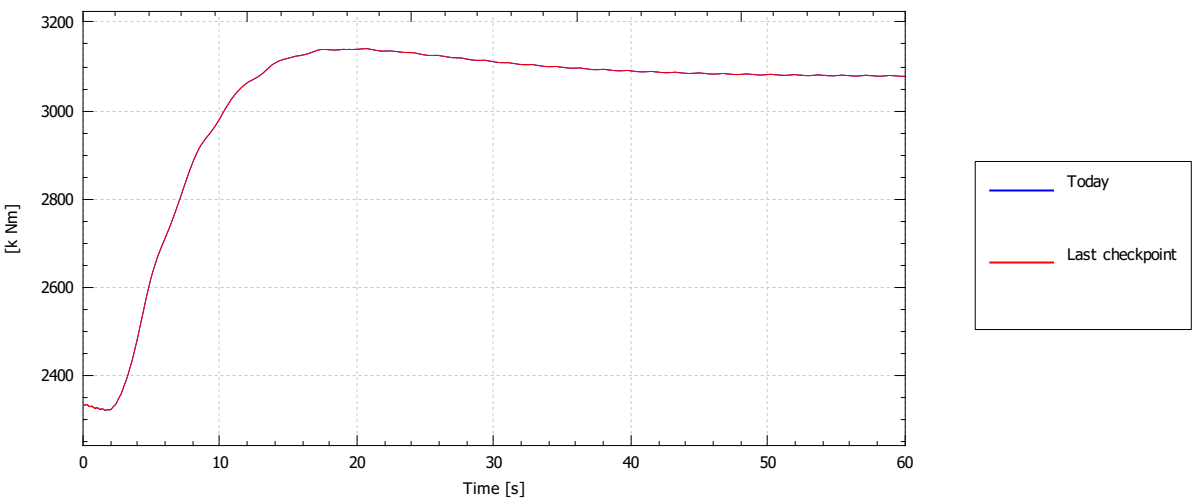
Power (electrical)



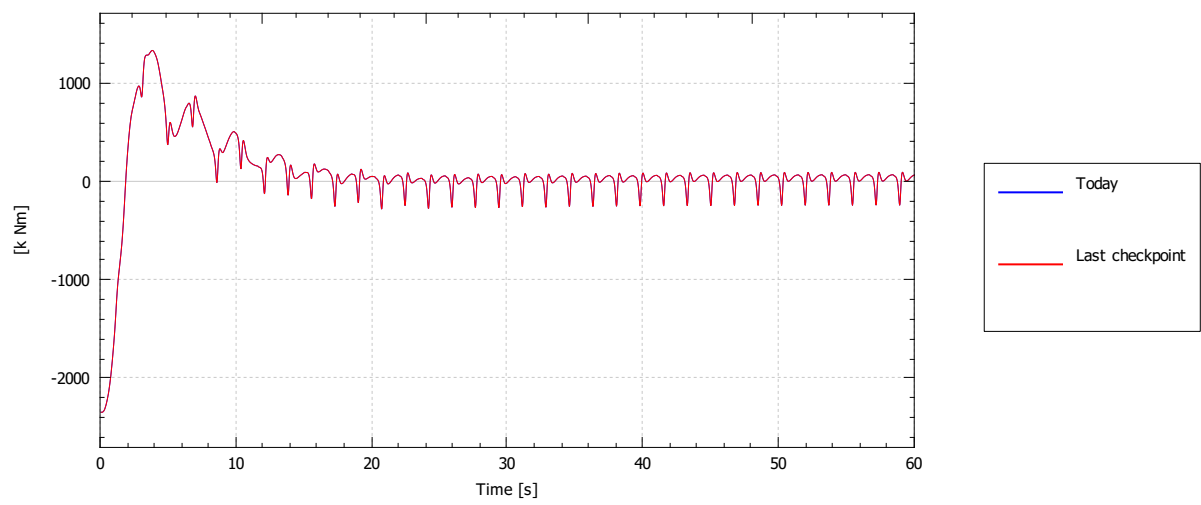
Torque



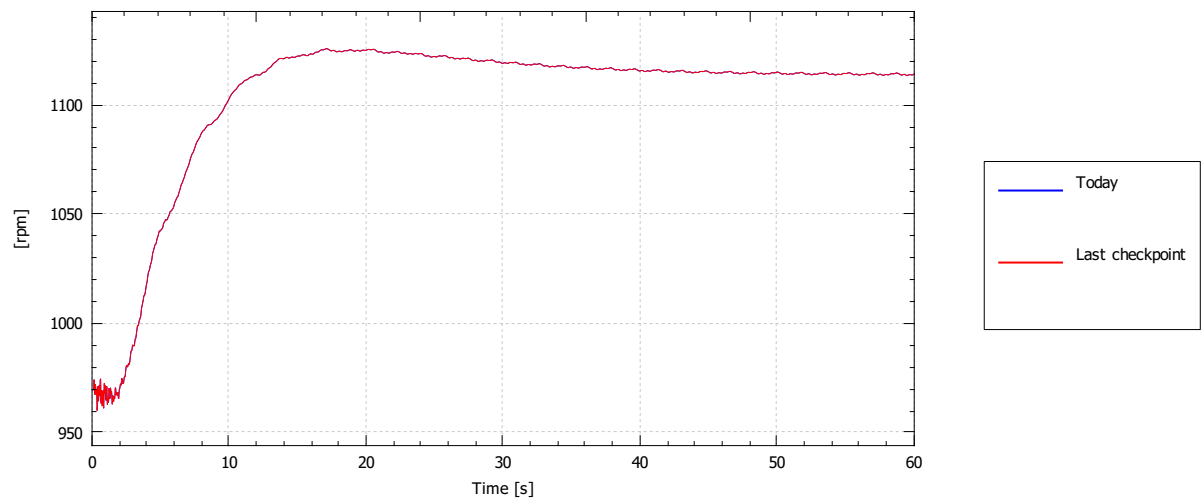
Torque on main shaft



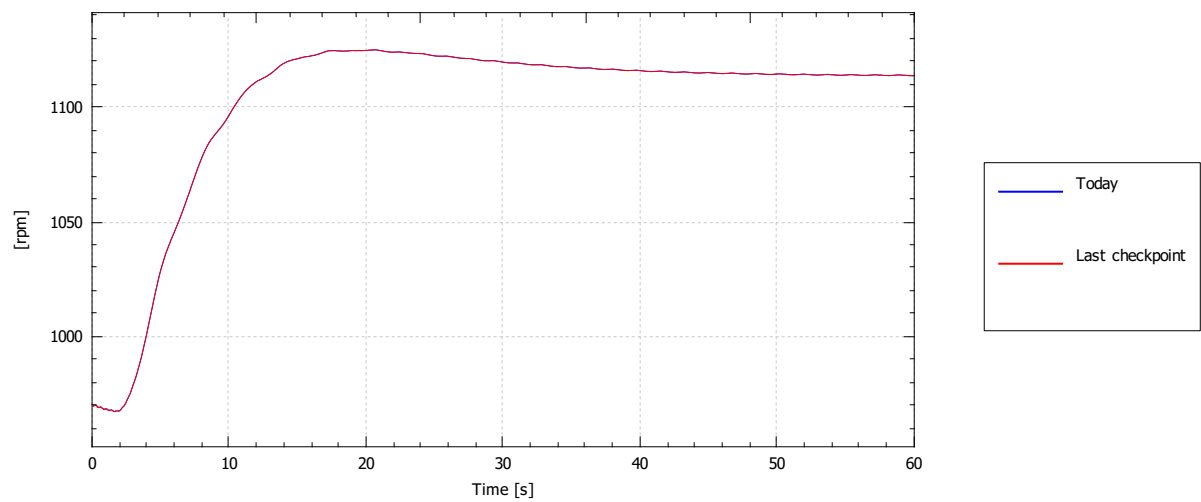
Torque diff. on main shaft



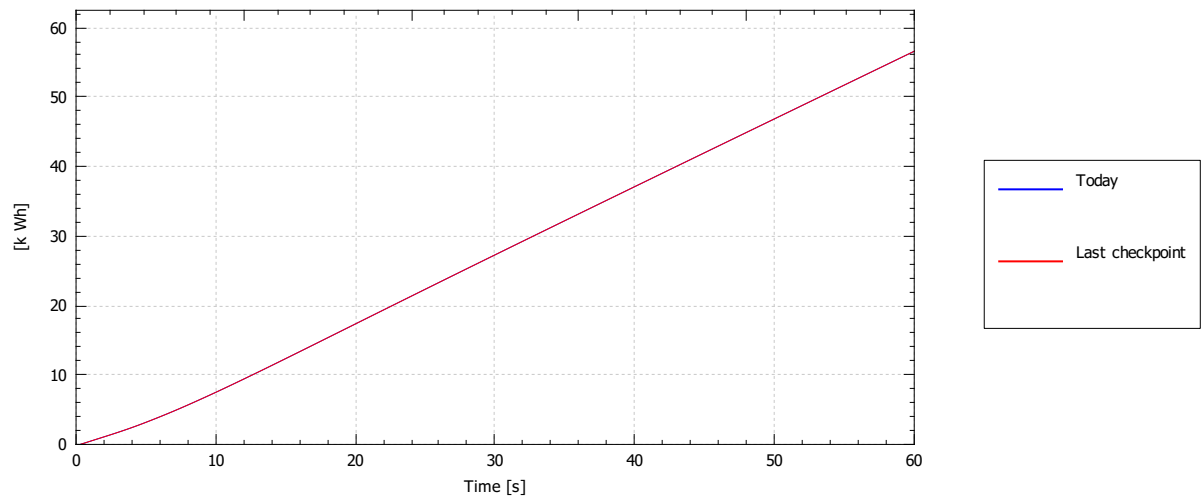
RPM



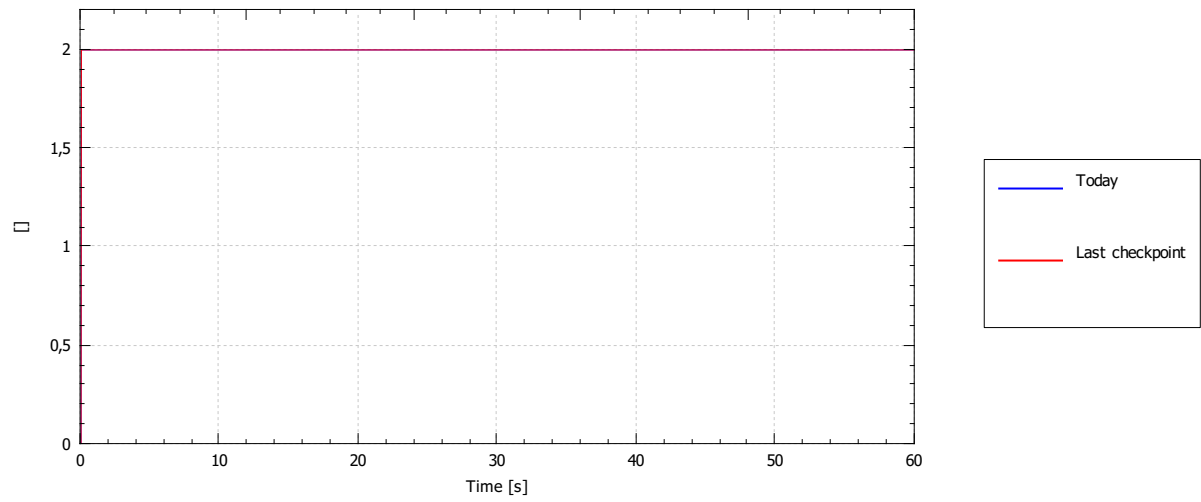
Filtered RPM



Electricity production

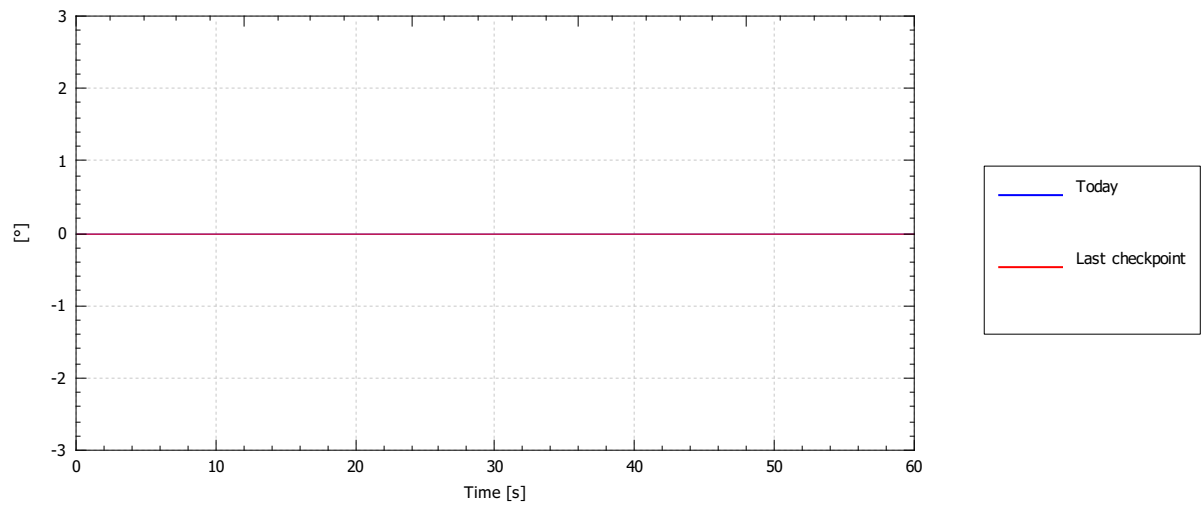


Region

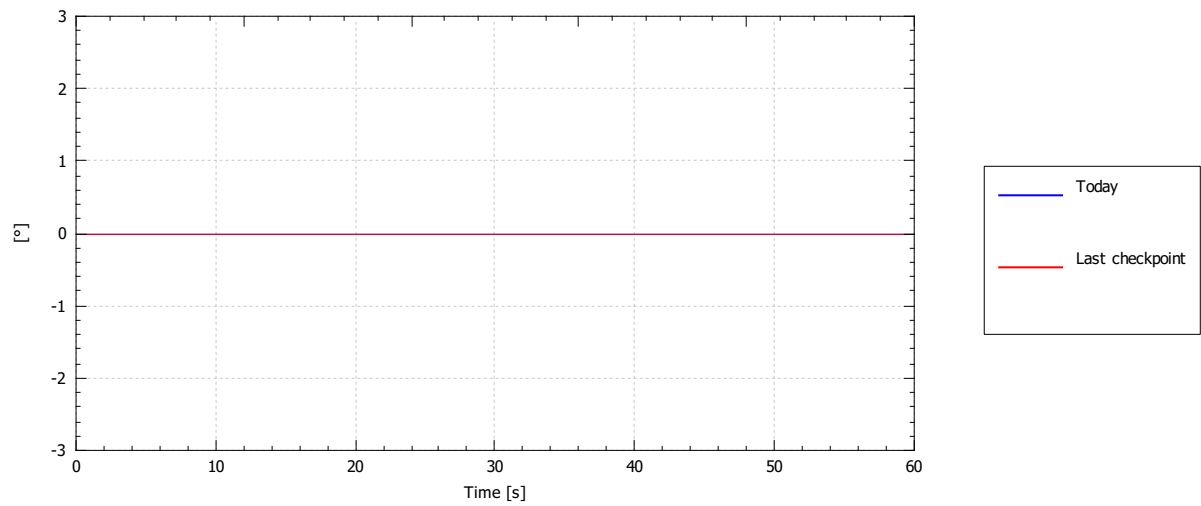


Demanded pitch controller

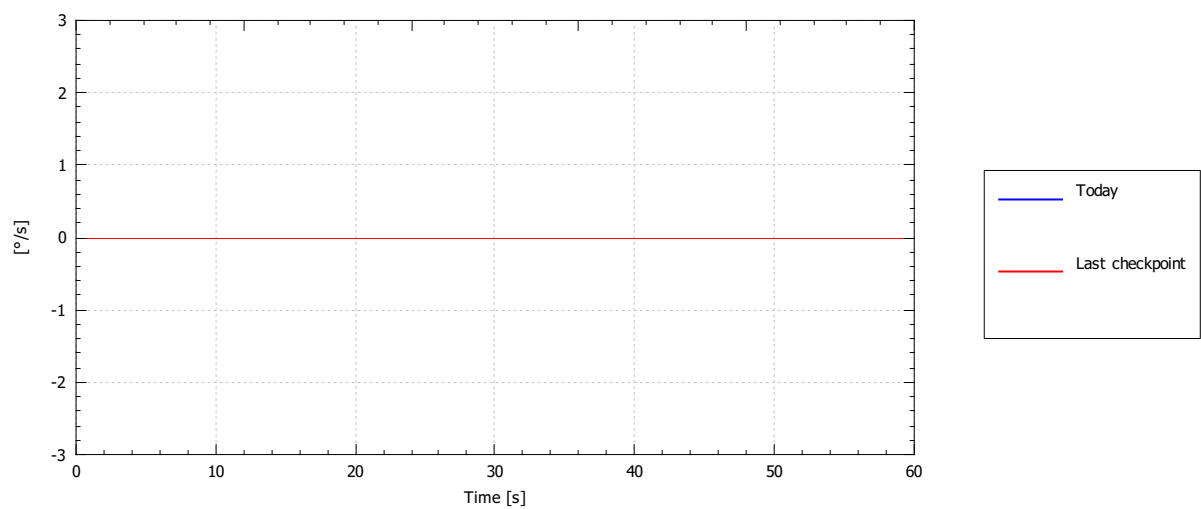
Demanded collective pitch angle



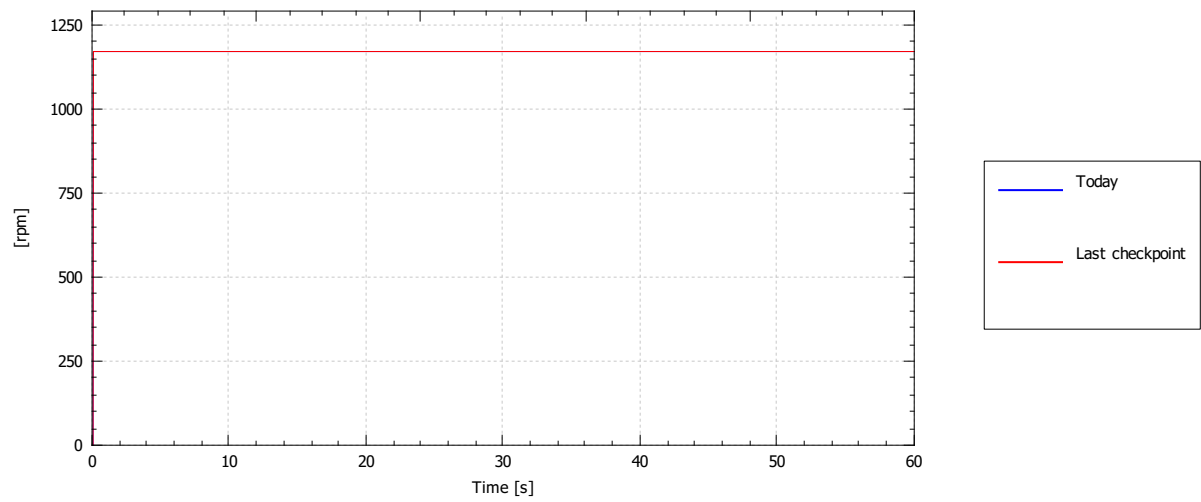
Cumulative demanded collective pitch angle



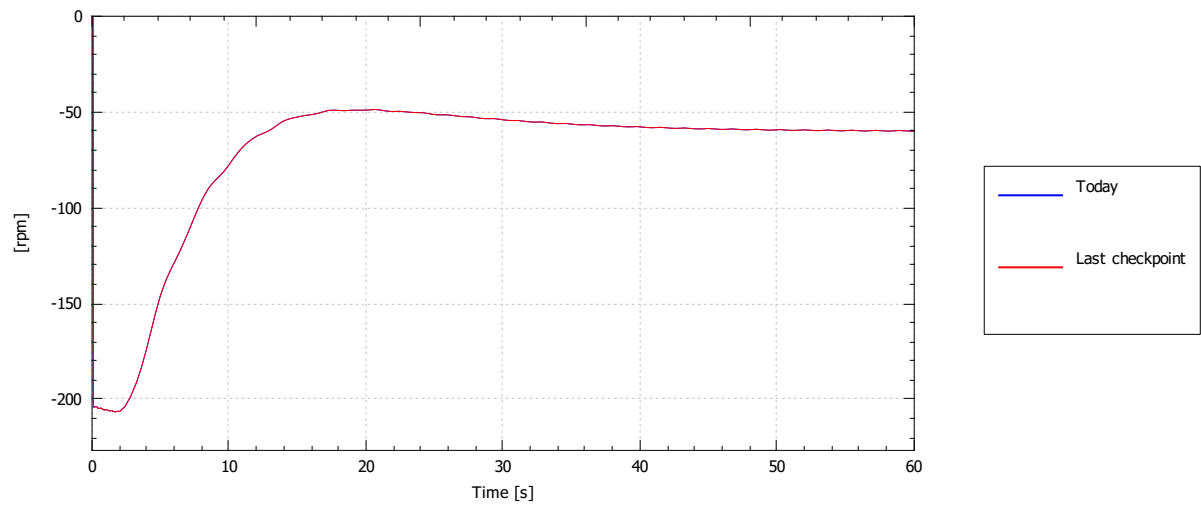
Demanded collective pitch angle rate



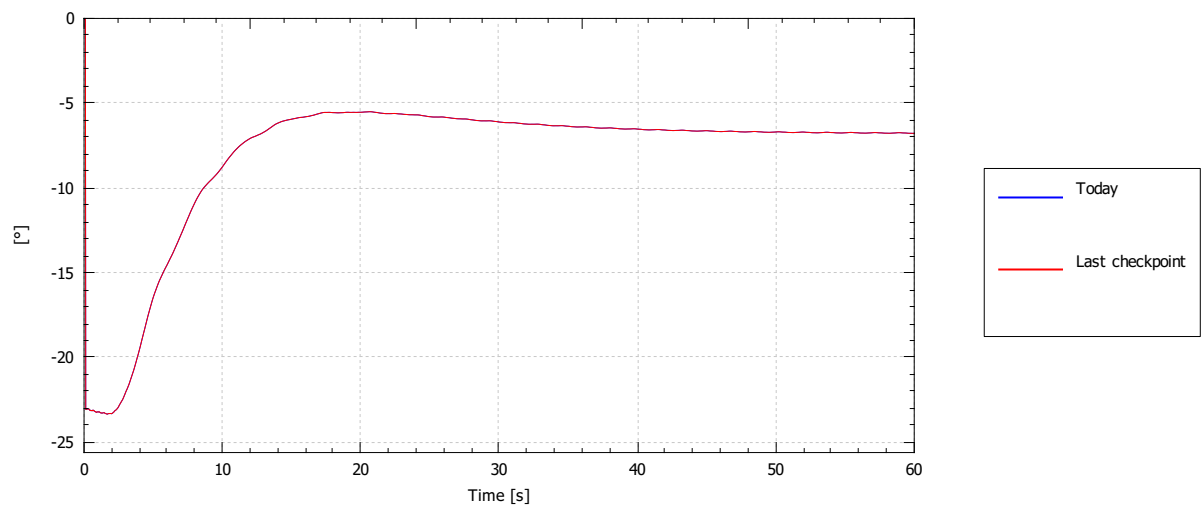
Set point



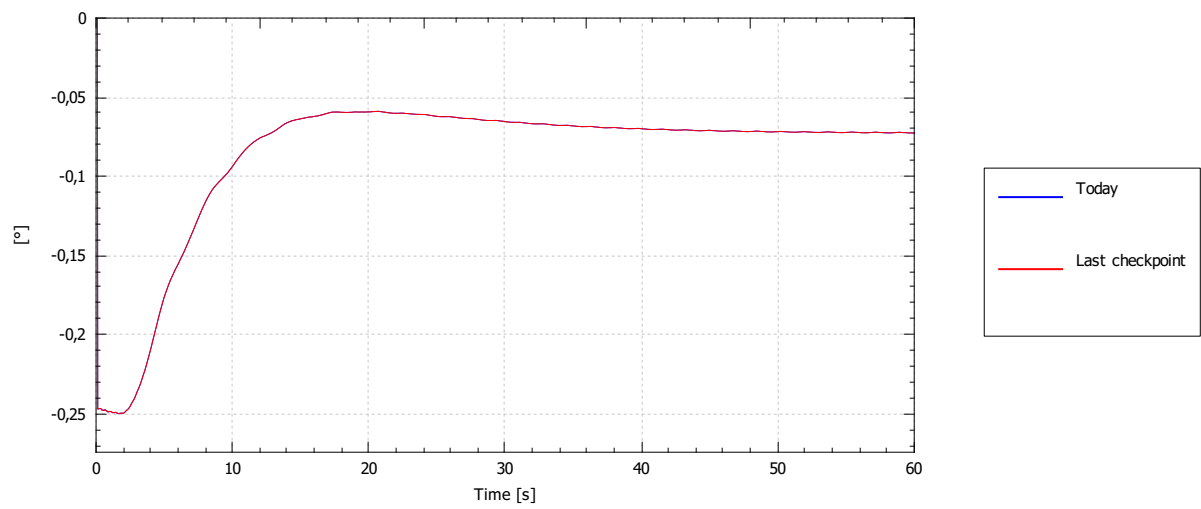
RPM error



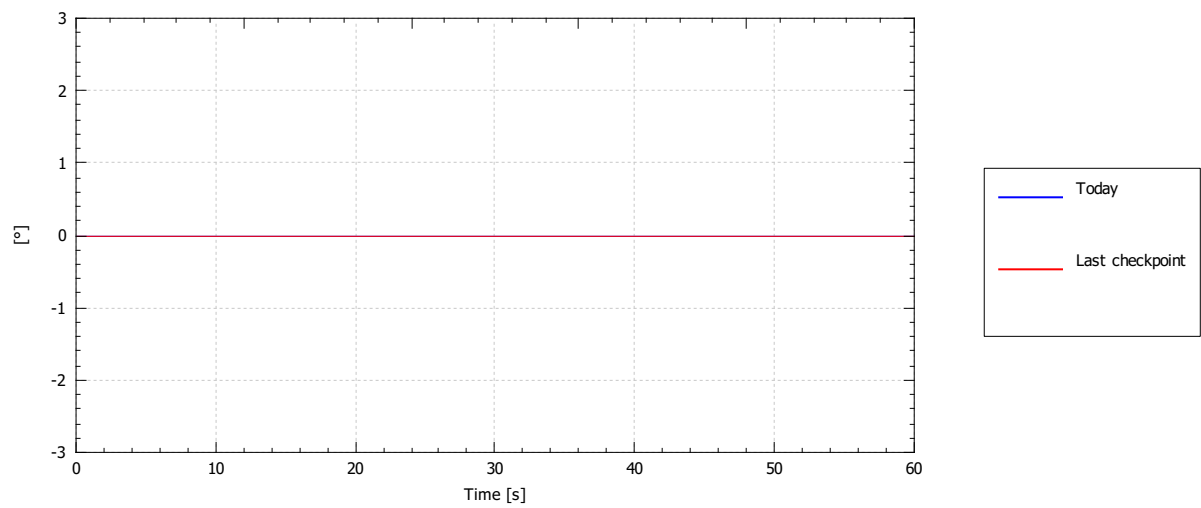
P term



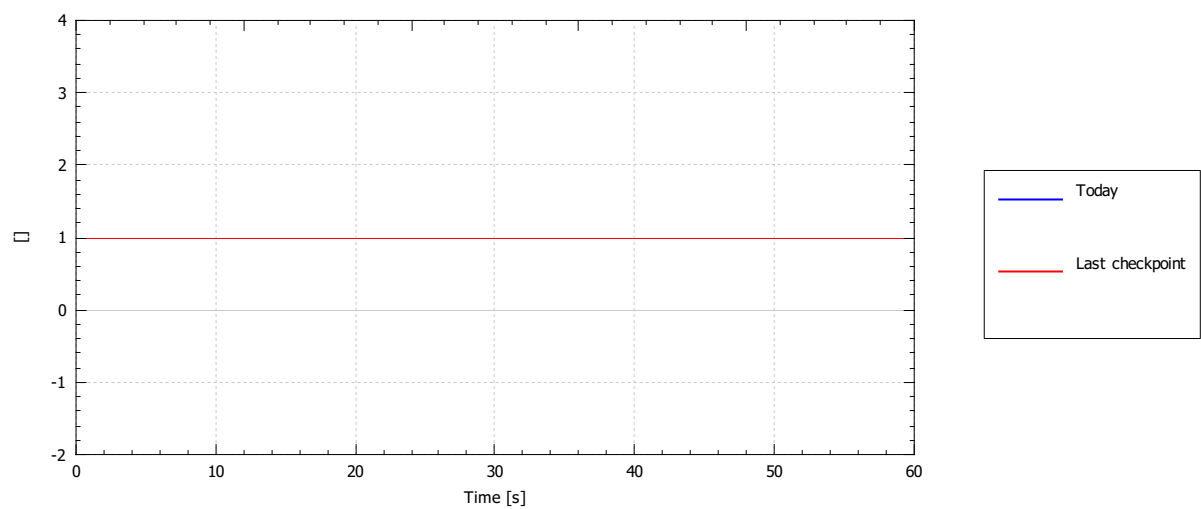
I term

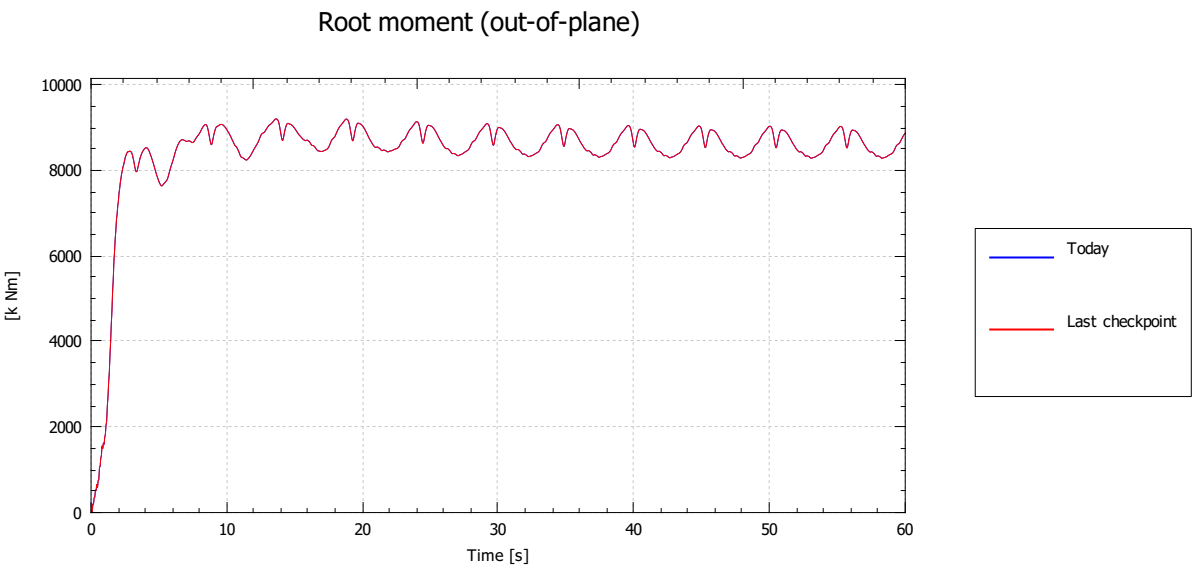
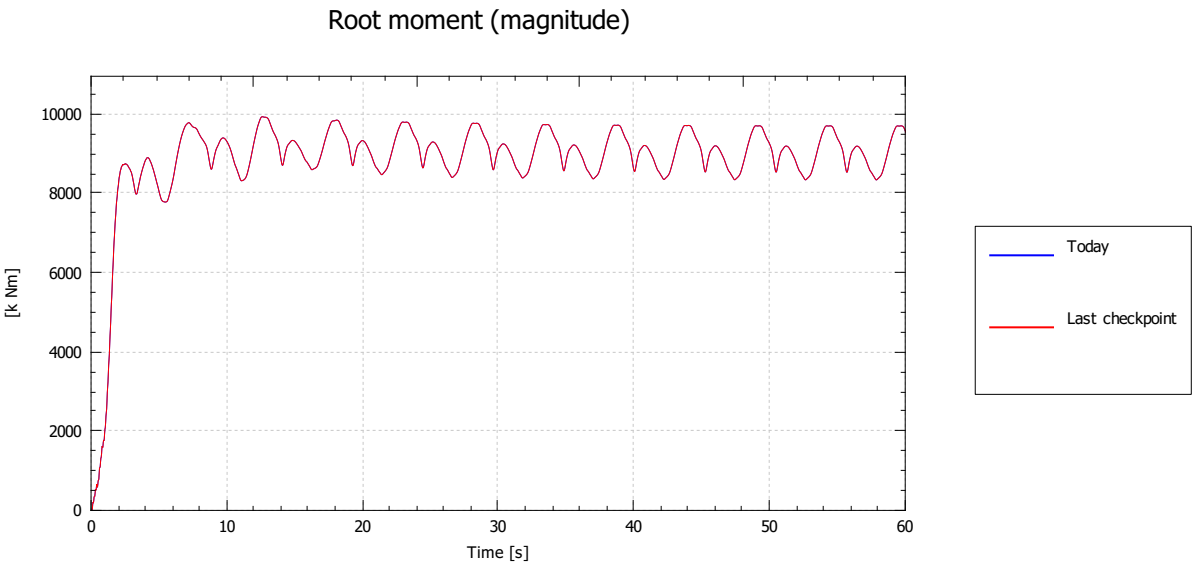
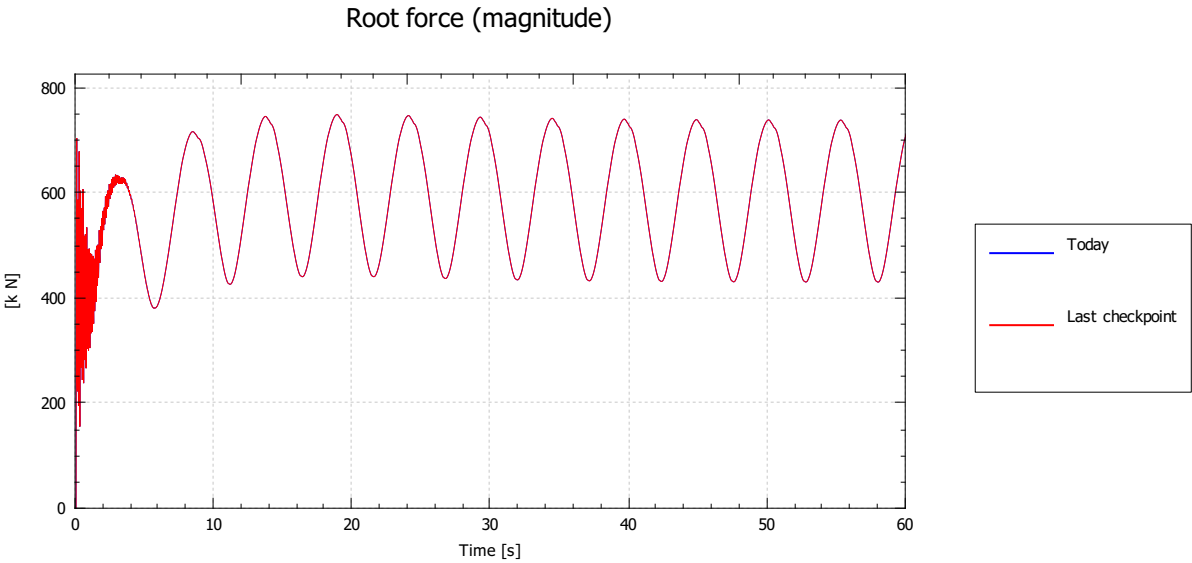


D term

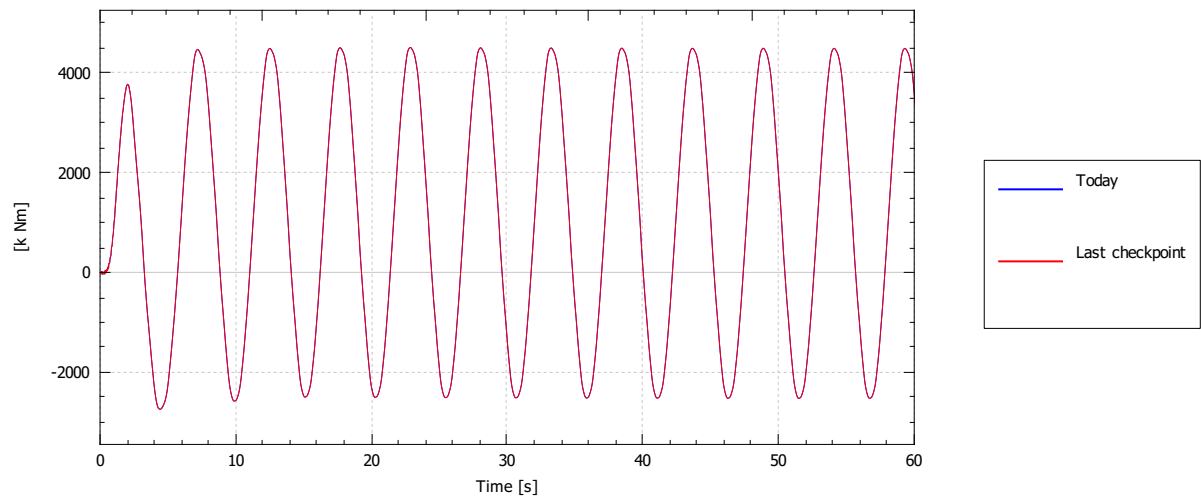


Gain scheduling factor

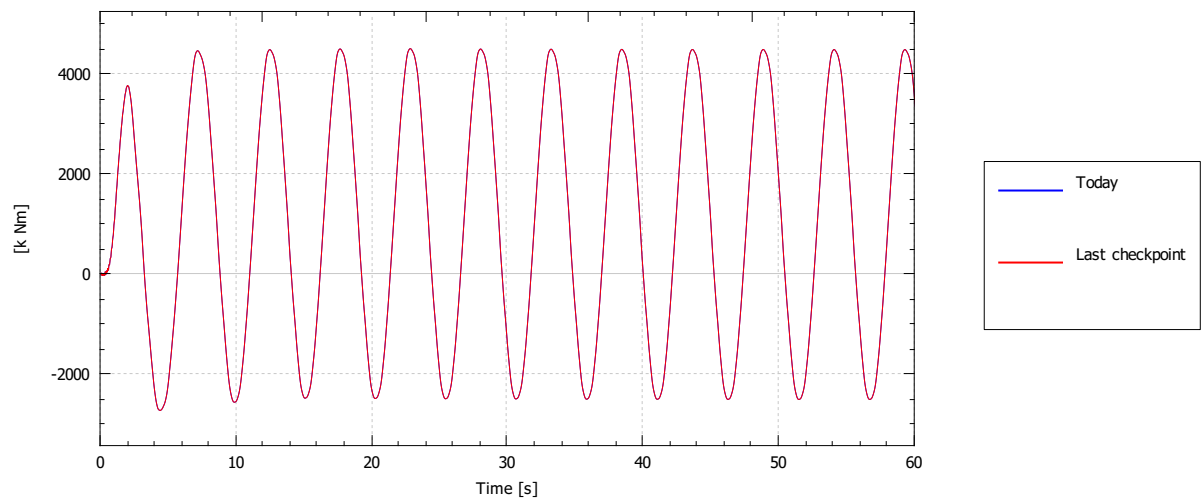




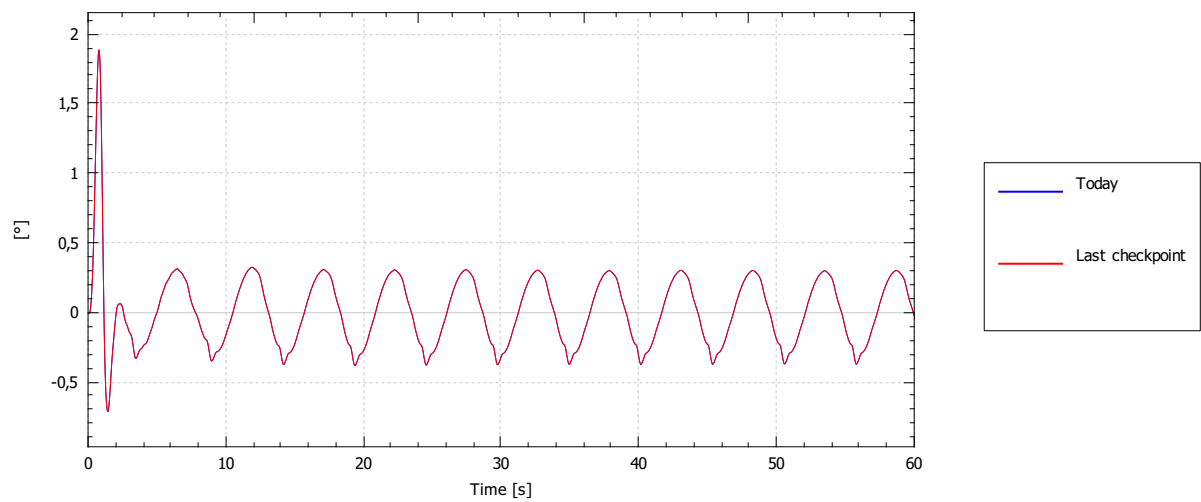
Root moment (in-plane)



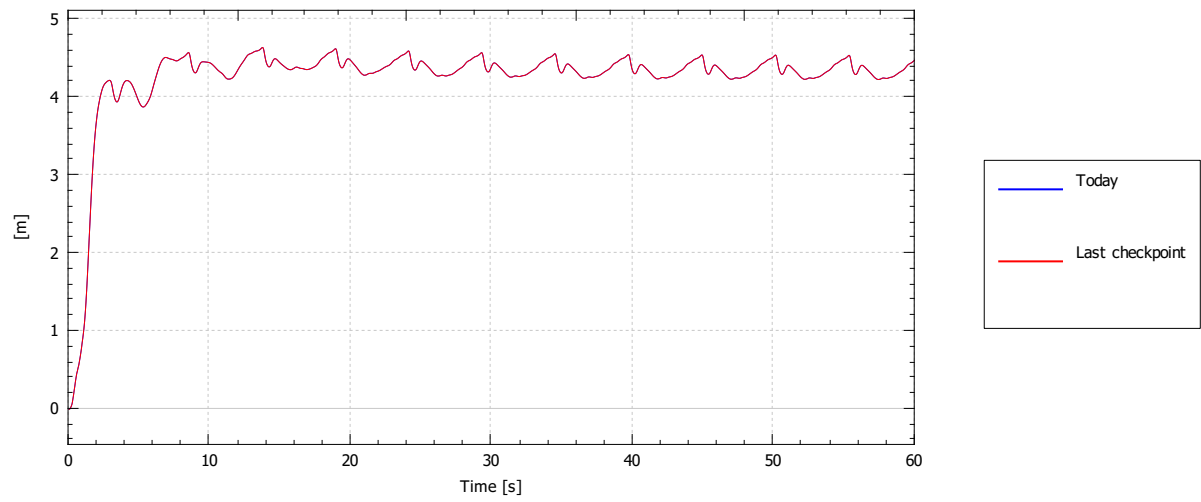
Root moment about shaft



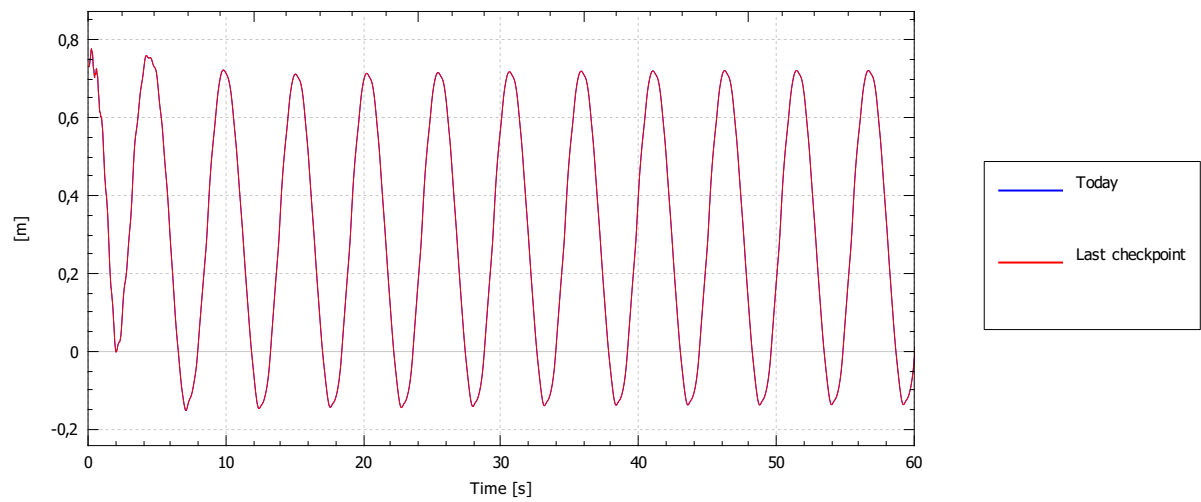
Pitch angle



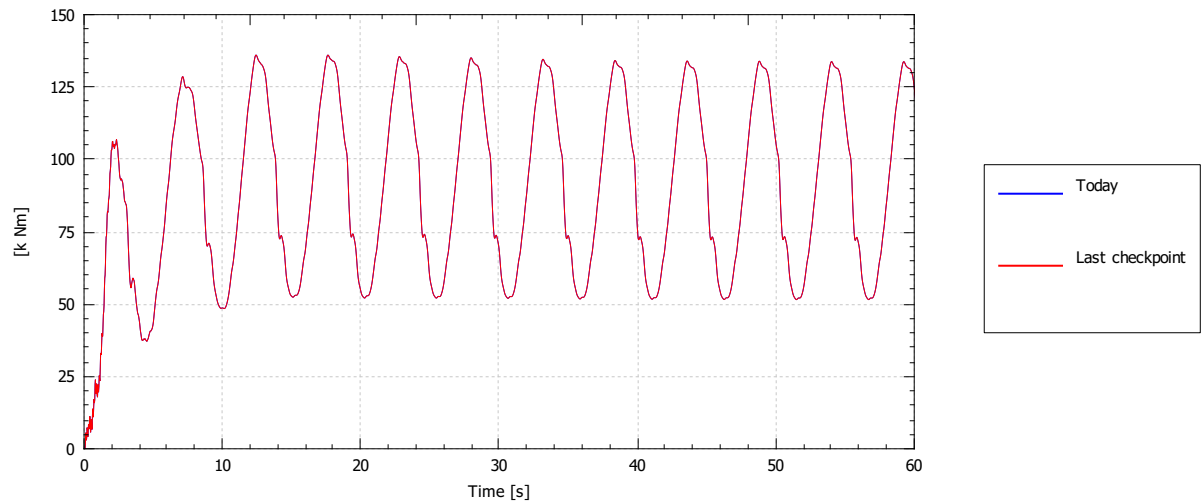
Tip deflection (out-of-plane)

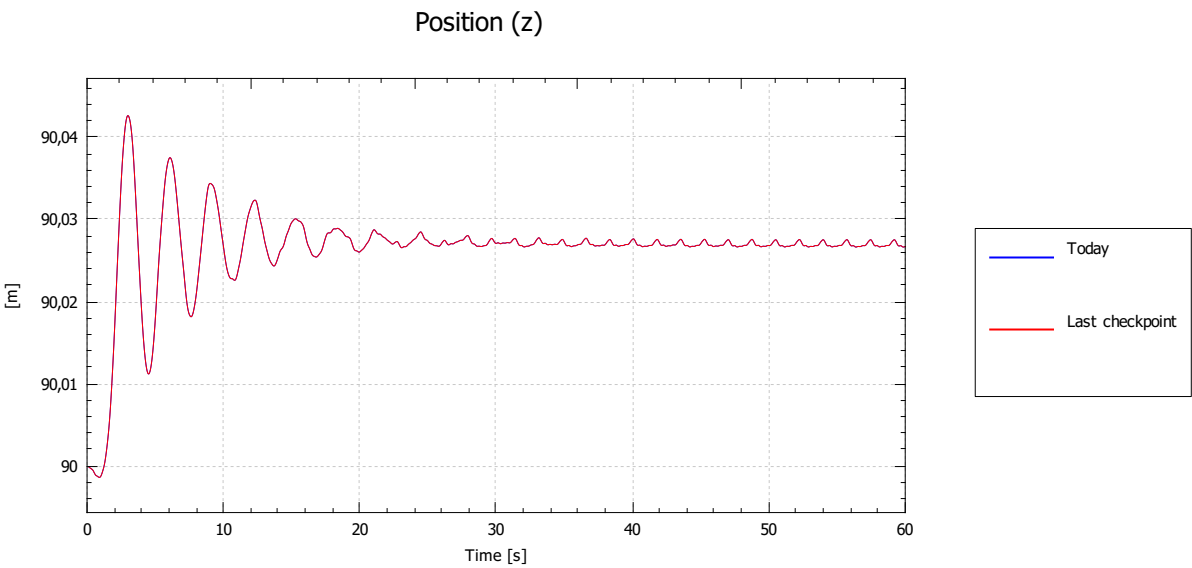
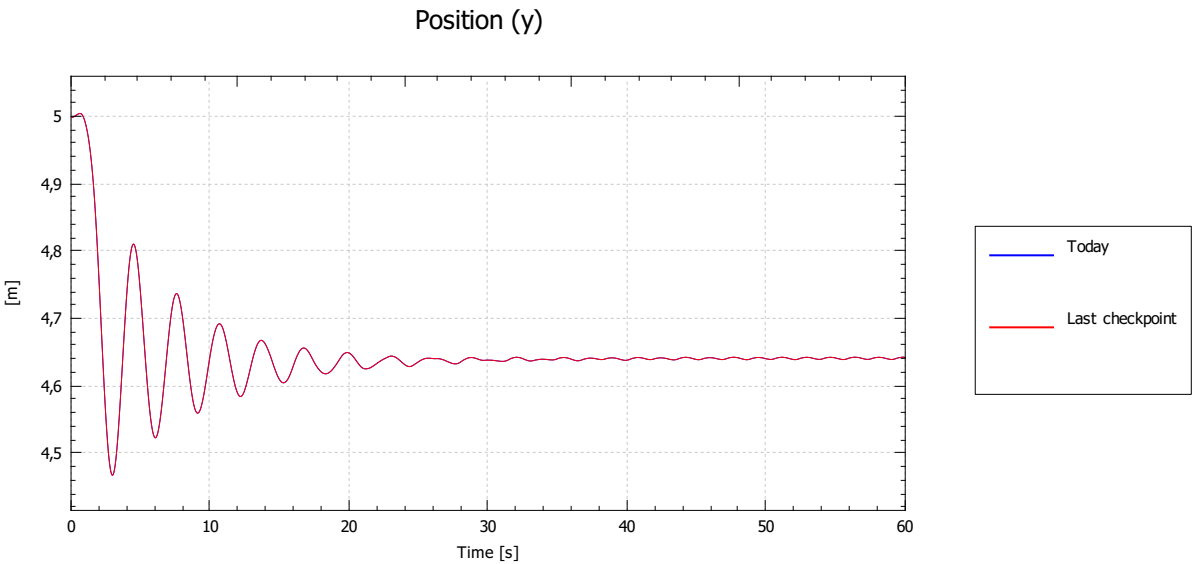
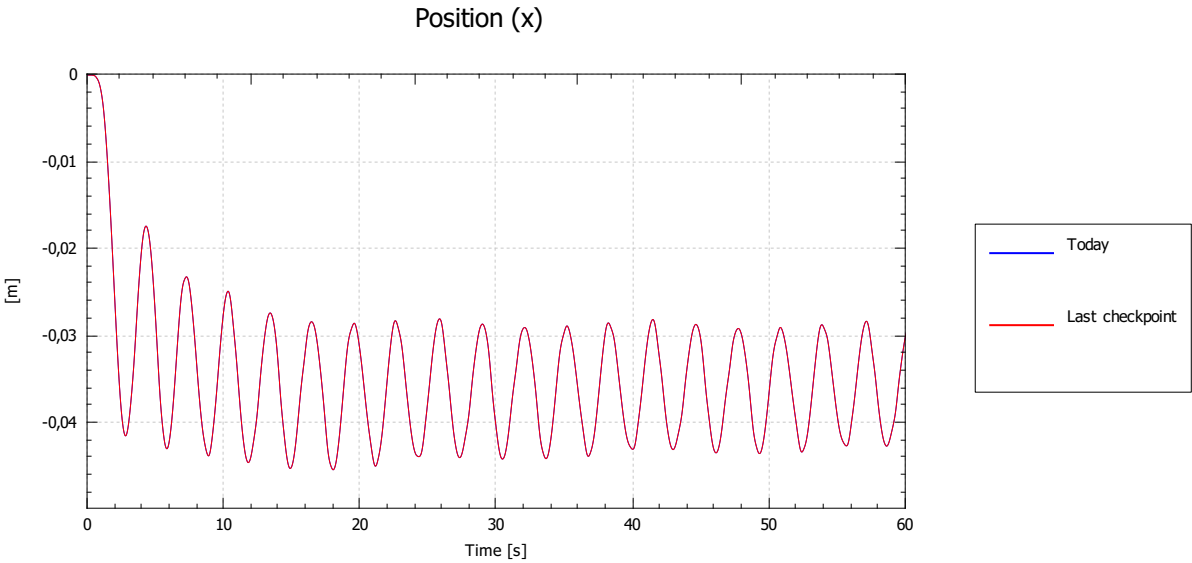


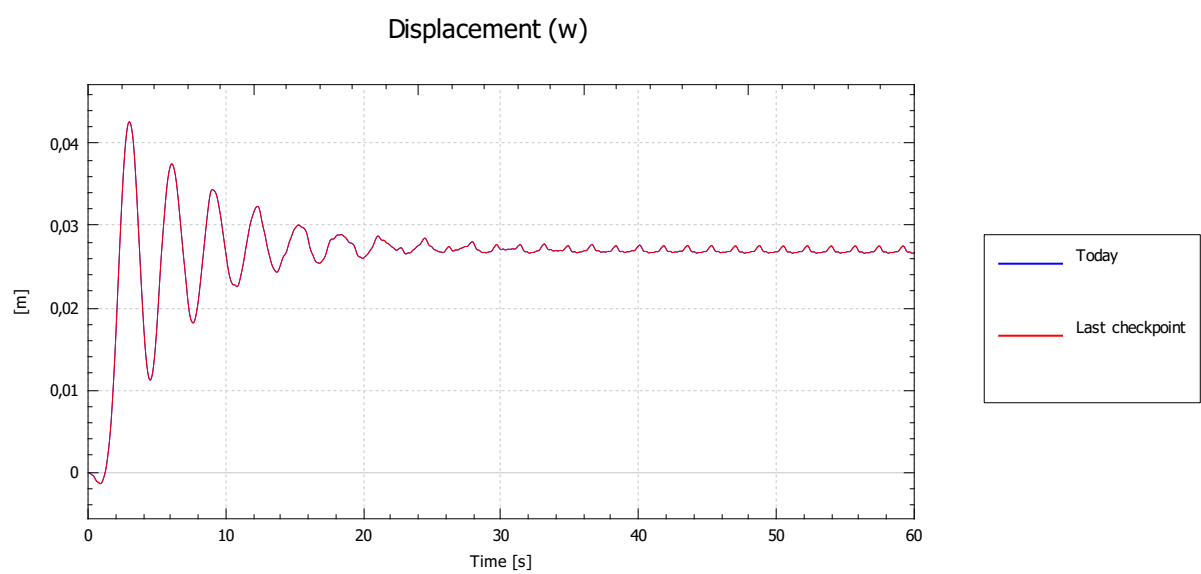
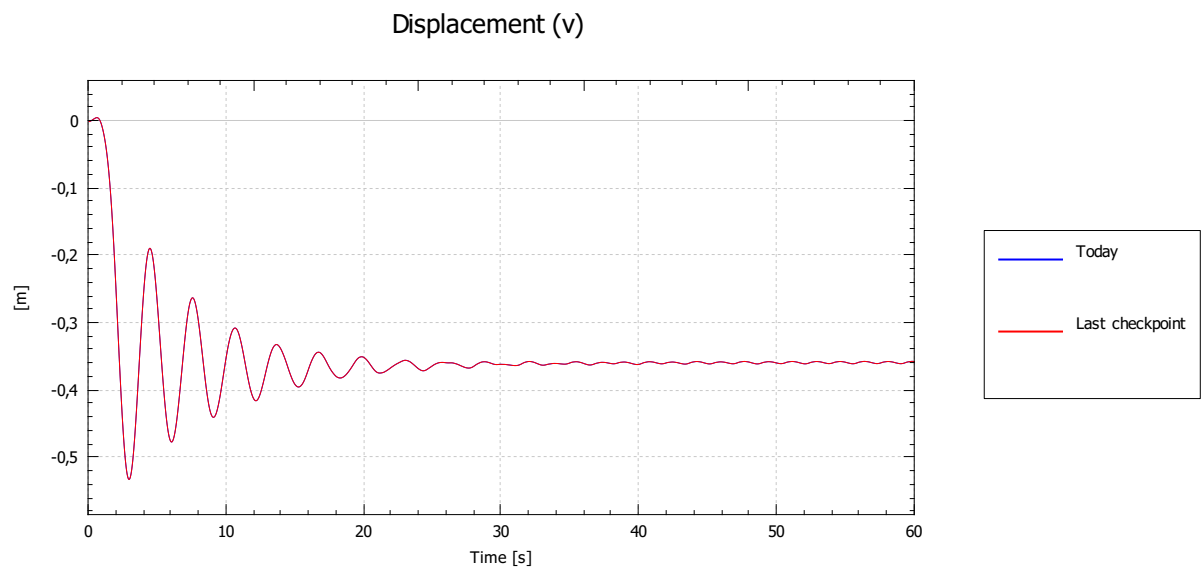
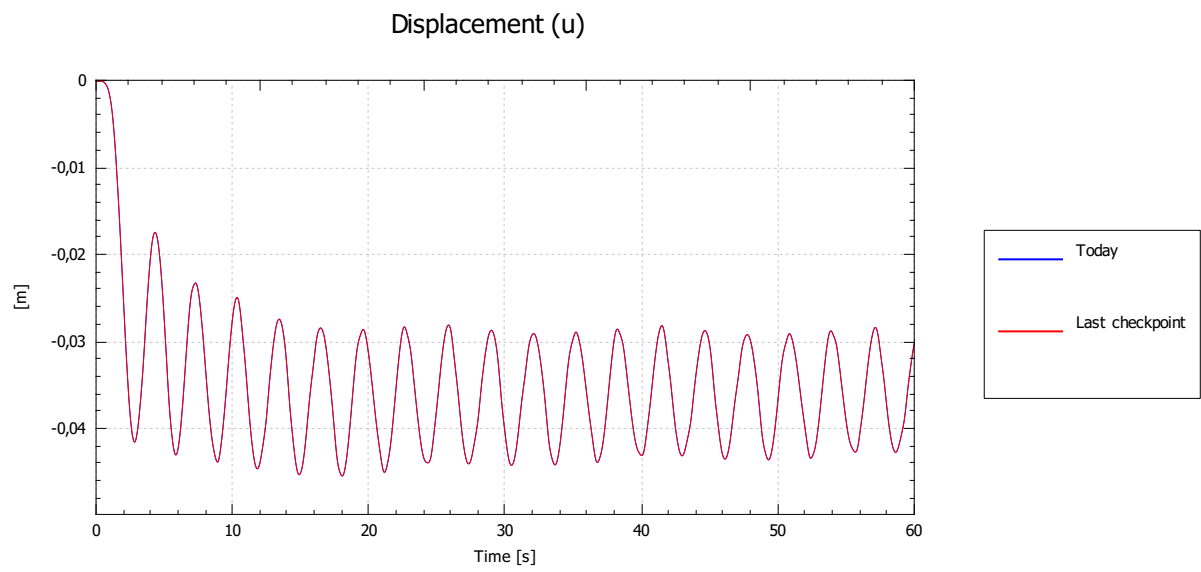
Tip deflection (in-plane)



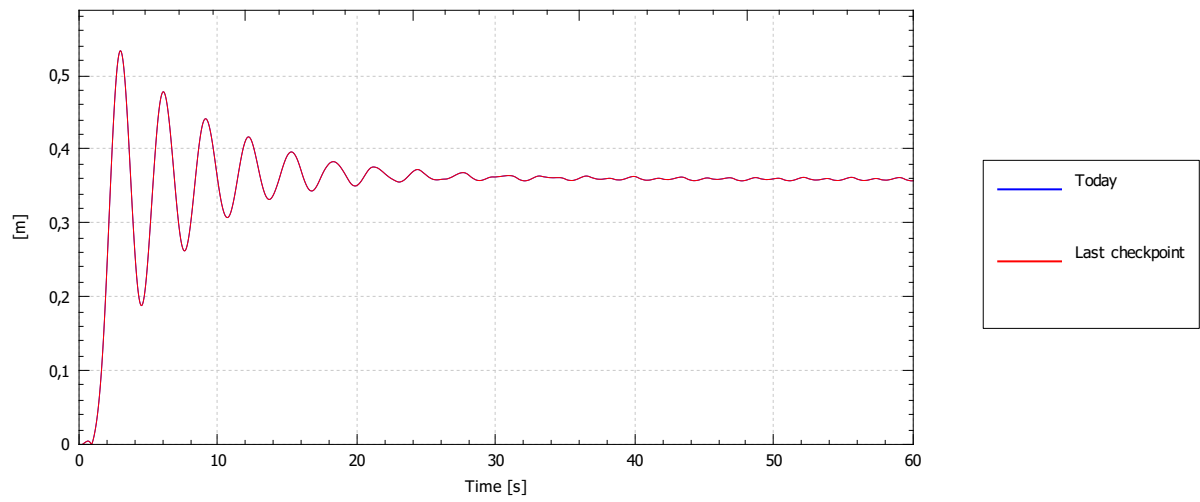
Root torque



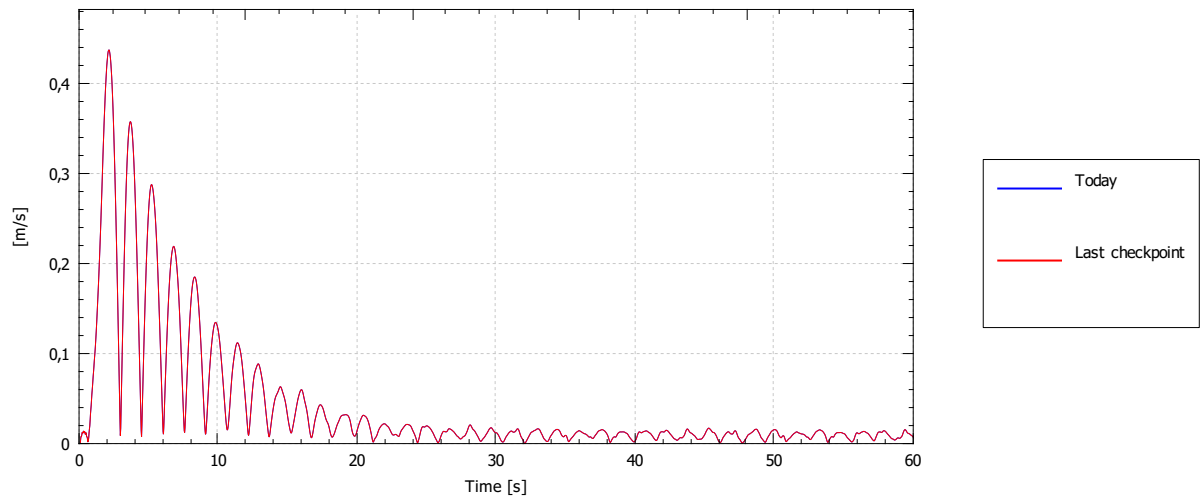




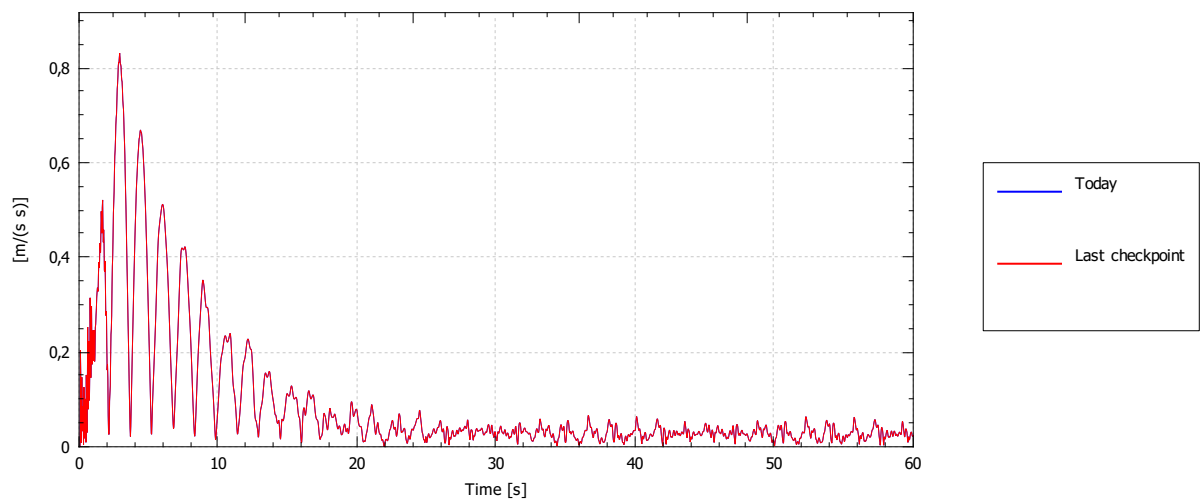
Displacement magnitude



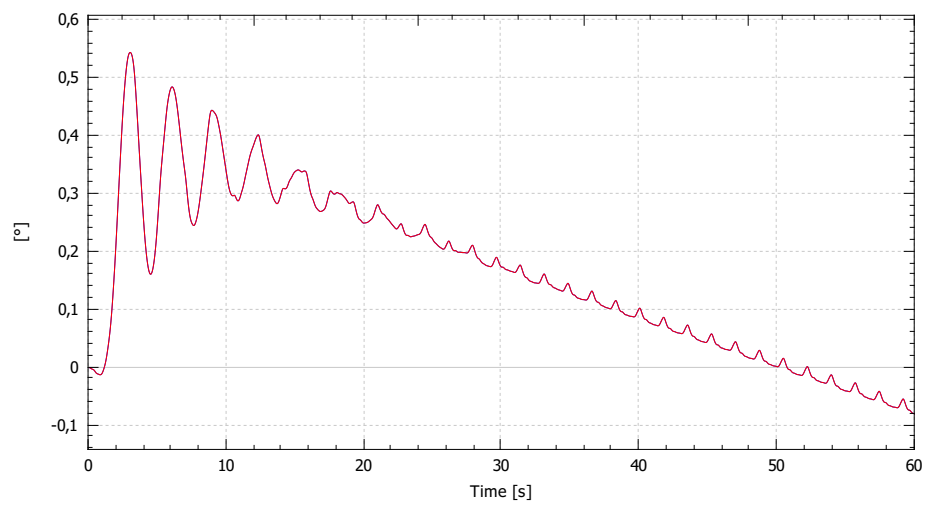
Speed



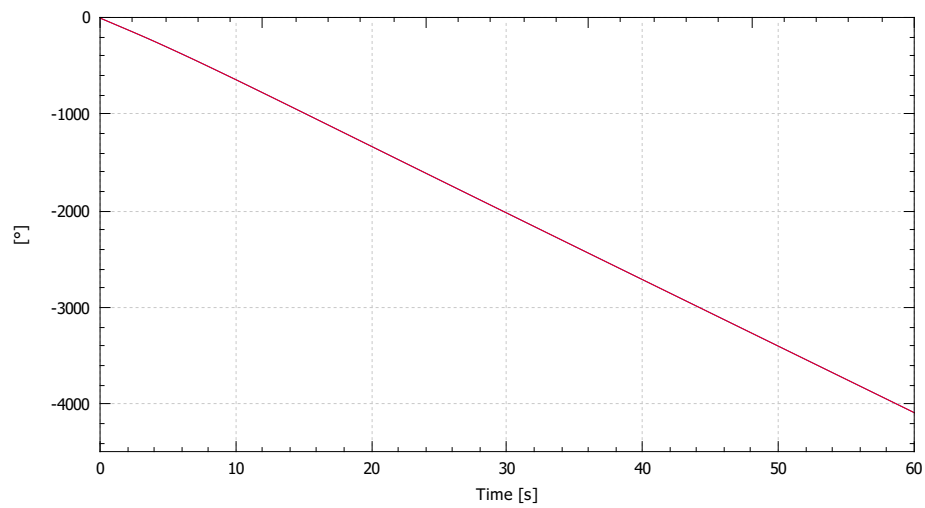
Acceleration, magnitude



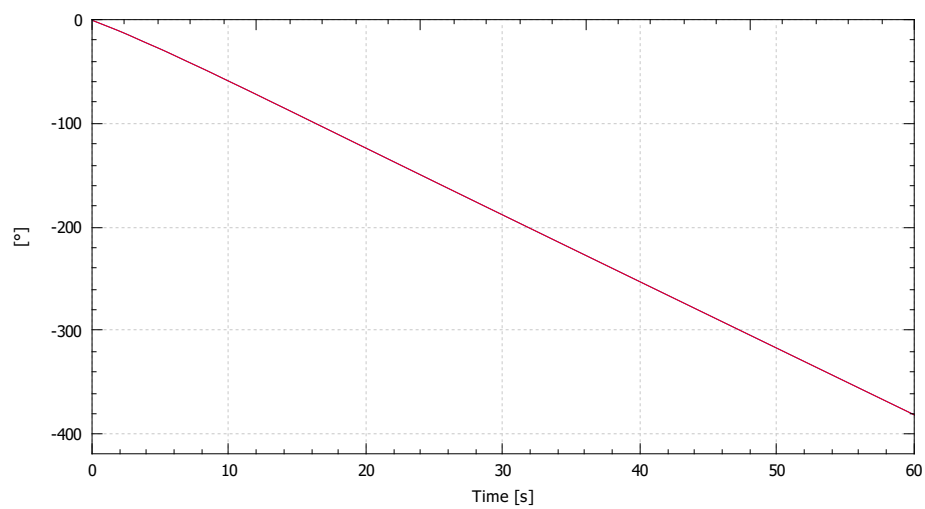
Rotational displacement (ru)



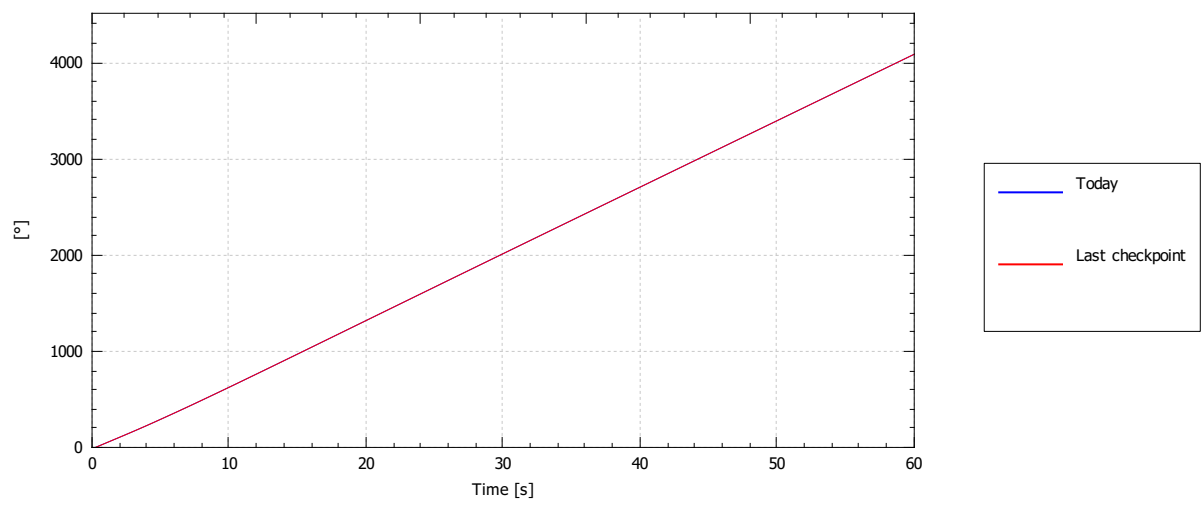
Rotational displacement (rv)



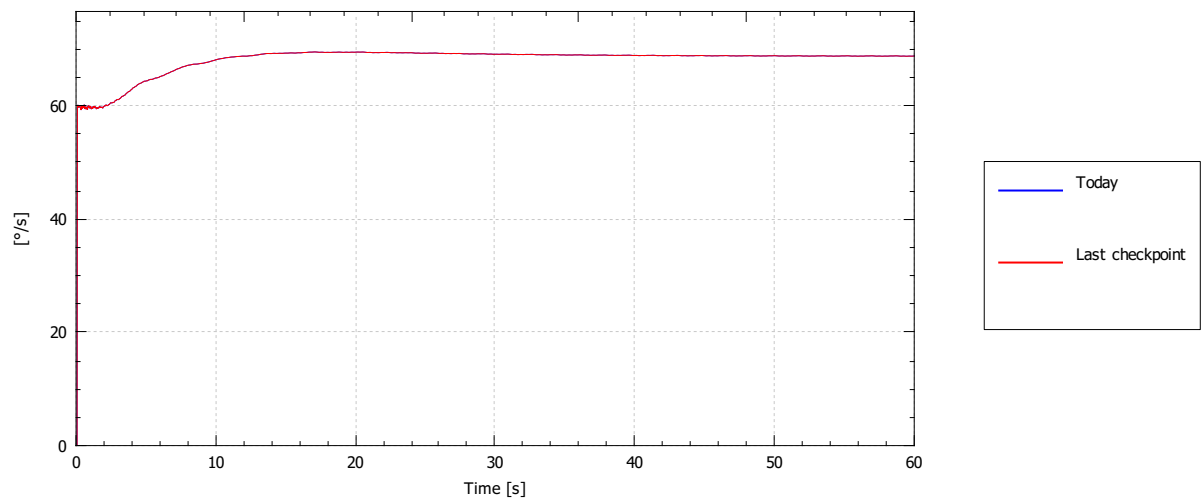
Rotational displacement (rw)



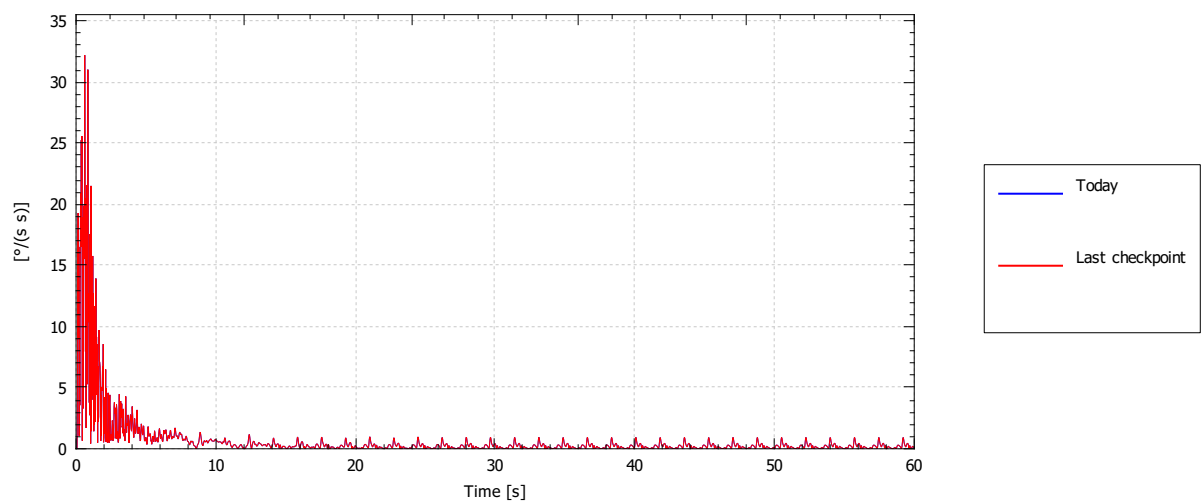
Rotational displacement magnitude



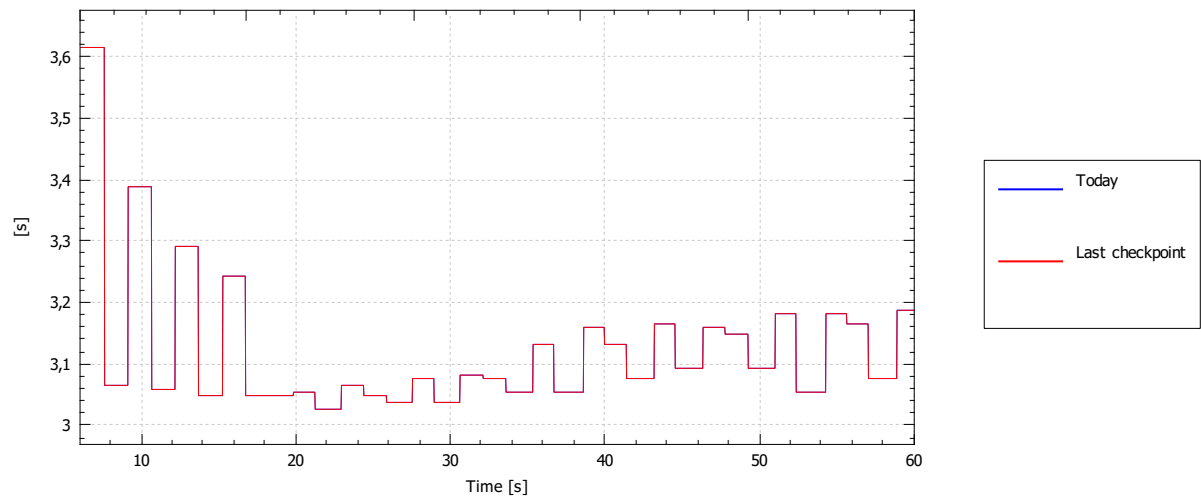
Rotational speed



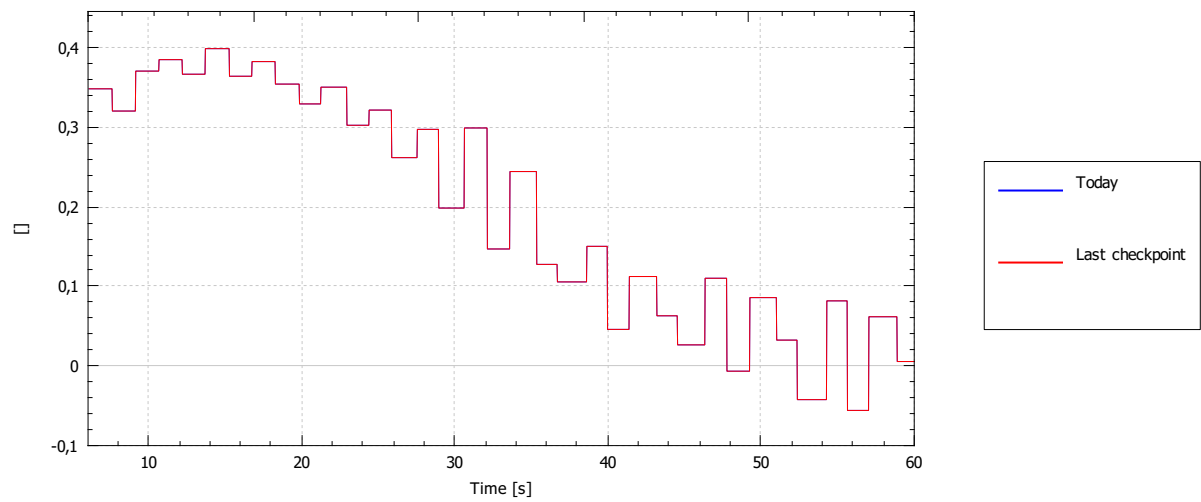
Rotational acceleration mag



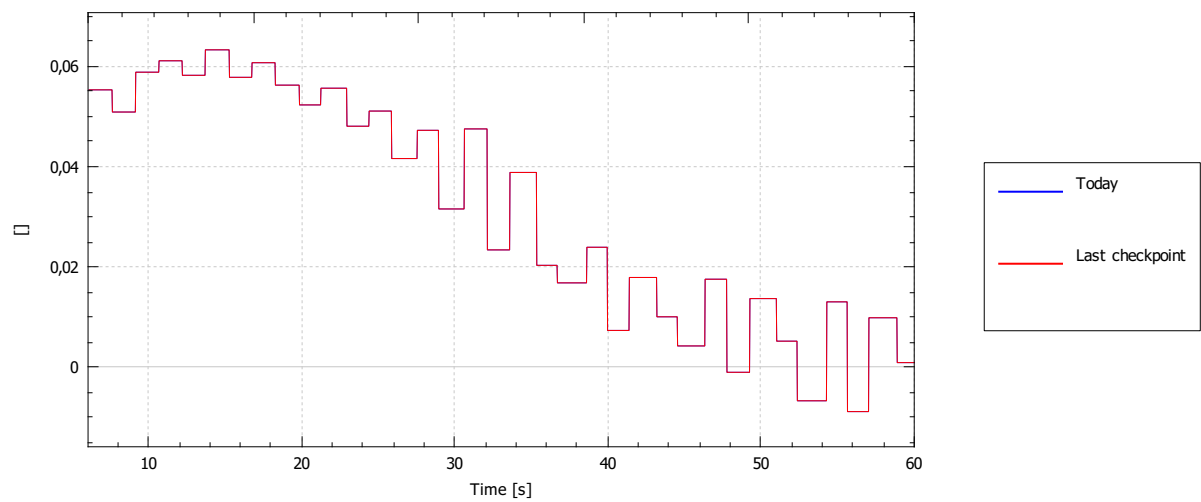
Displacement period



Displacement logarithmic decrement

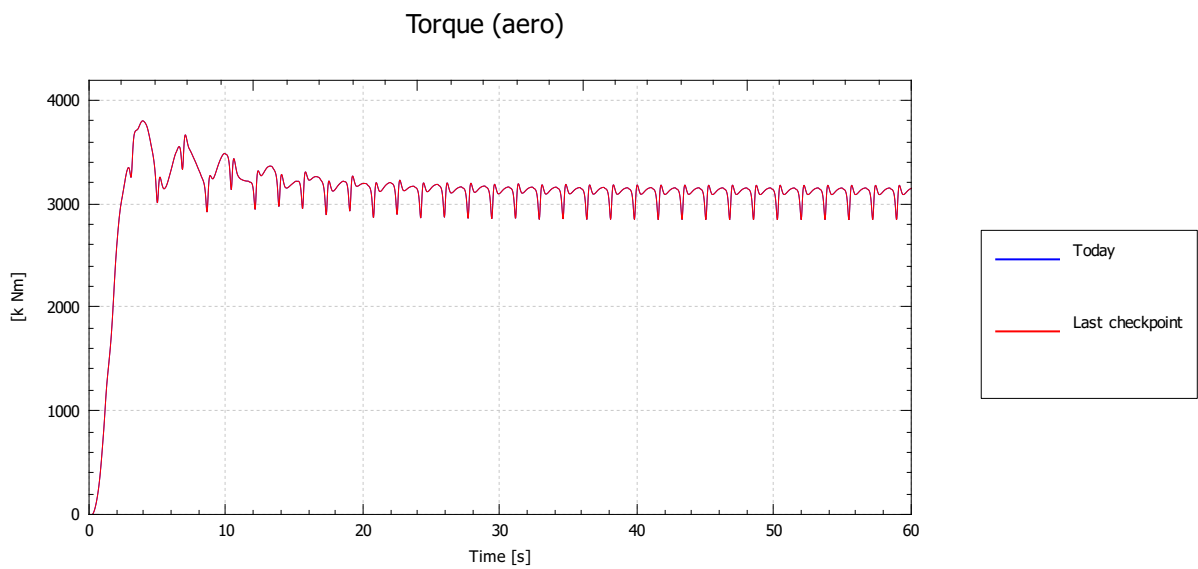
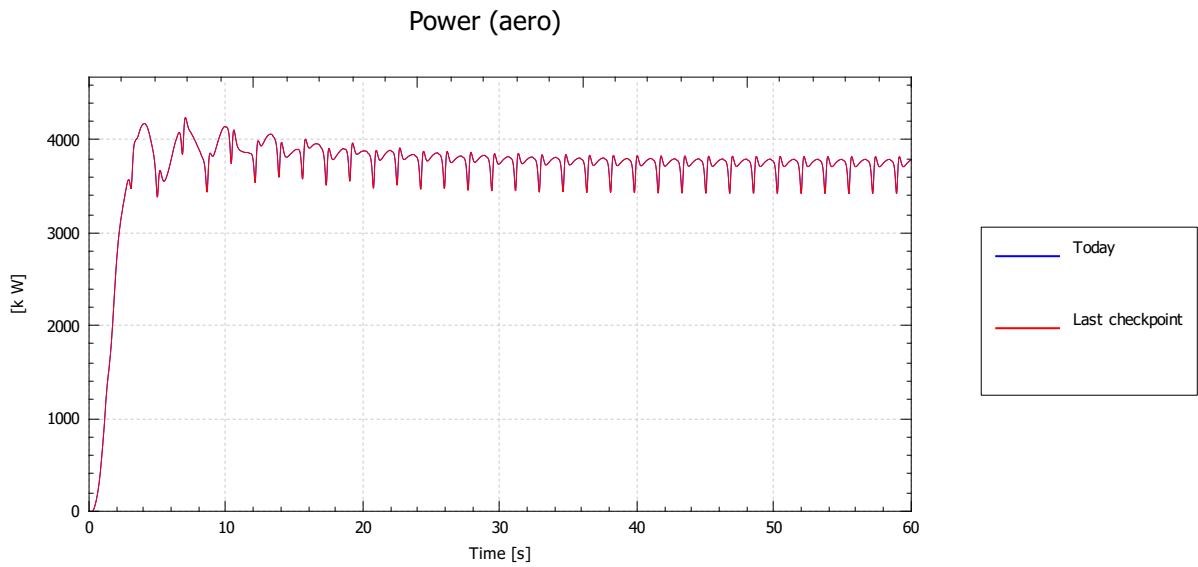


Displacement damping ratio

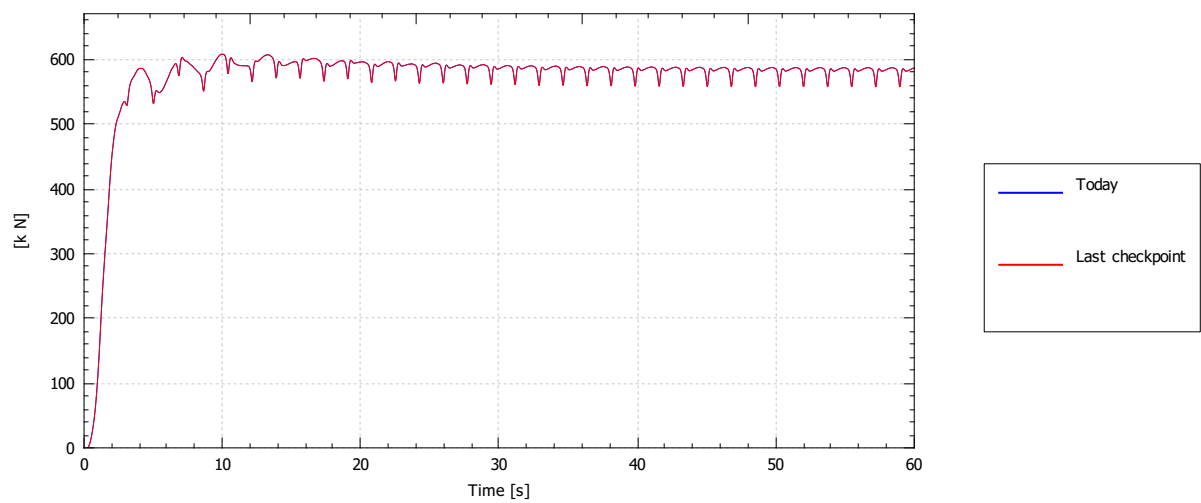


Load case: KP

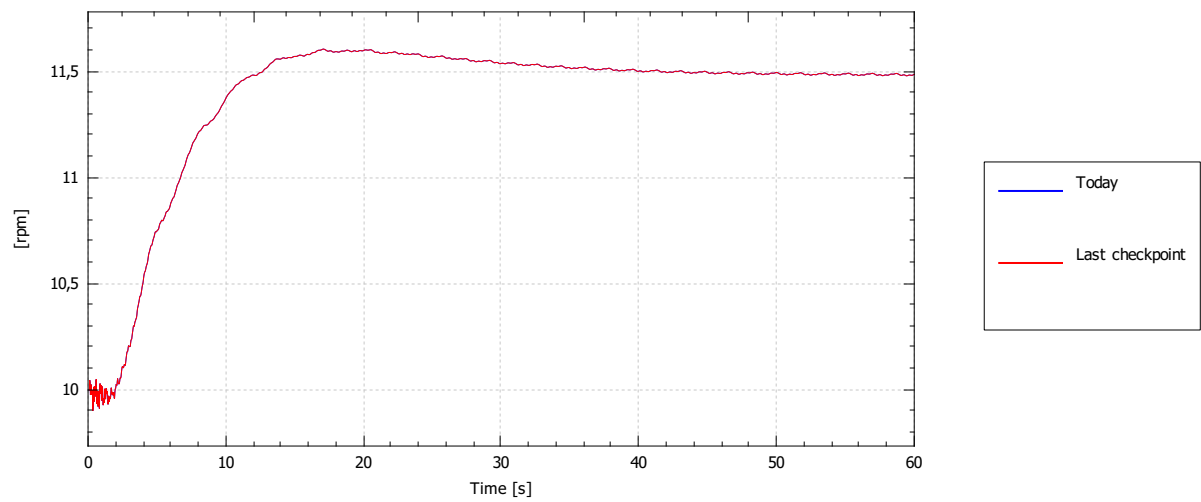
Rotor



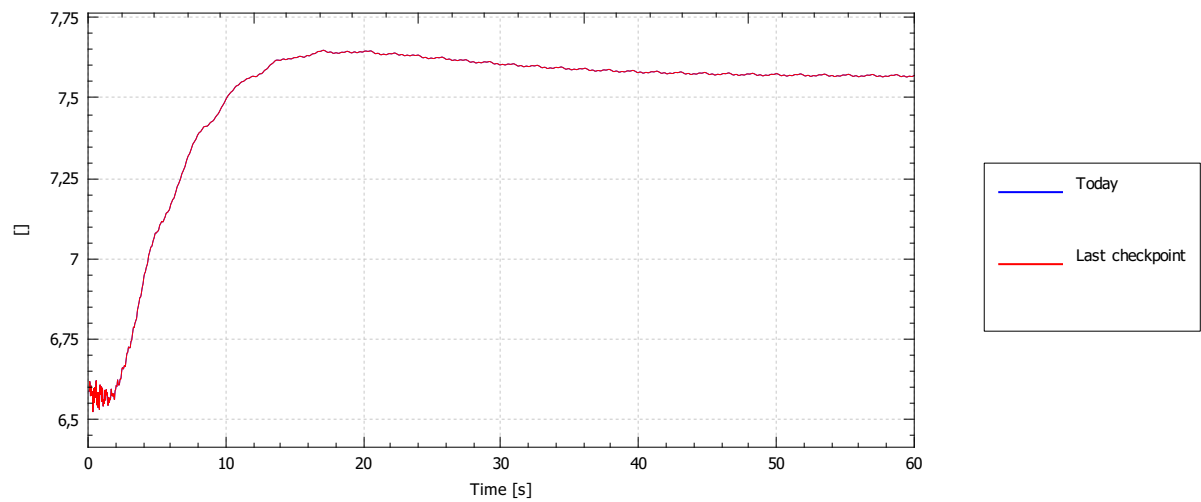
Thrust (aero)



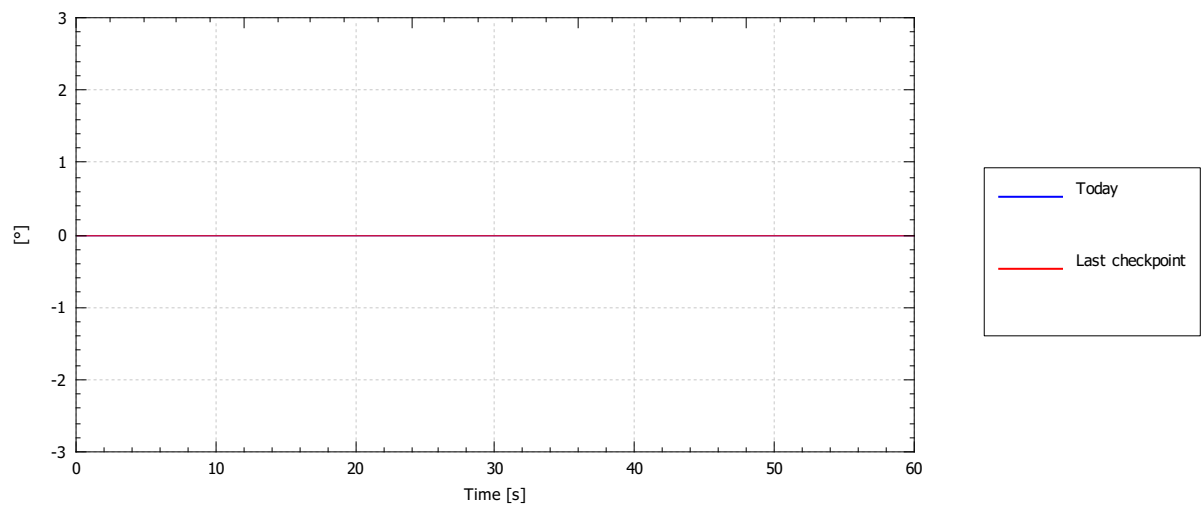
RPM



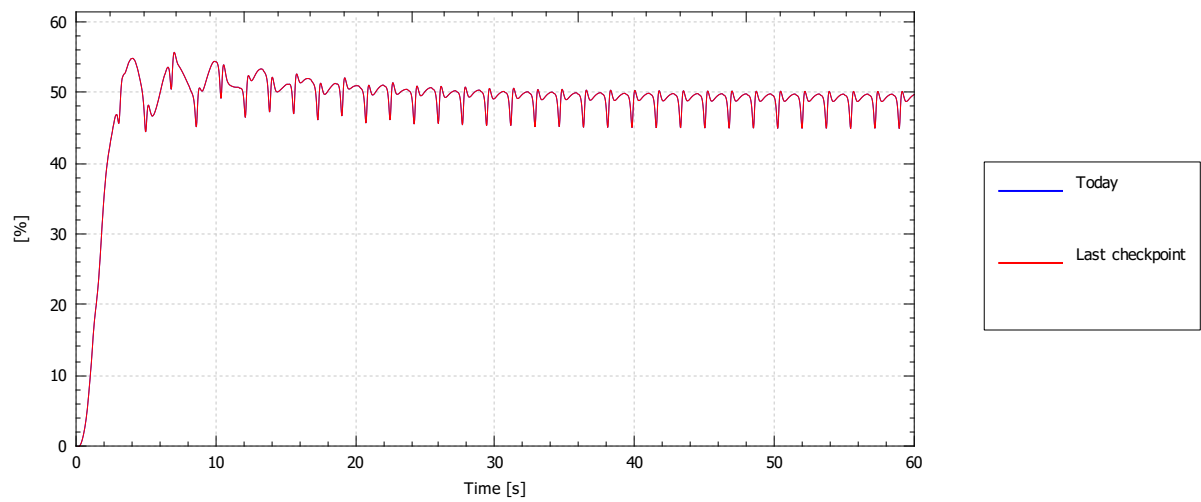
TSR



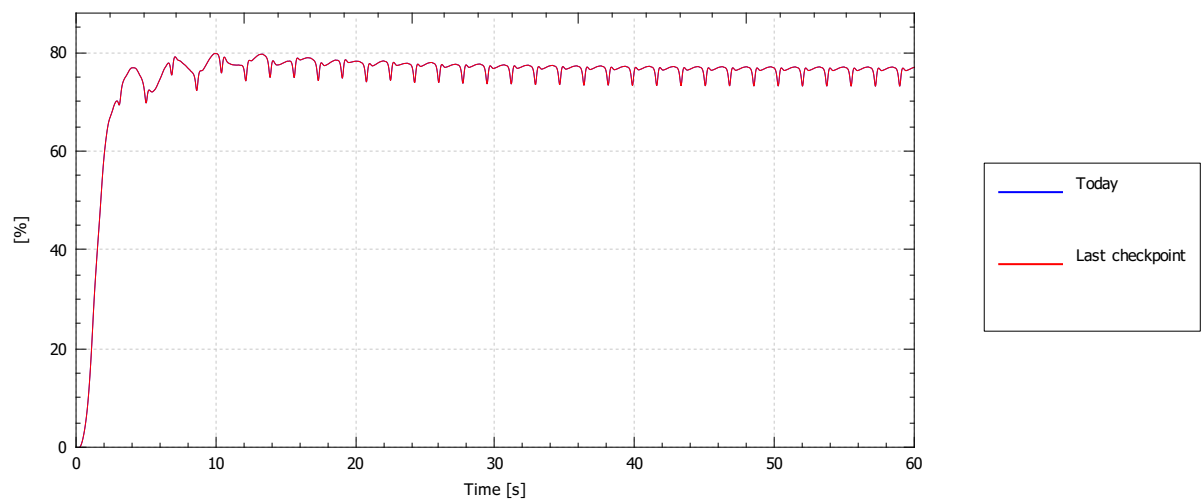
Representative demanded pitch angle



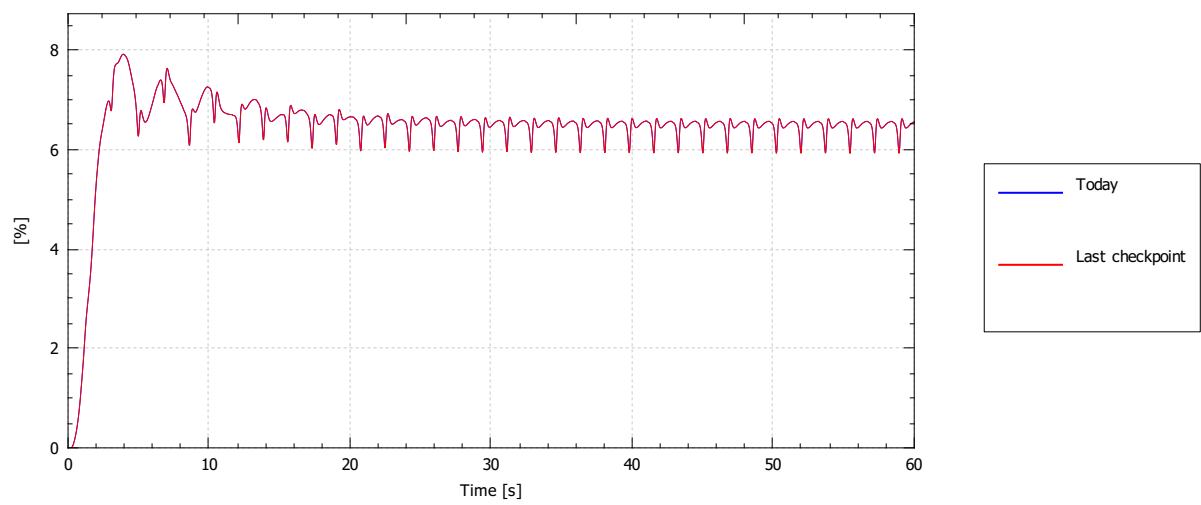
Power coef. (CP)



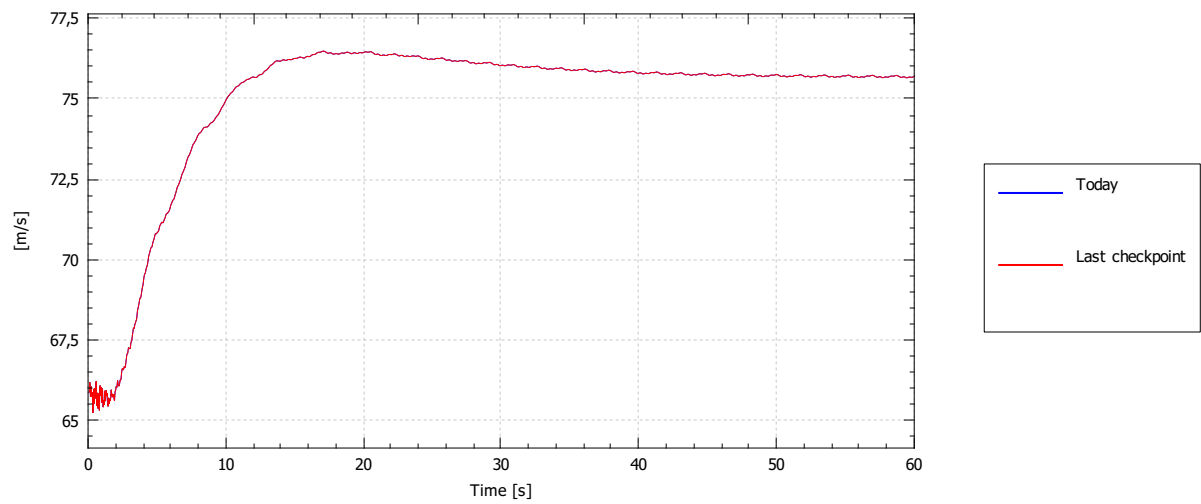
Thrust coef. (CT)



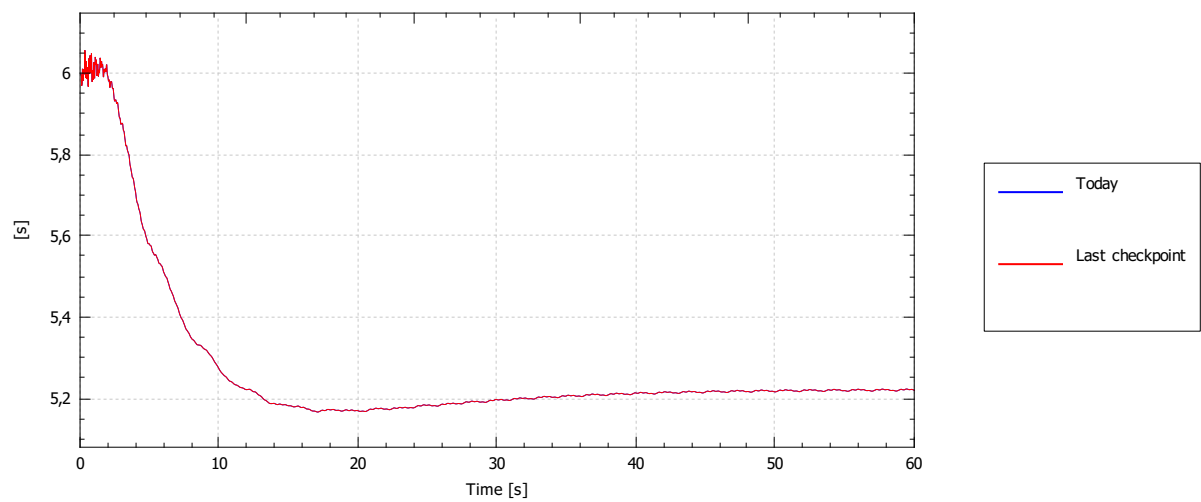
Torque coef. (CQ)



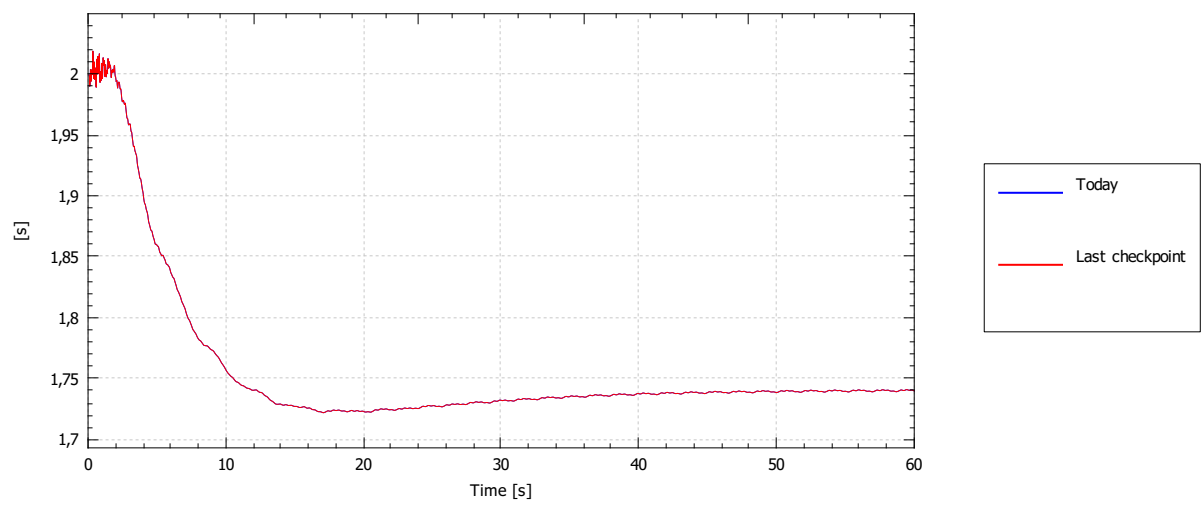
Tip speed



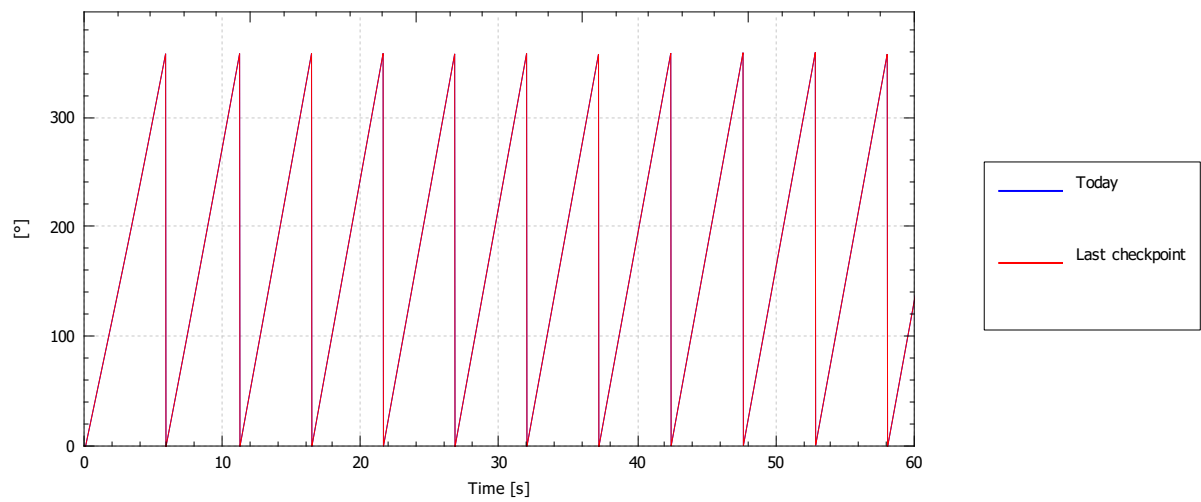
1P (one revolution)



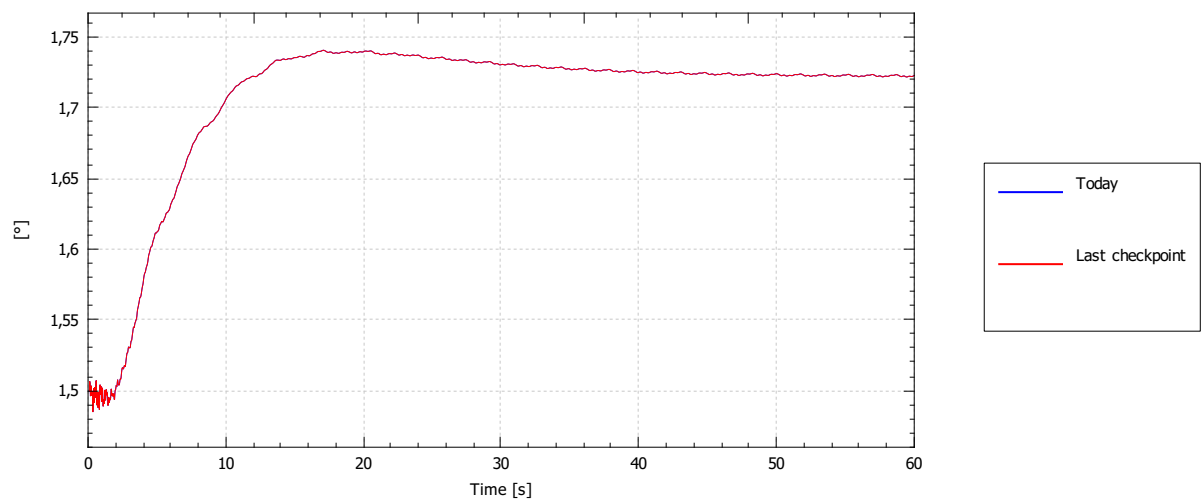
nP (blade passing)



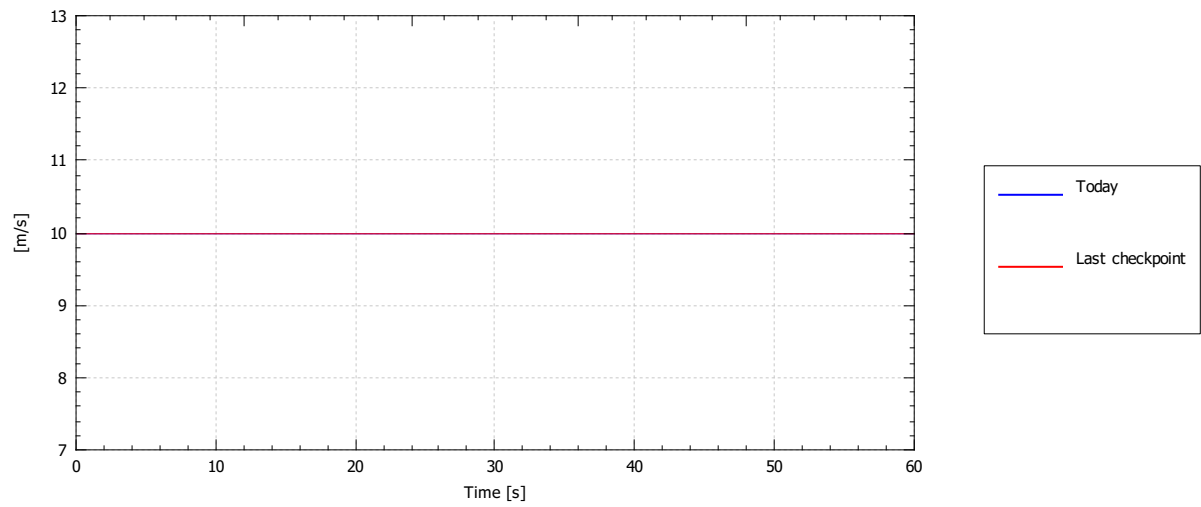
Azimuth angle



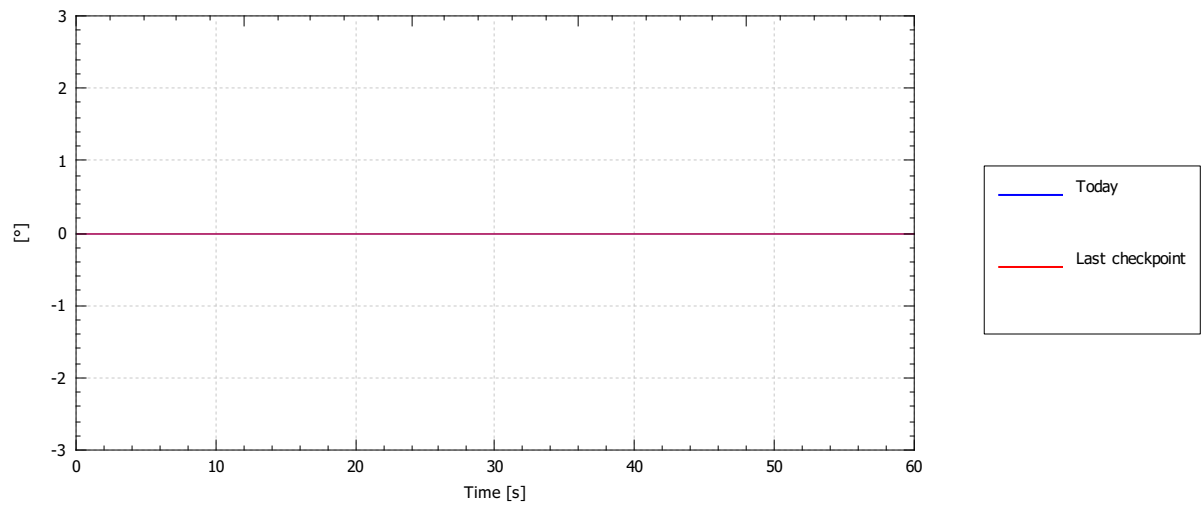
Rotation per timestep



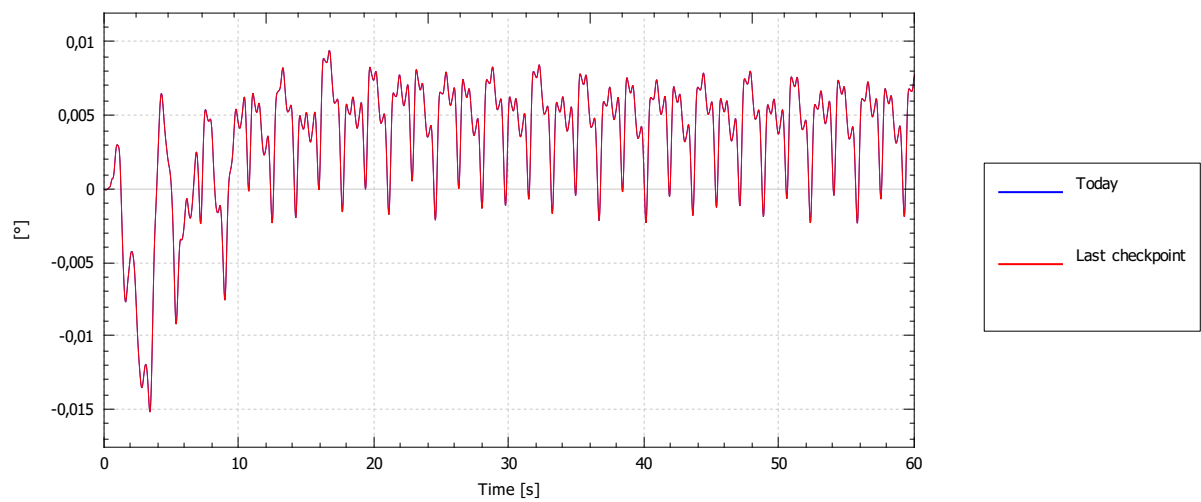
Wind speed at hub, magnitude



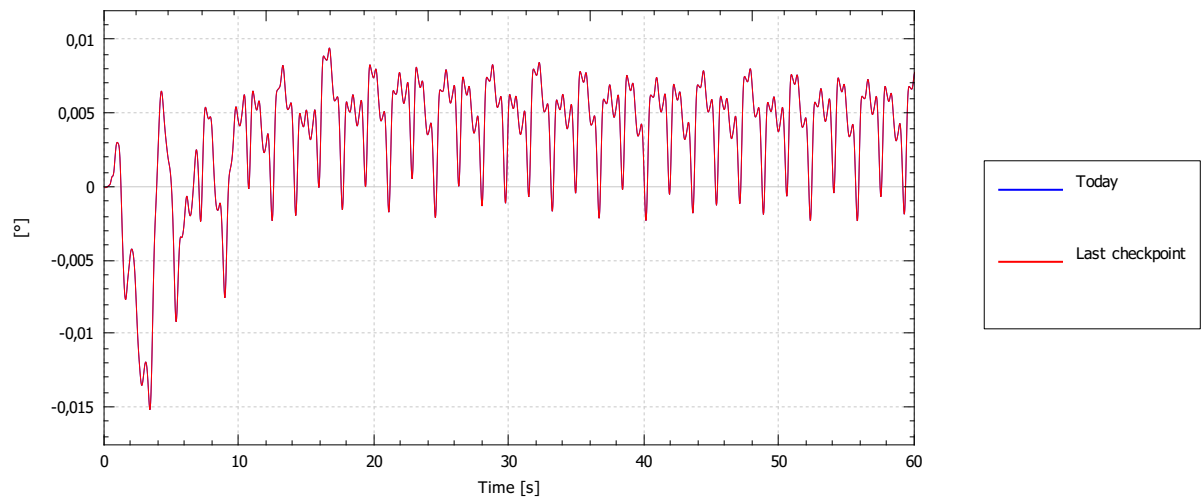
Wind angle at hub



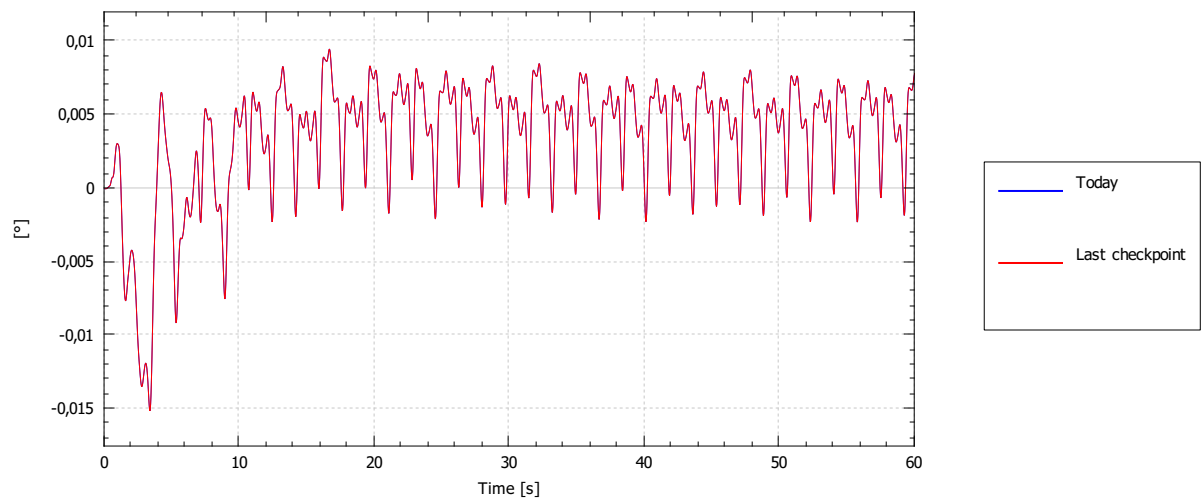
Yaw angle relative to forward



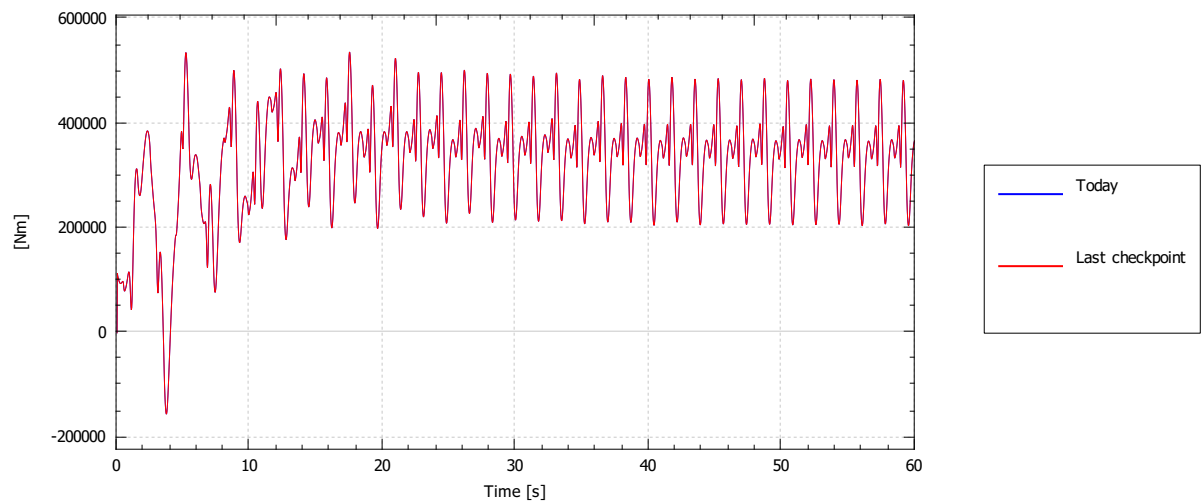
Yaw angle to reference direction



Yaw error

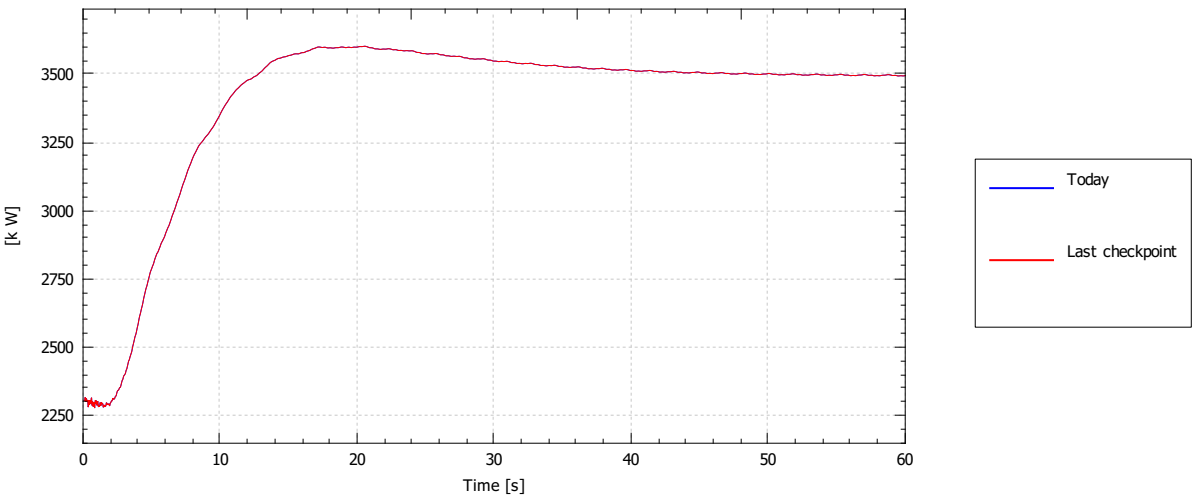


Torque about yaw axis

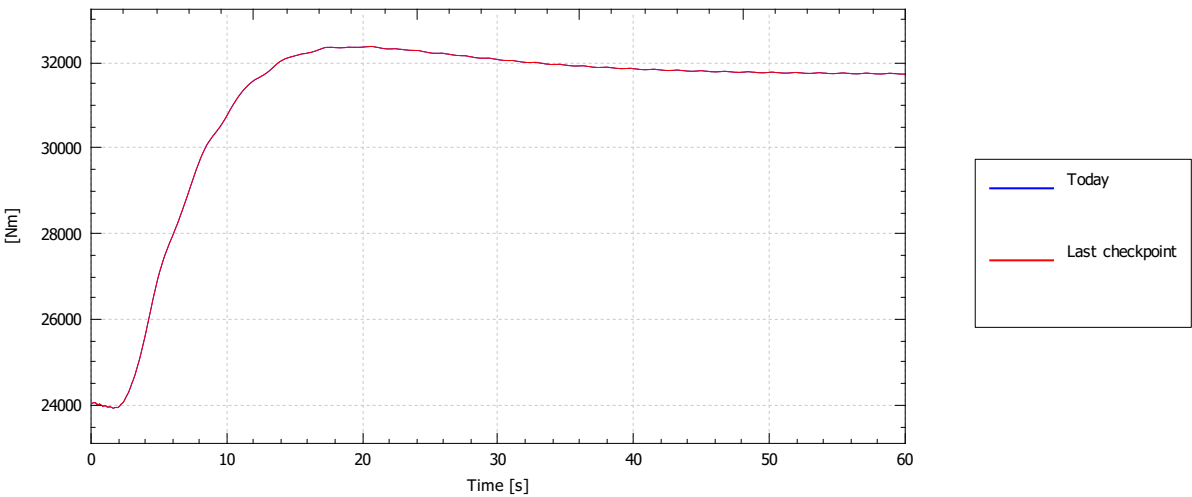


Generator

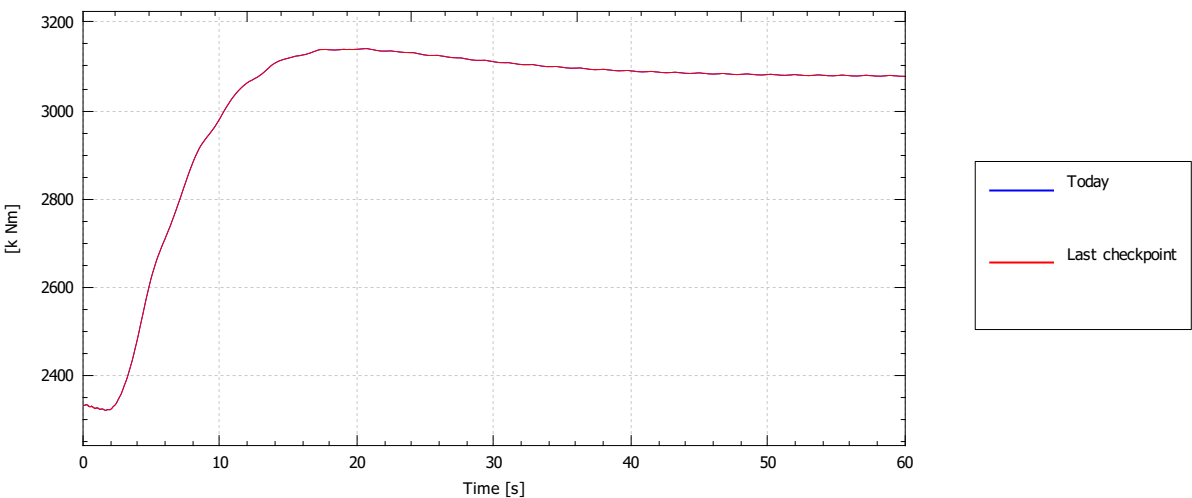
Power (electrical)



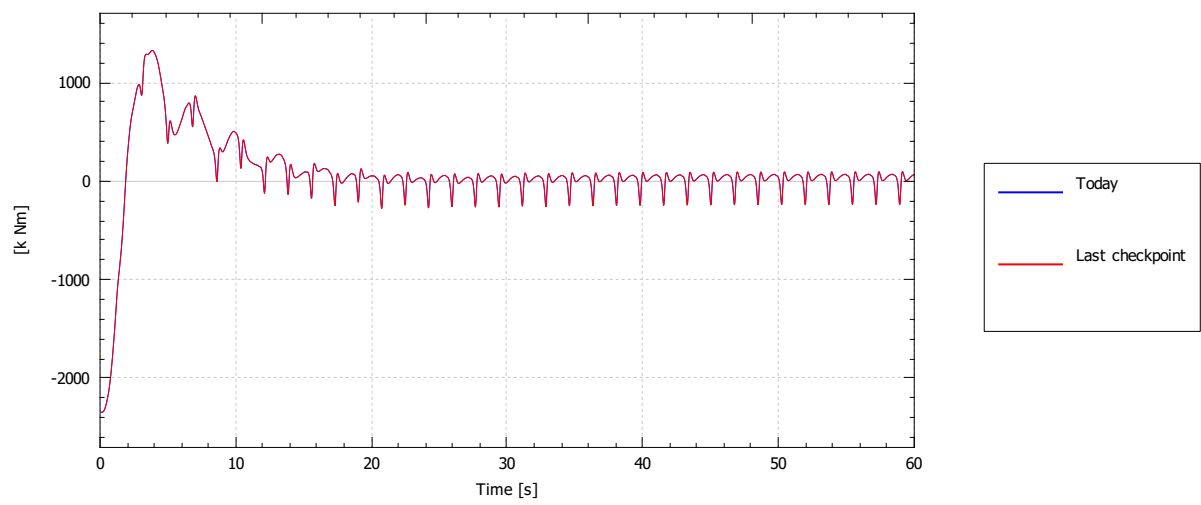
Torque



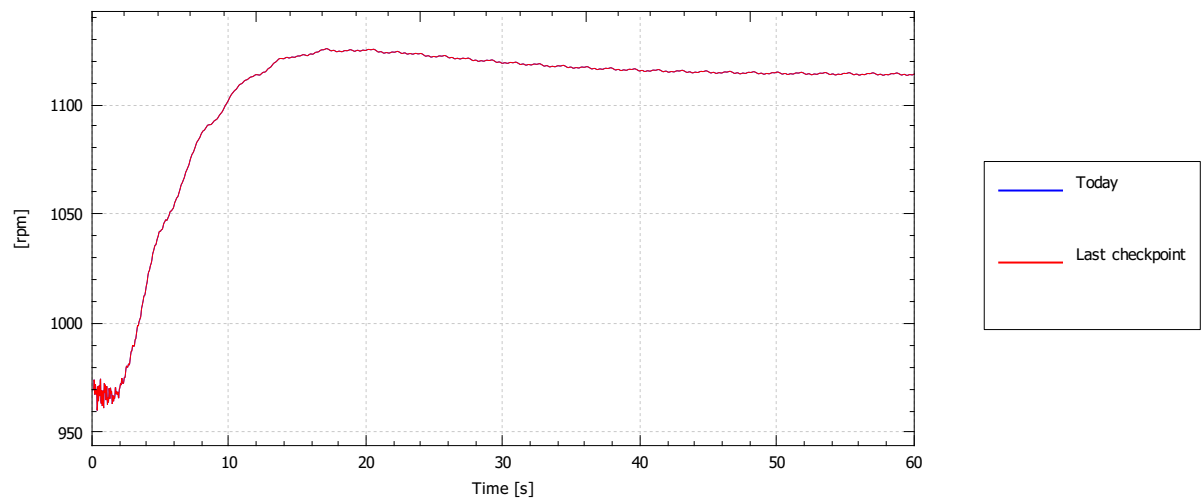
Torque on main shaft



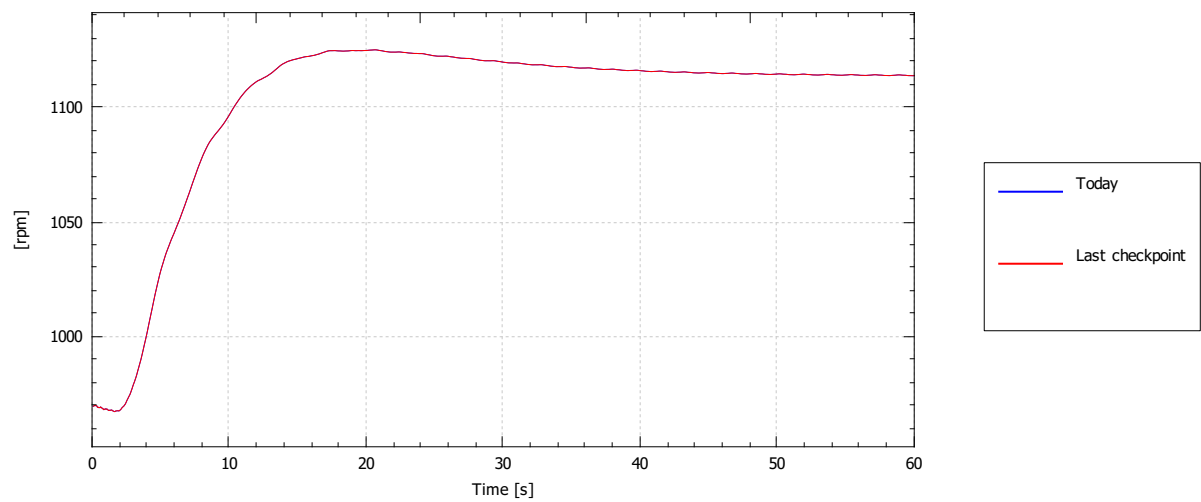
Torque diff. on main shaft



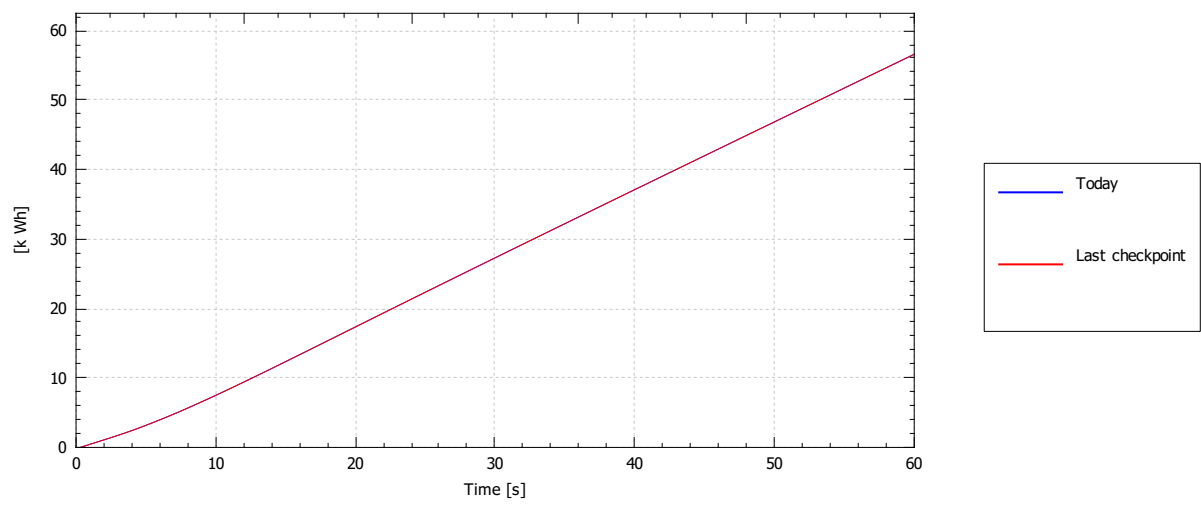
RPM



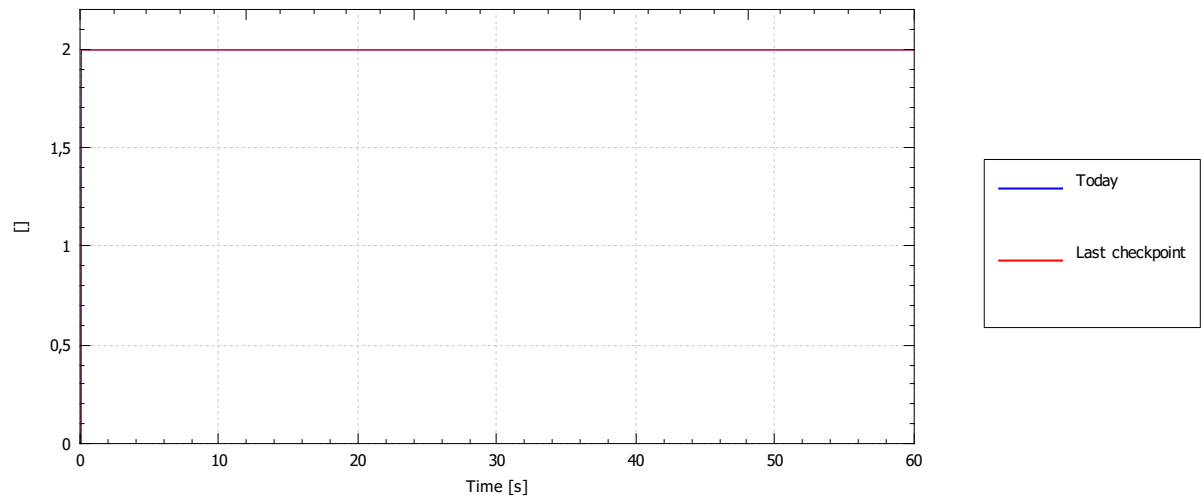
Filtered RPM



Electricity production

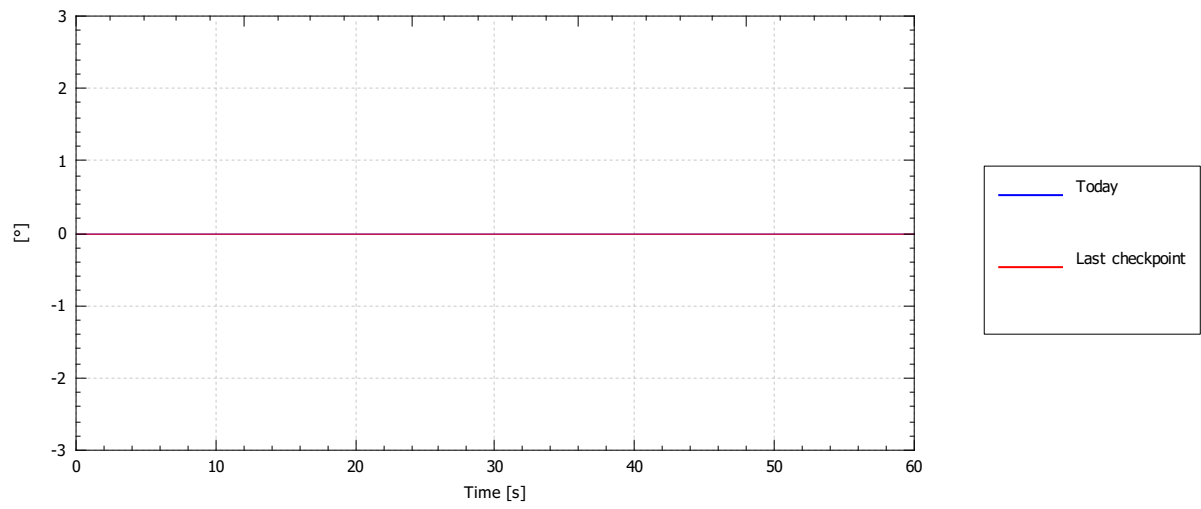


Region

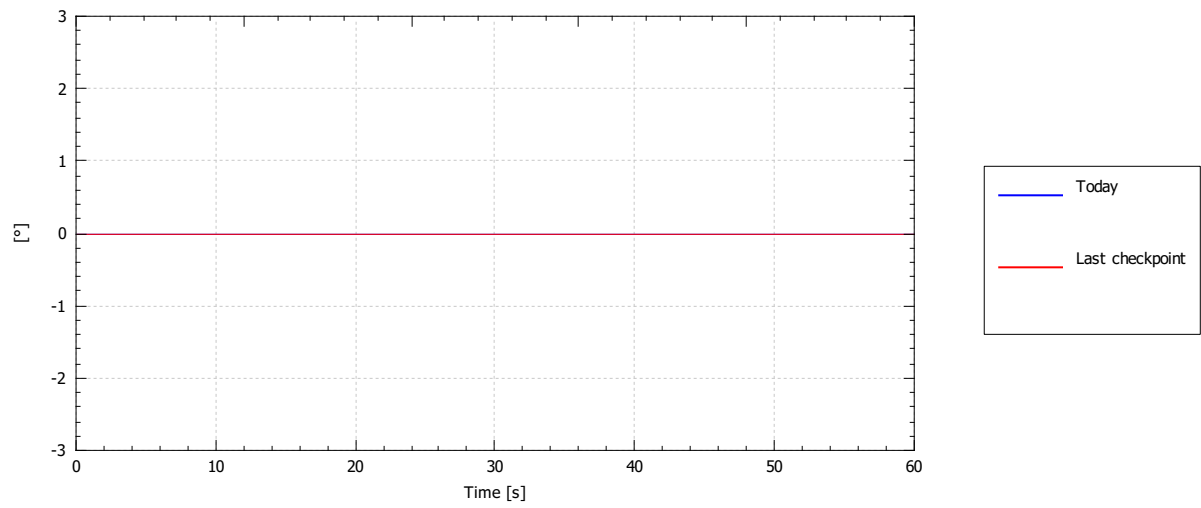


Demanded pitch controller

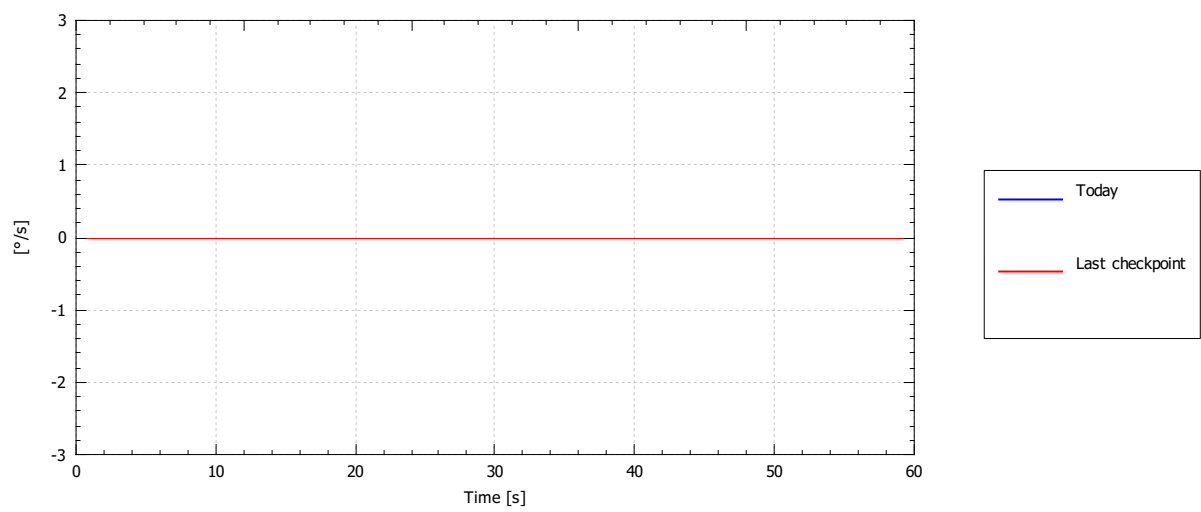
Demanded collective pitch angle



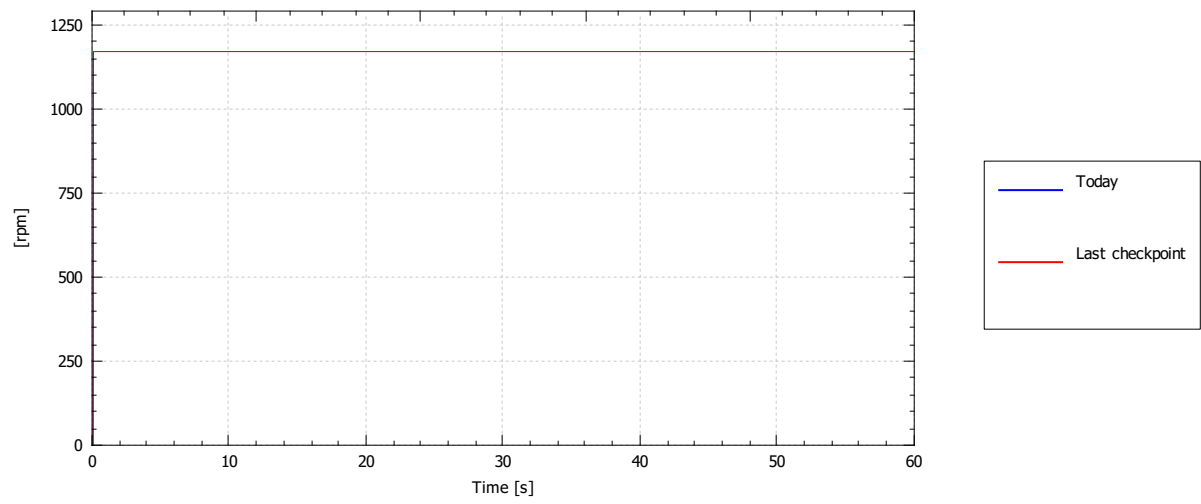
Cumulative demanded collective pitch angle



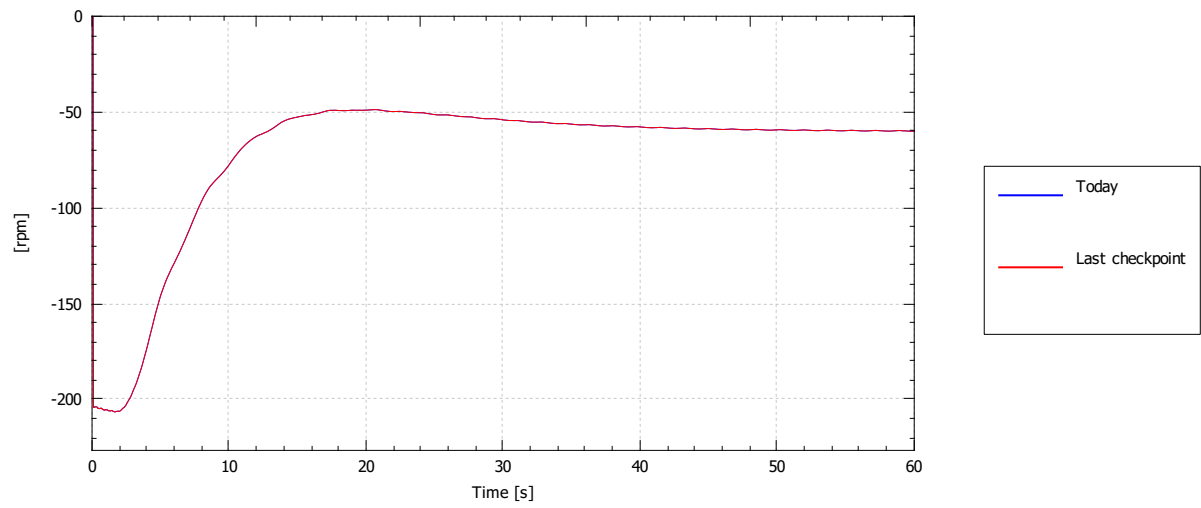
Demanded collective pitch angle rate



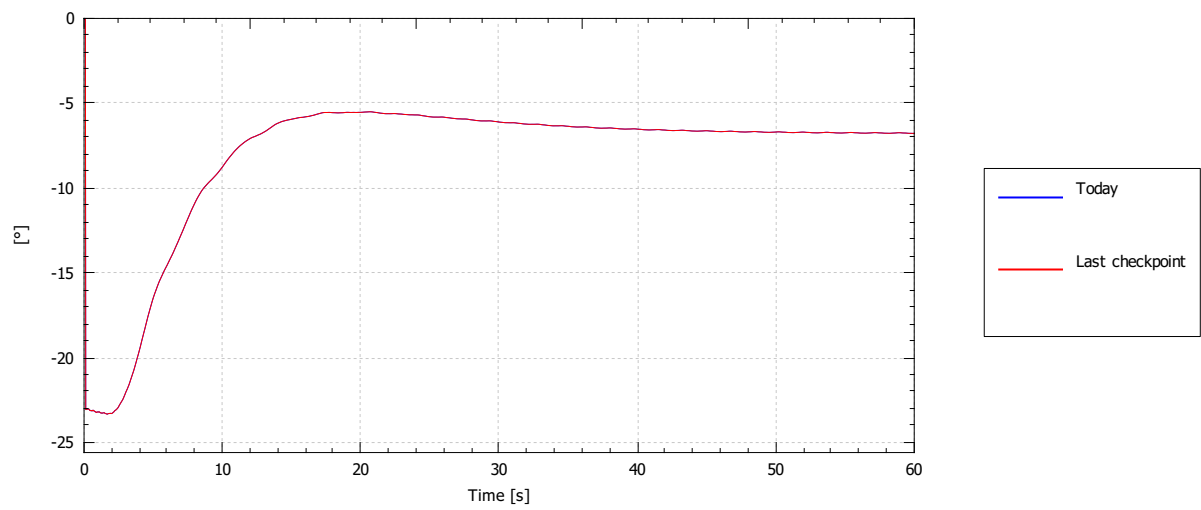
Set point



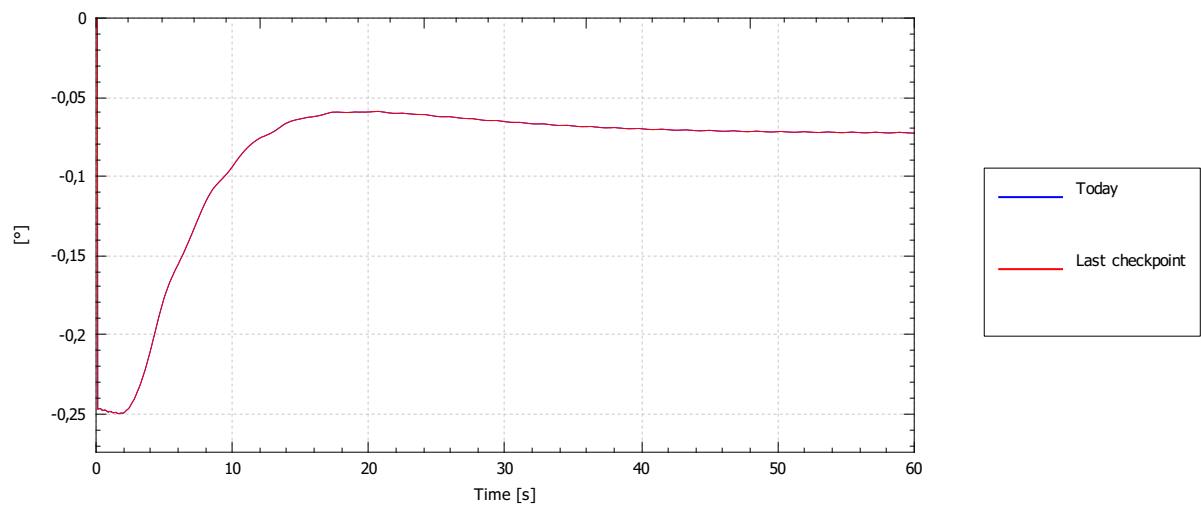
RPM error



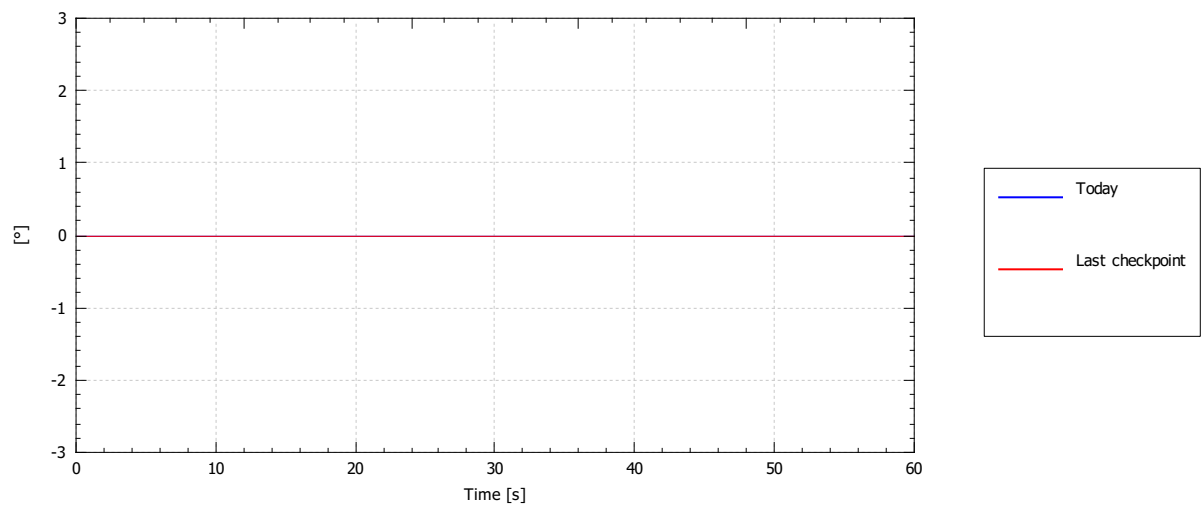
P term



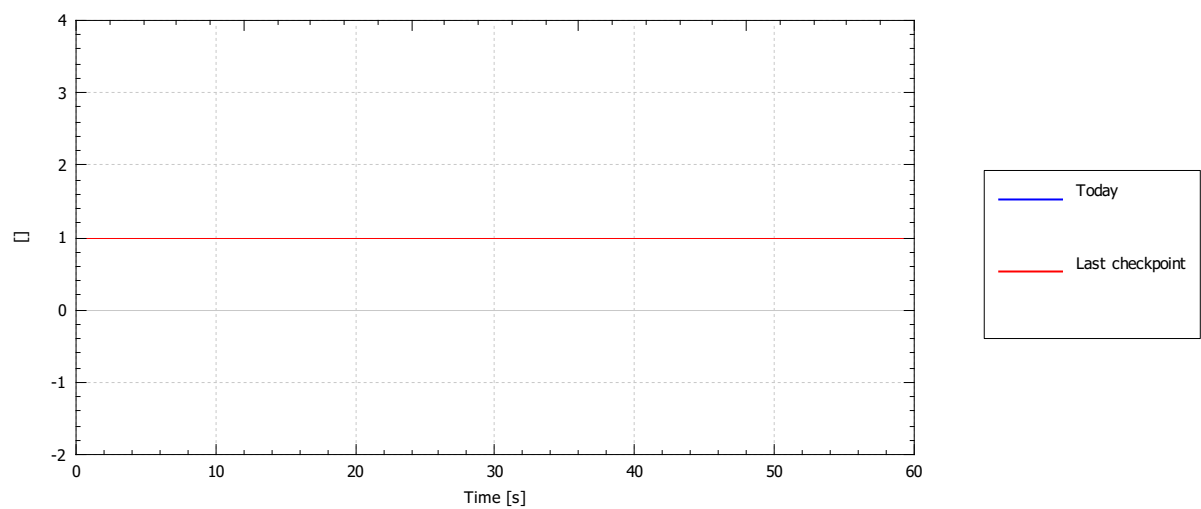
I term

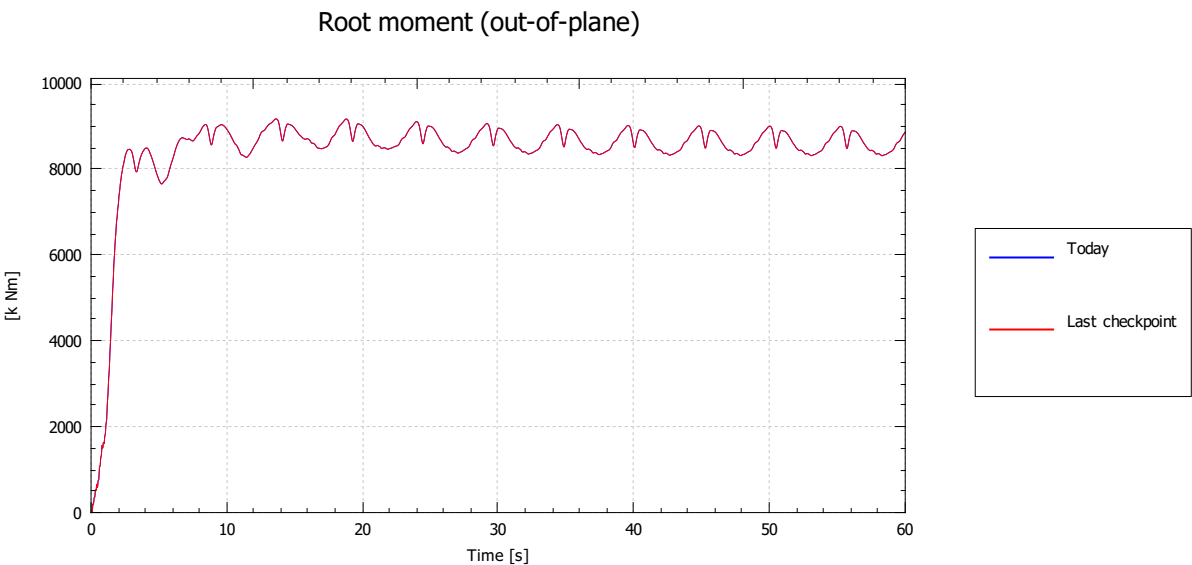
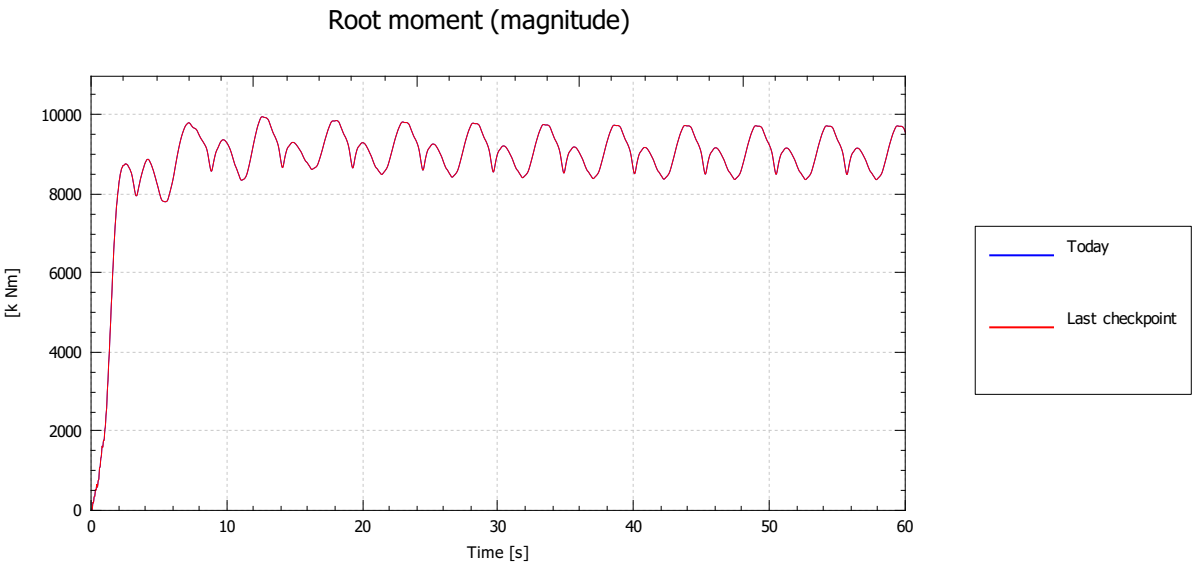
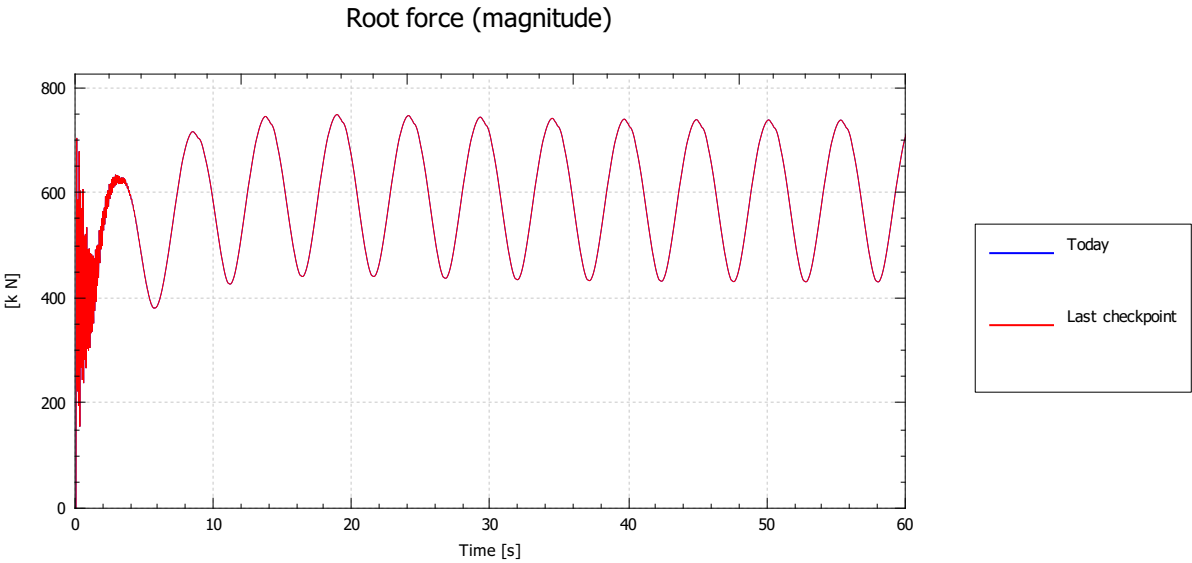


D term

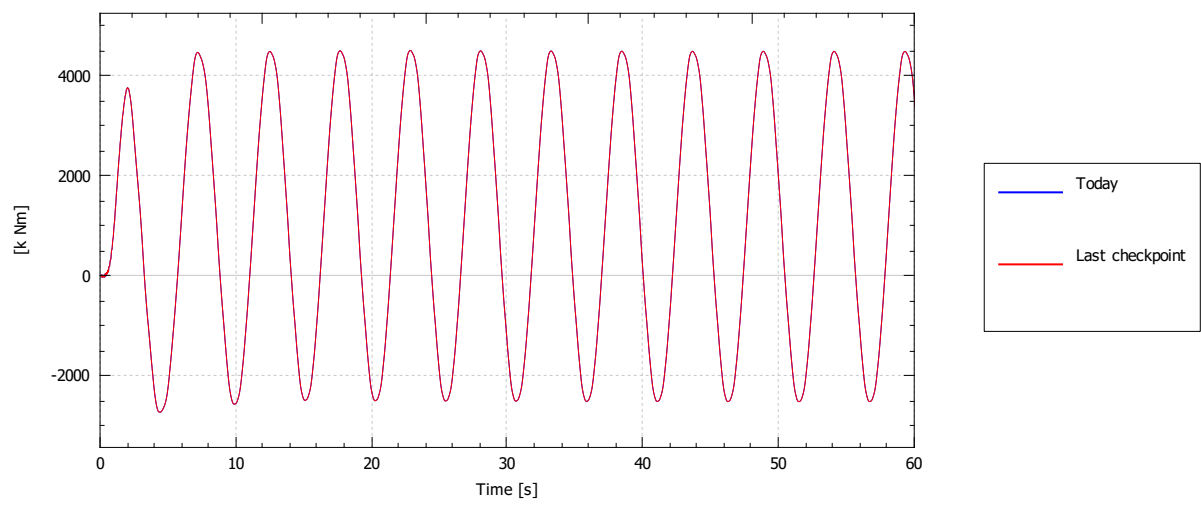


Gain scheduling factor

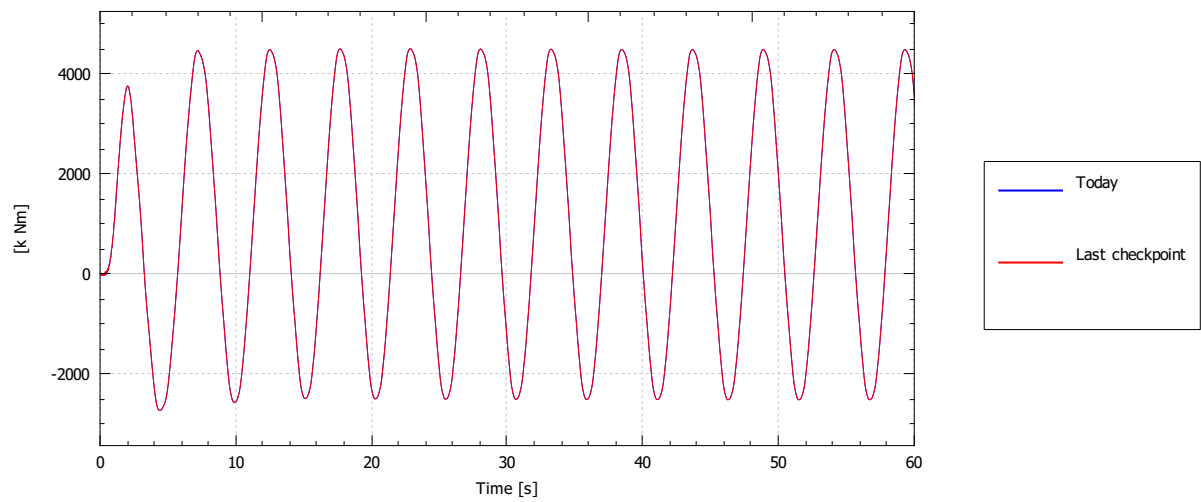




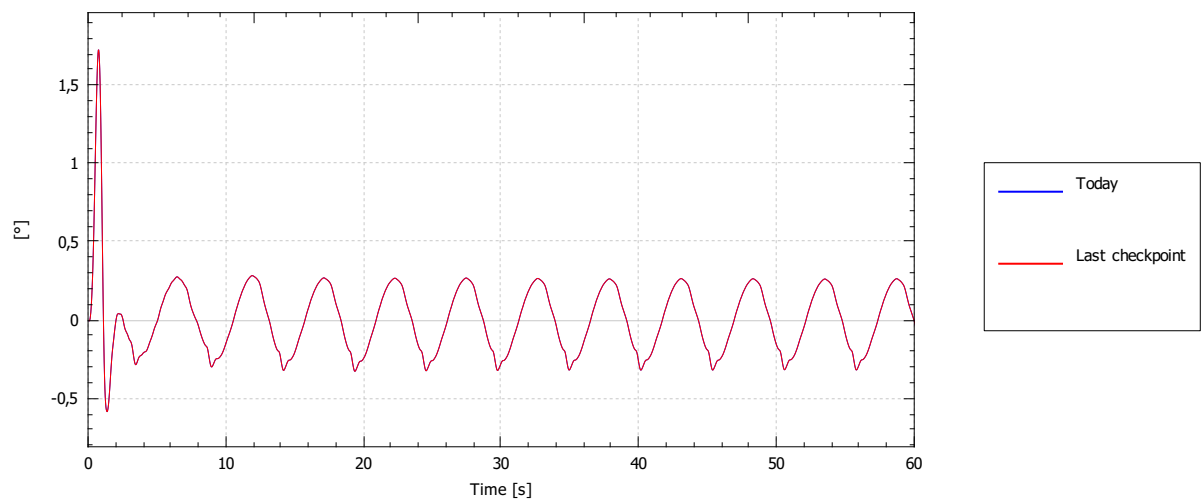
Root moment (in-plane)



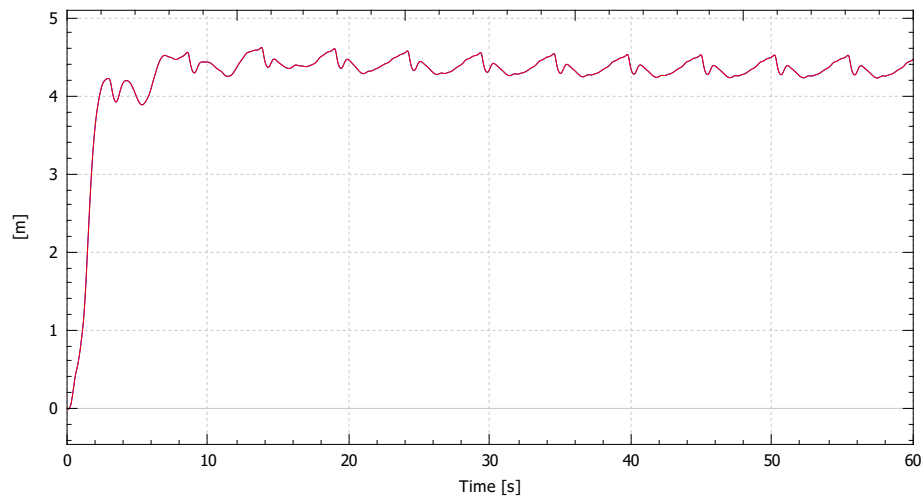
Root moment about shaft



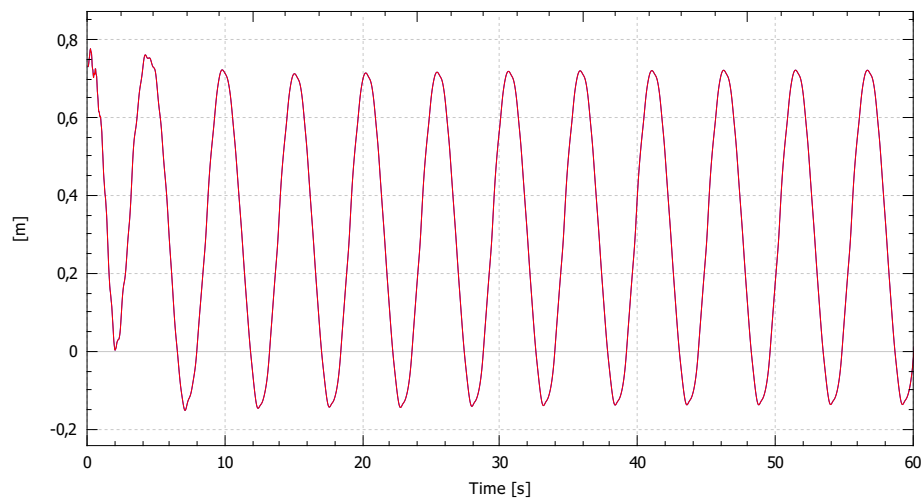
Pitch angle



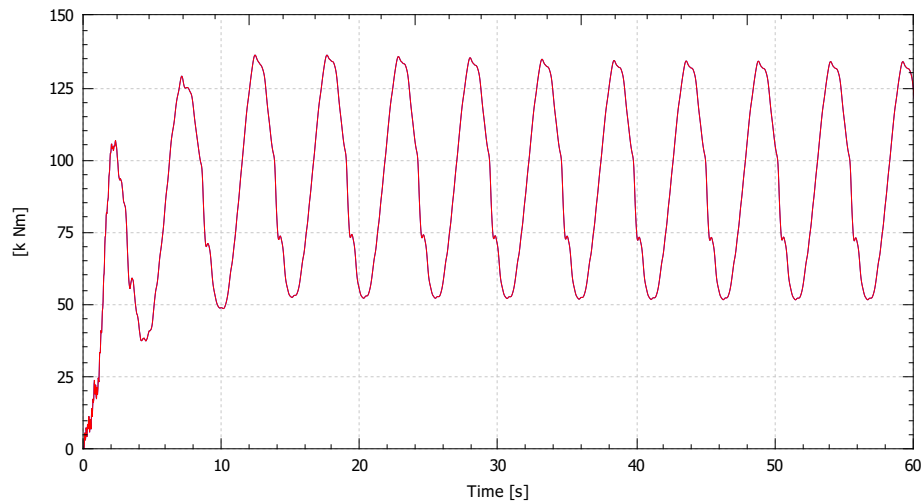
Tip deflection (out-of-plane)

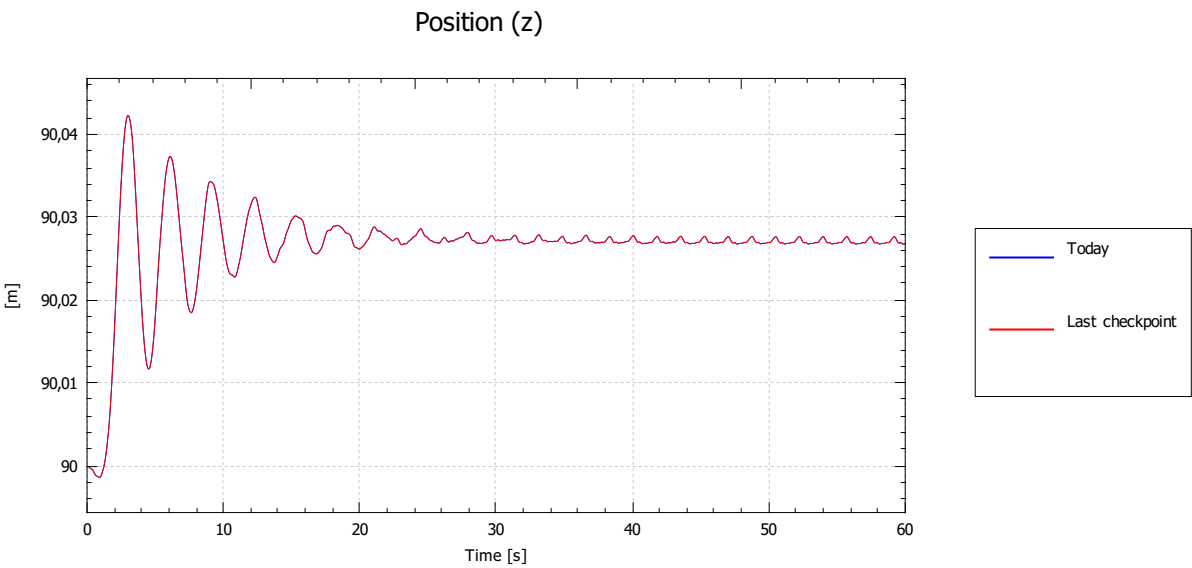
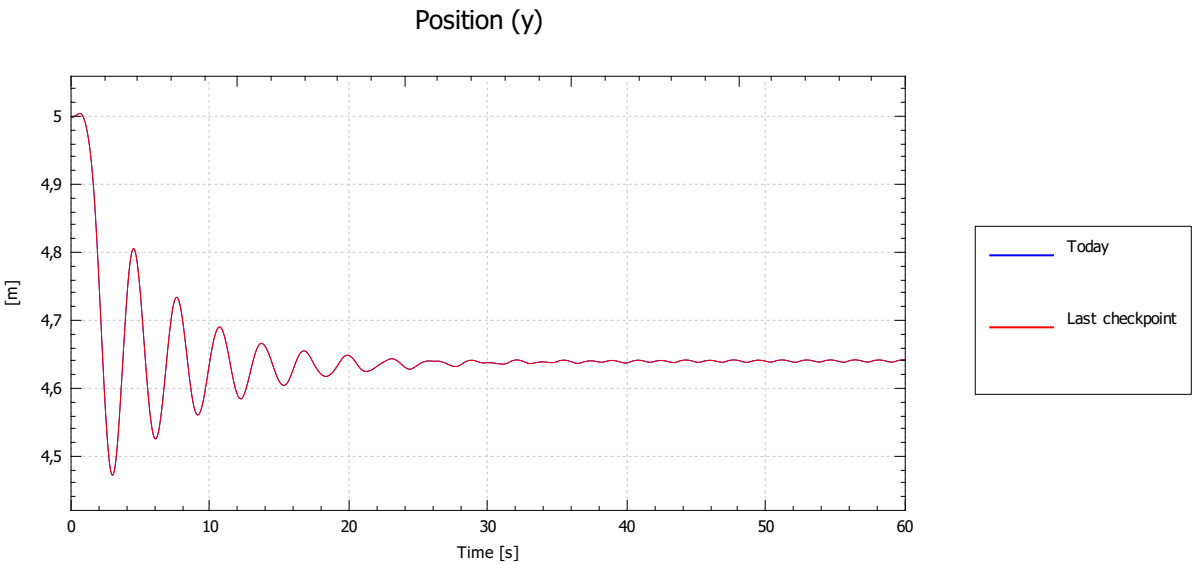
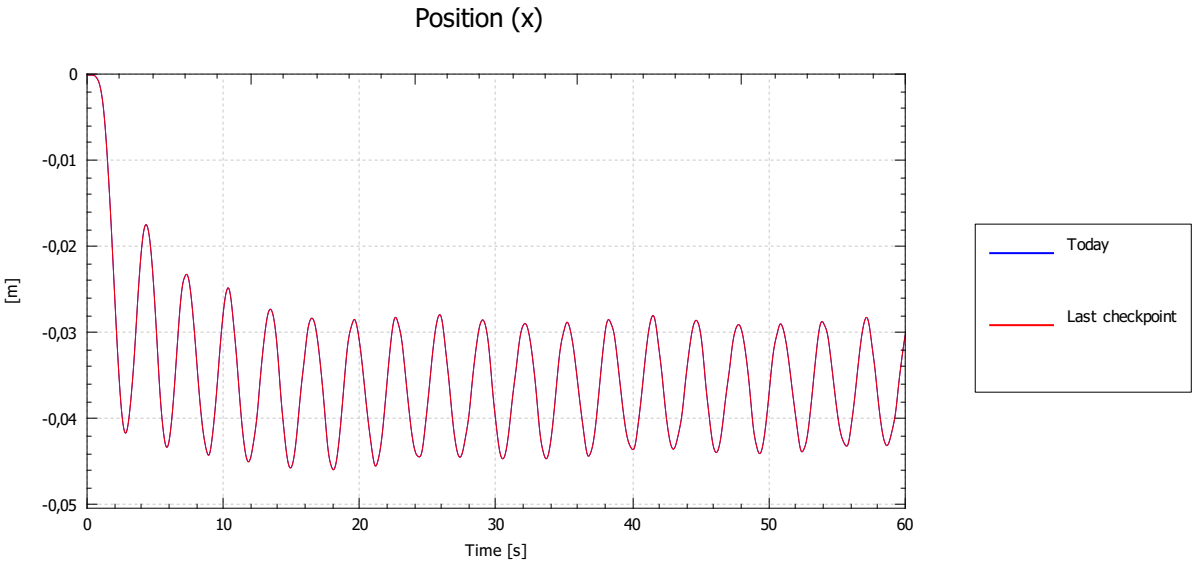


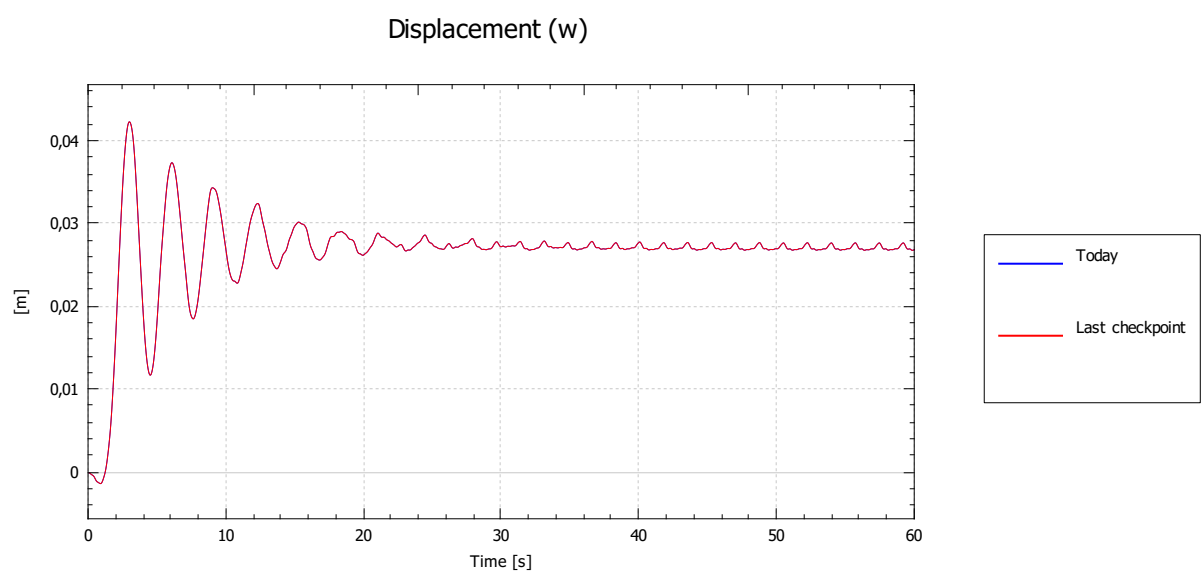
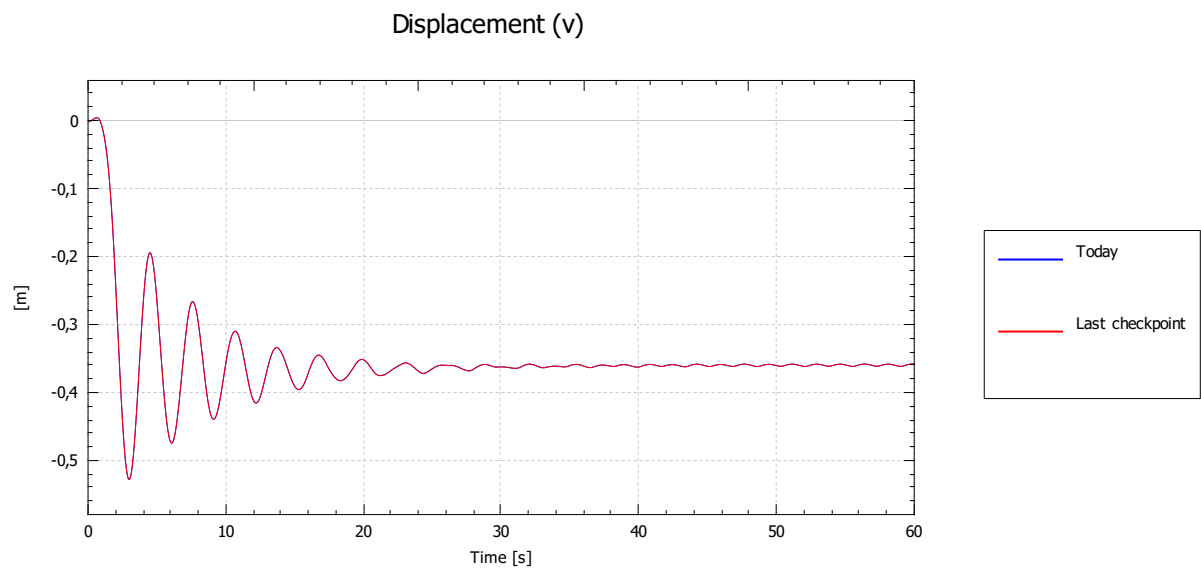
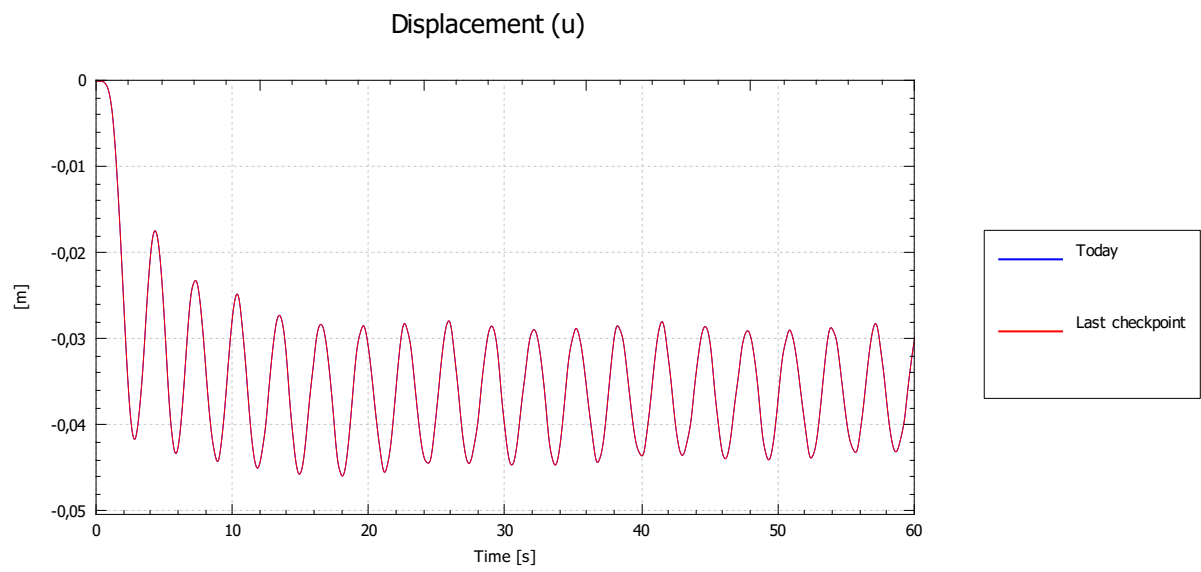
Tip deflection (in-plane)



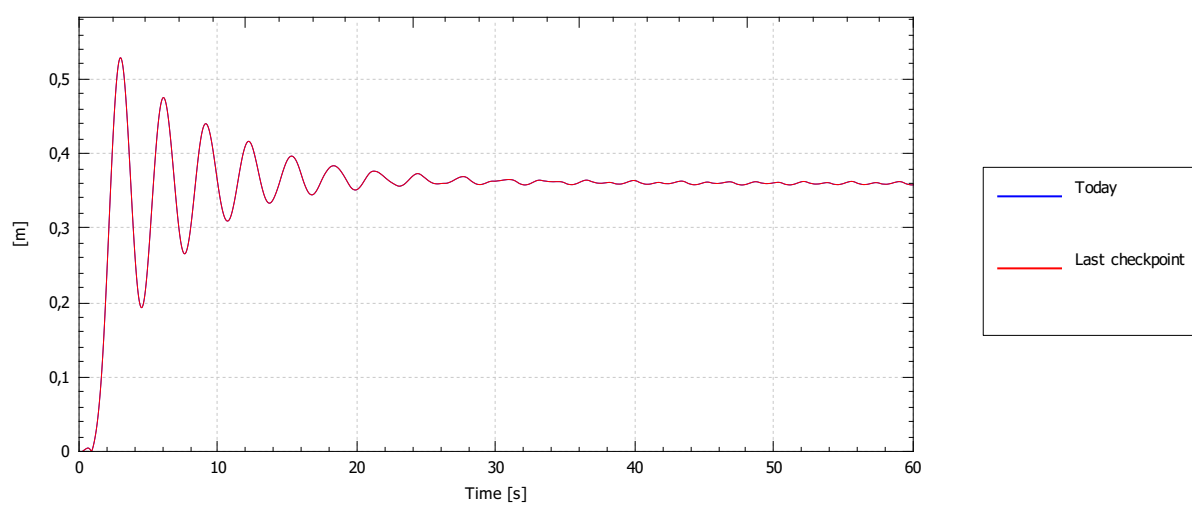
Root torque



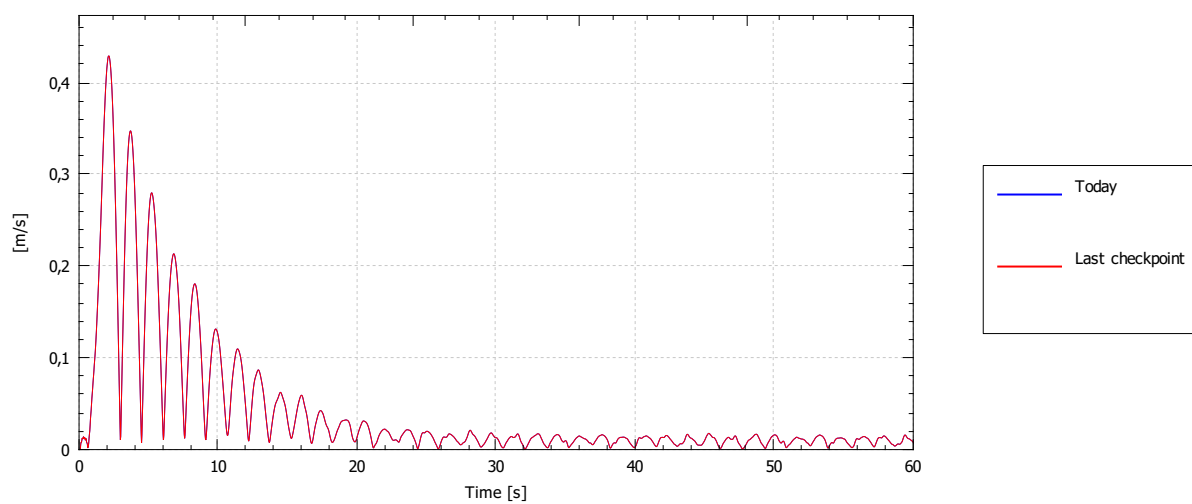




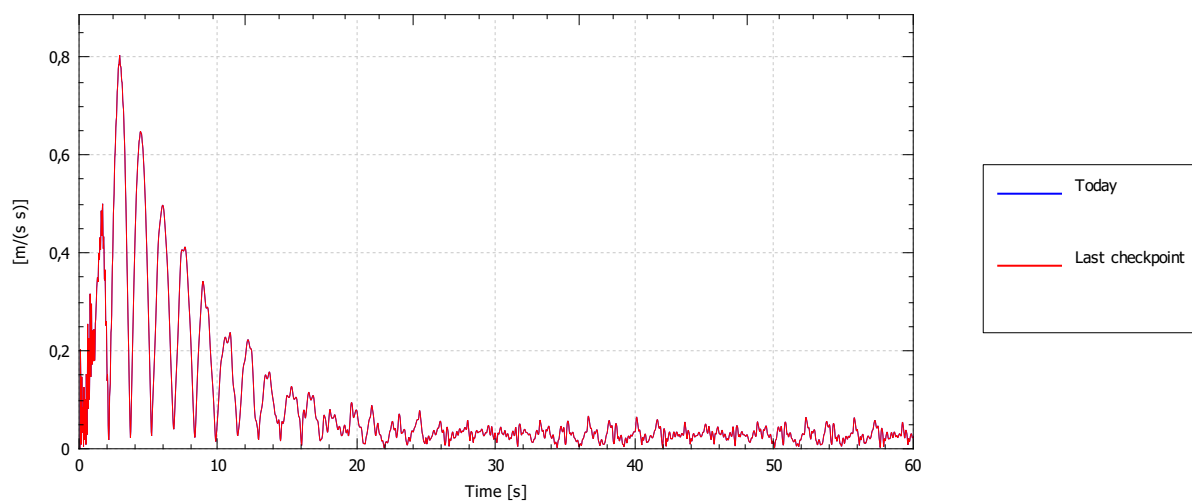
Displacement magnitude



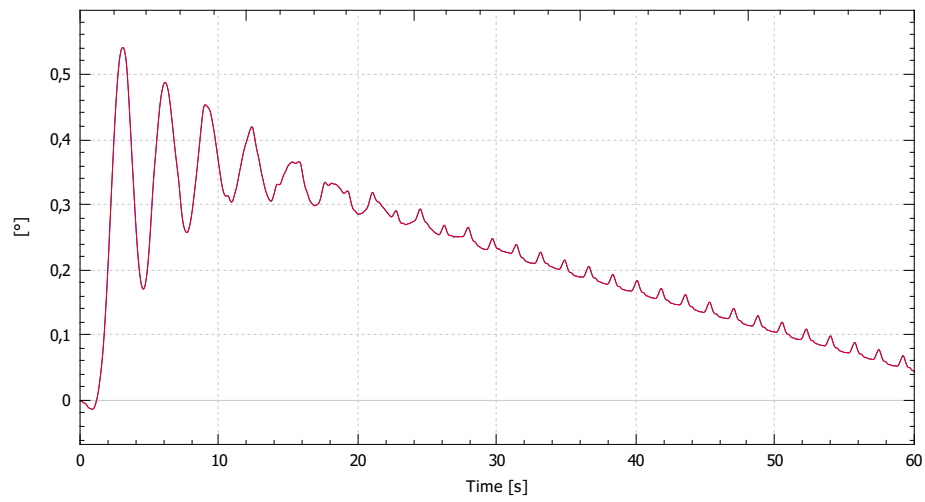
Speed



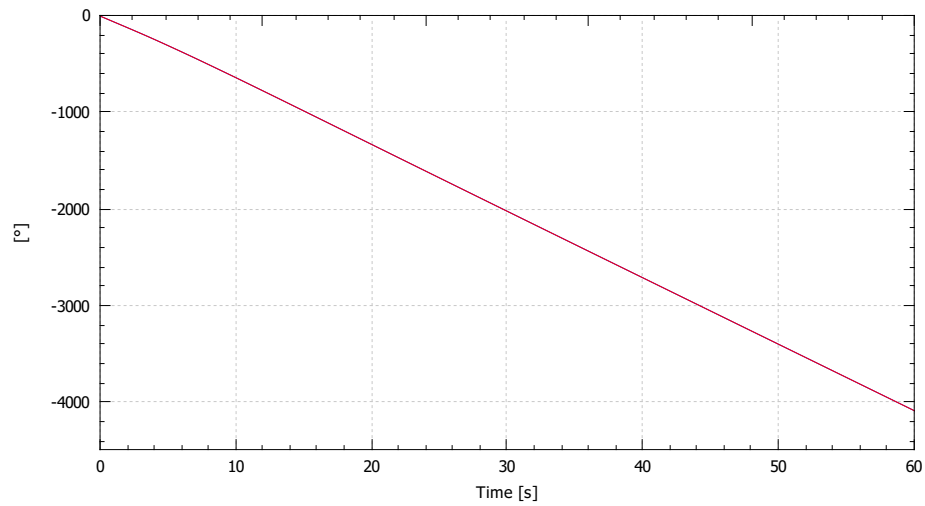
Acceleration, magnitude



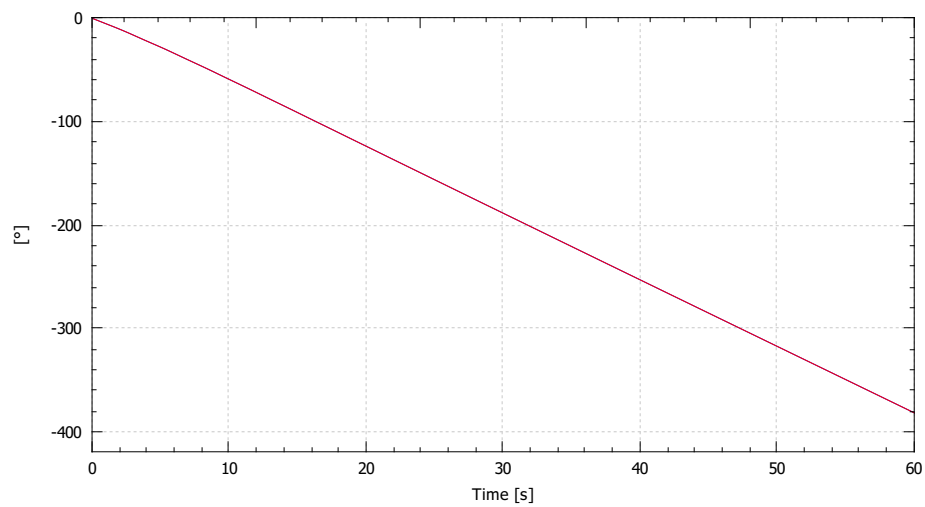
Rotational displacement (ru)



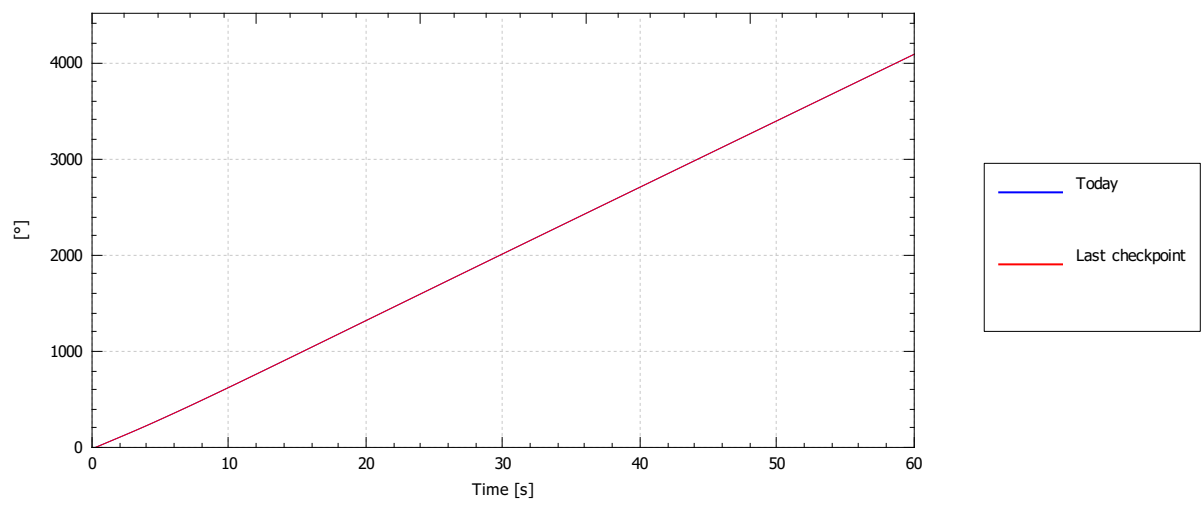
Rotational displacement (rv)



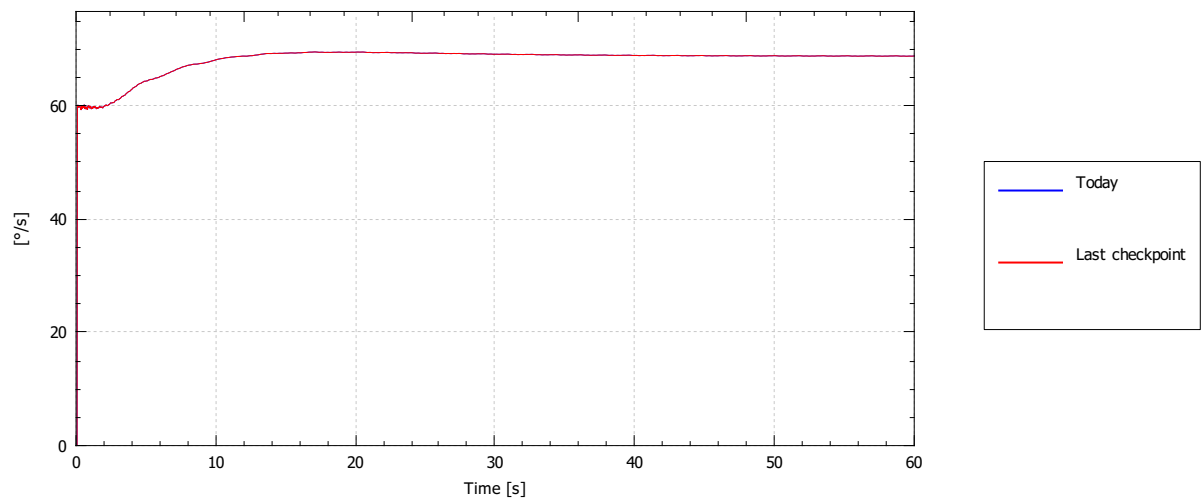
Rotational displacement (rw)



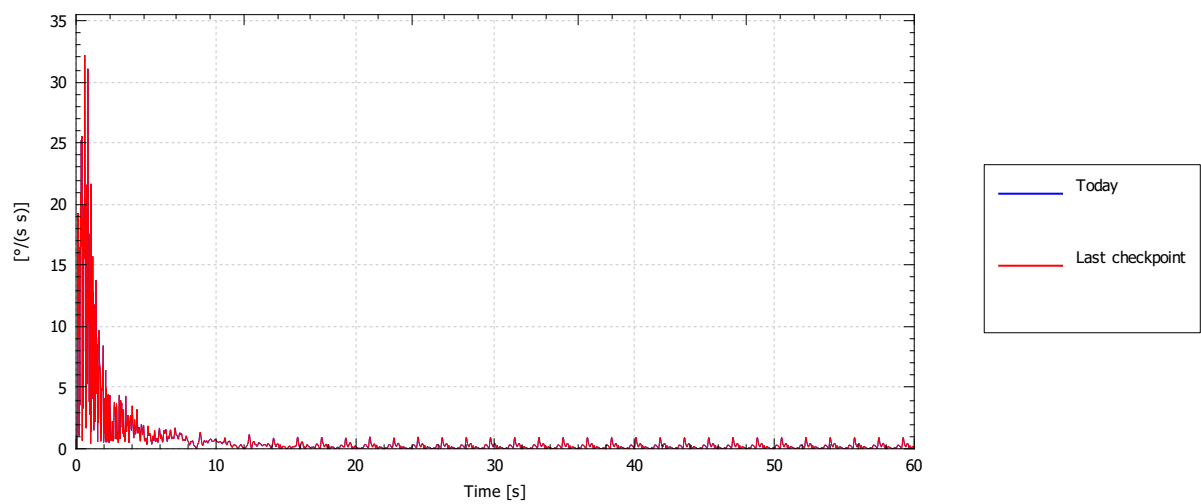
Rotational displacement magnitude



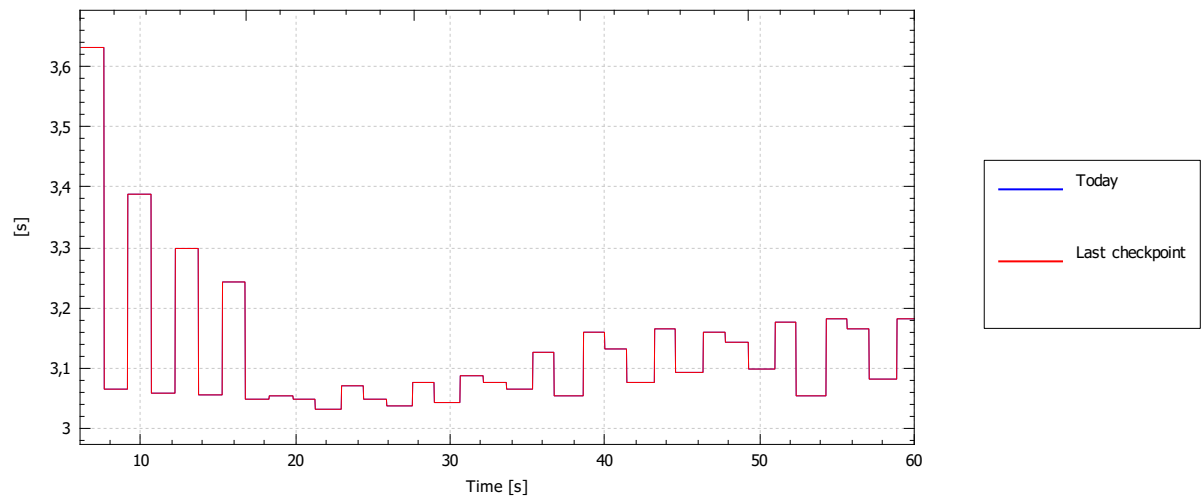
Rotational speed



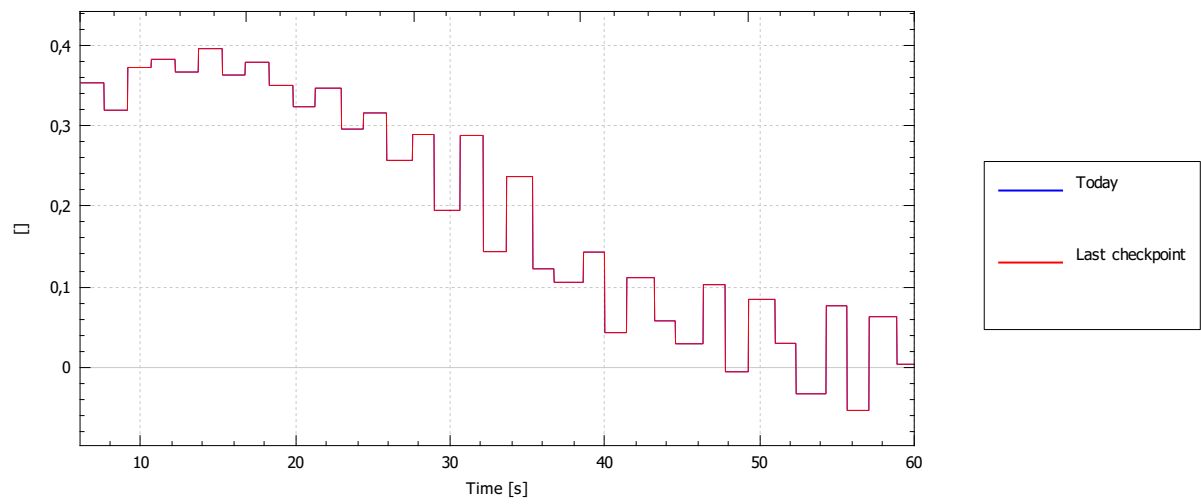
Rotational acceleration mag



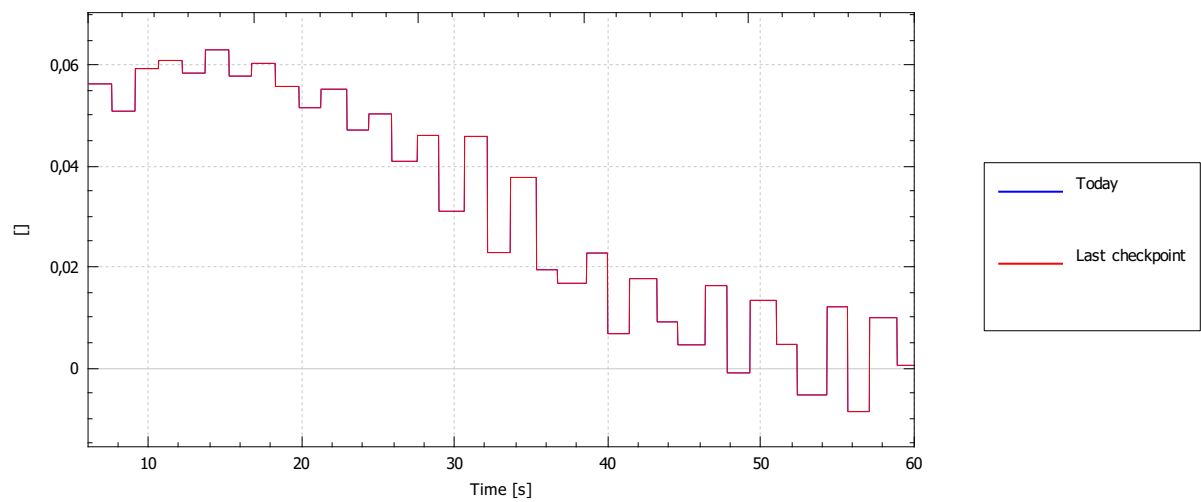
Displacement period



Displacement logarithmic decrement

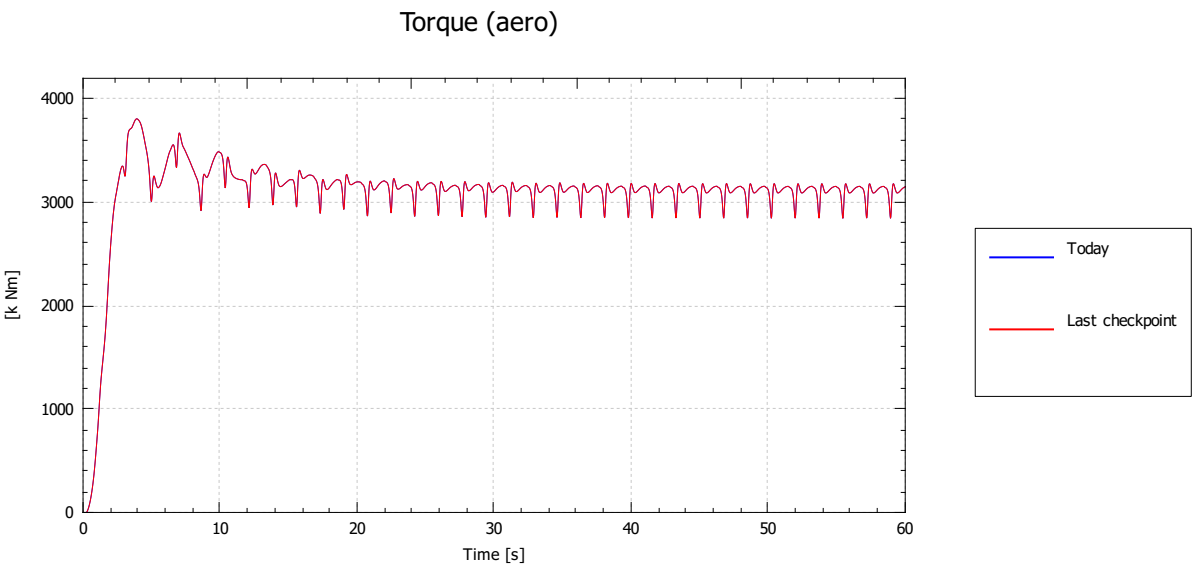
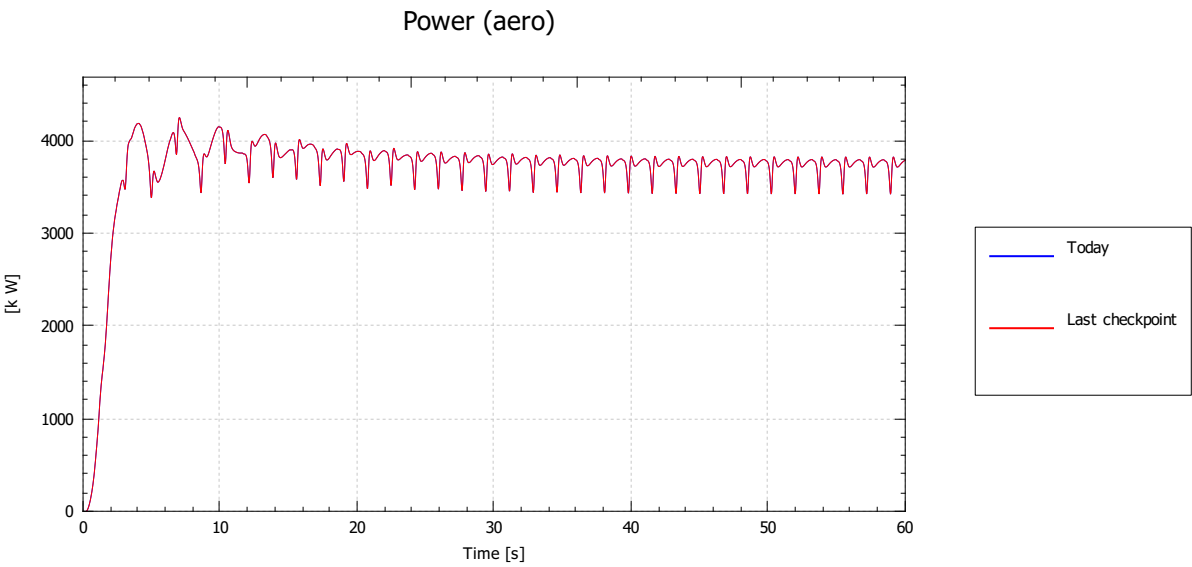


Displacement damping ratio

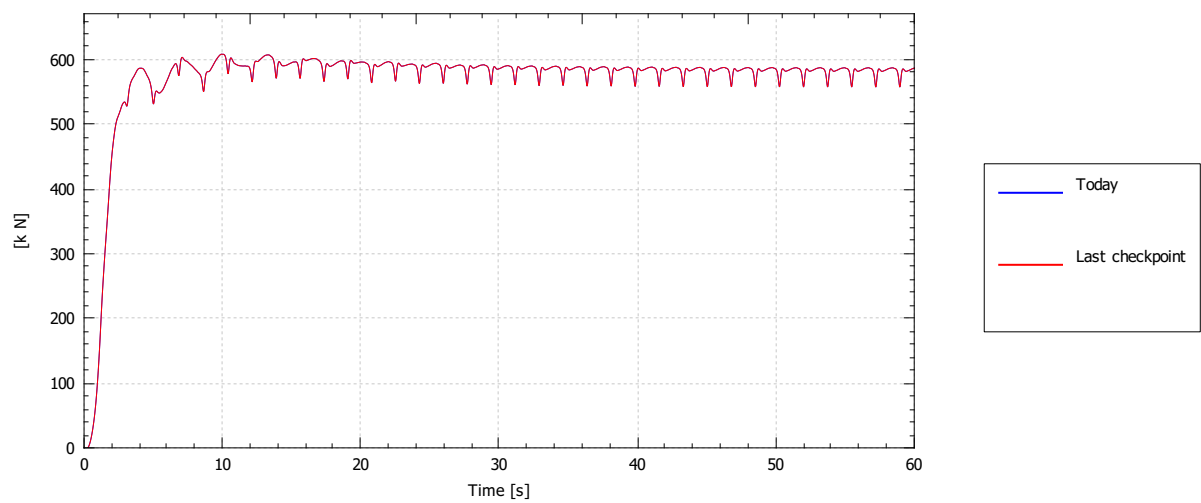


Load case: KI

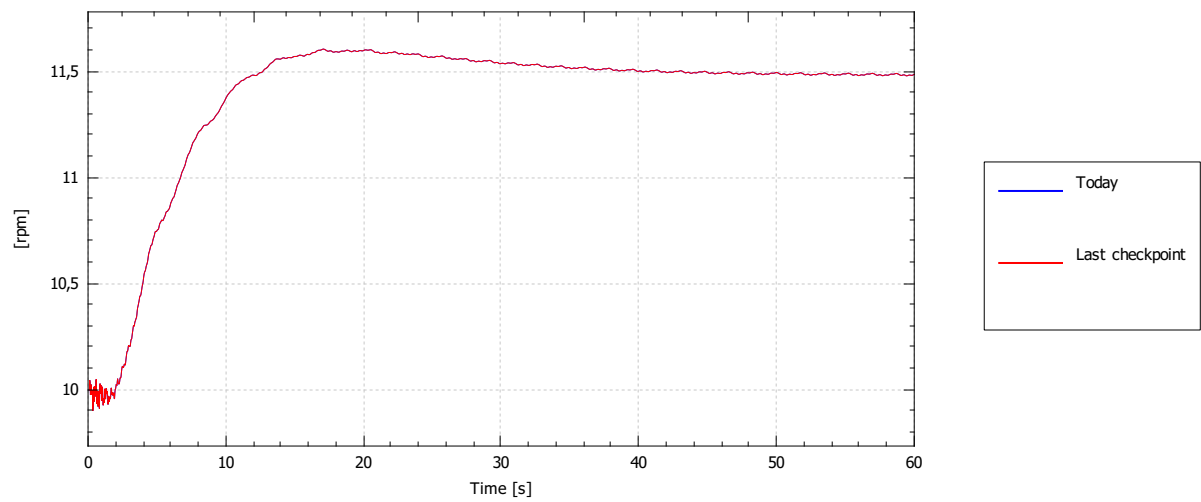
Rotor



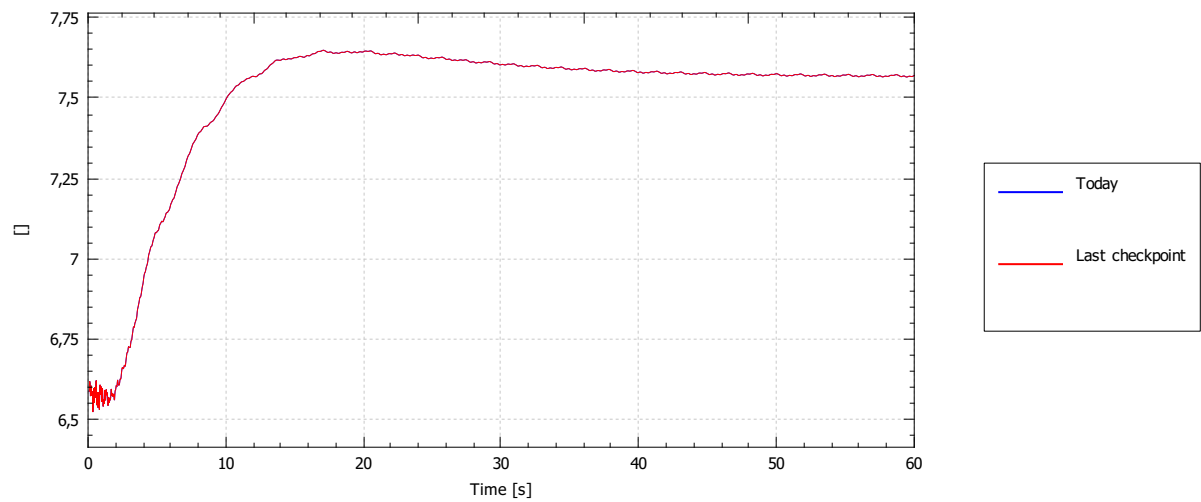
Thrust (aero)



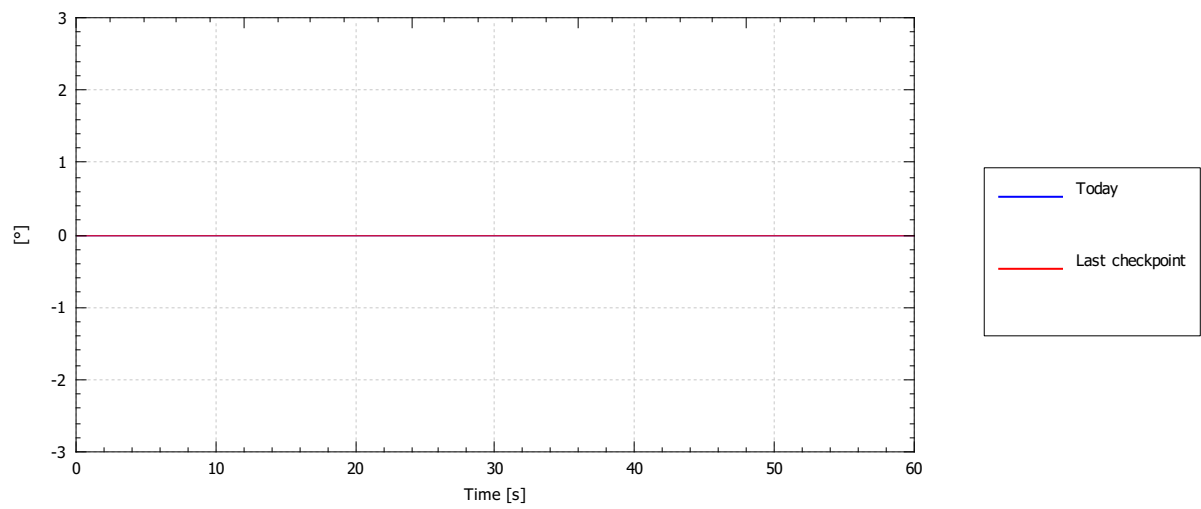
RPM



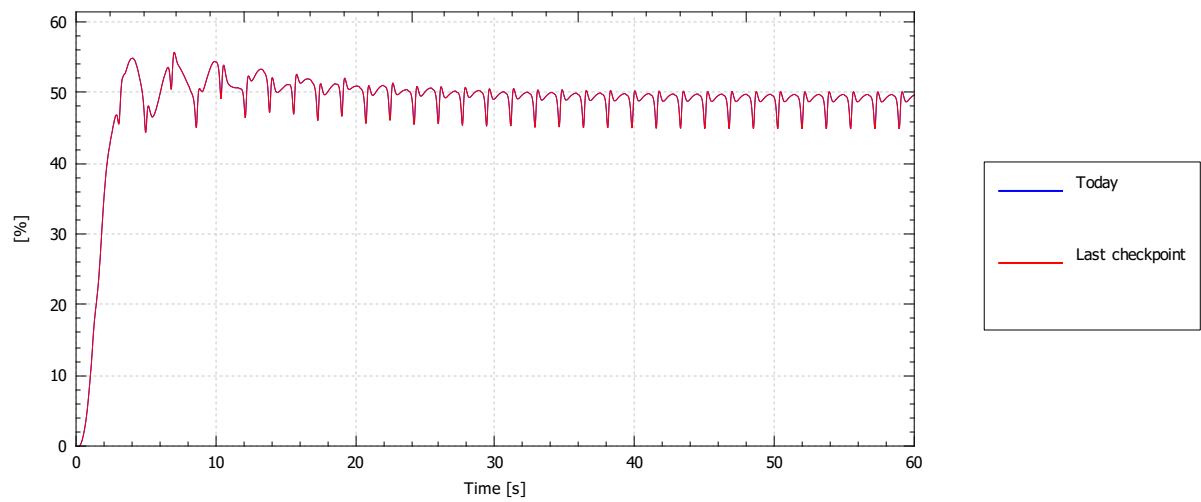
TSR



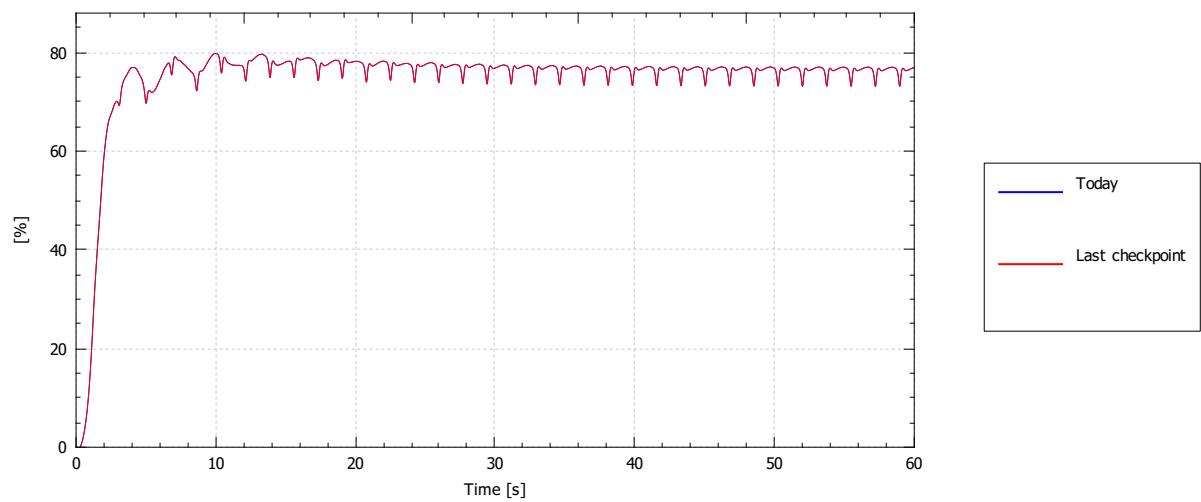
Representative demanded pitch angle



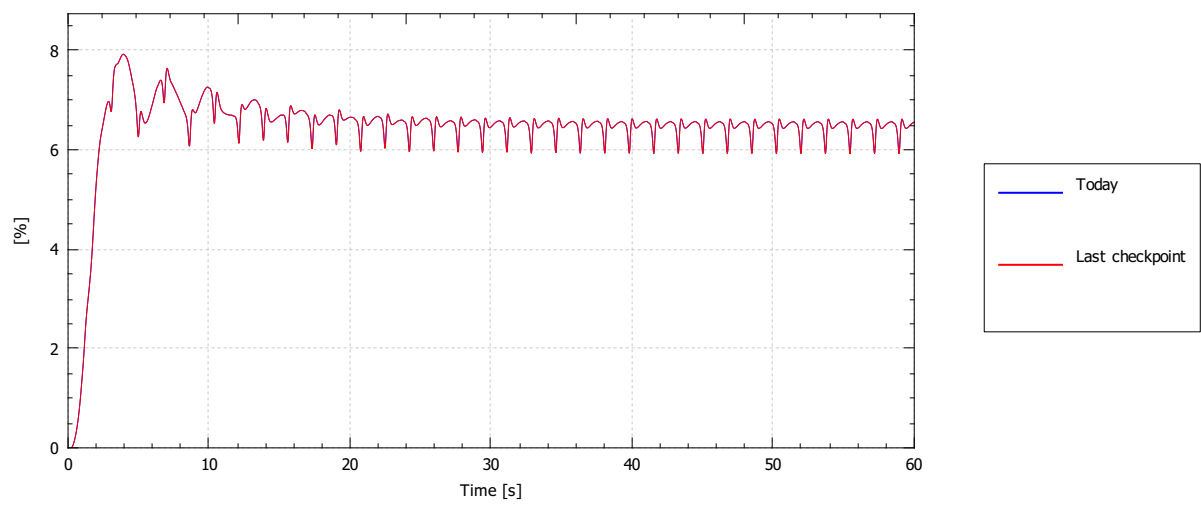
Power coef. (CP)



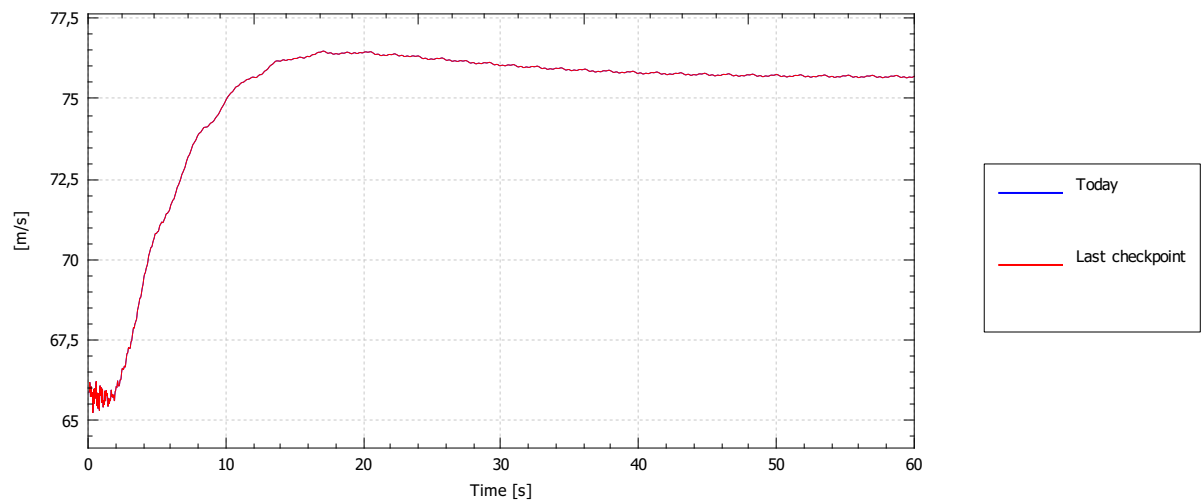
Thrust coef. (CT)



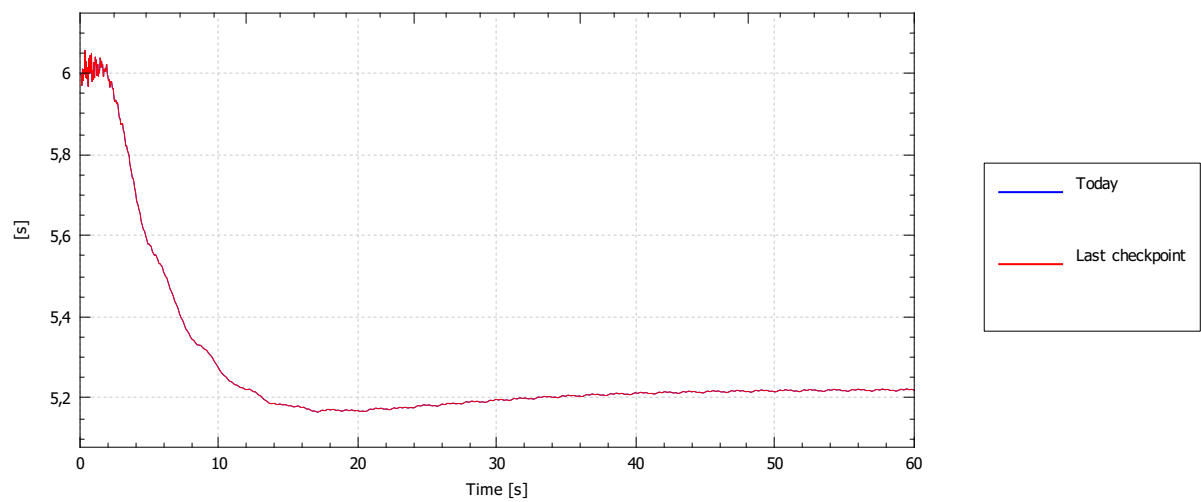
Torque coef. (CQ)



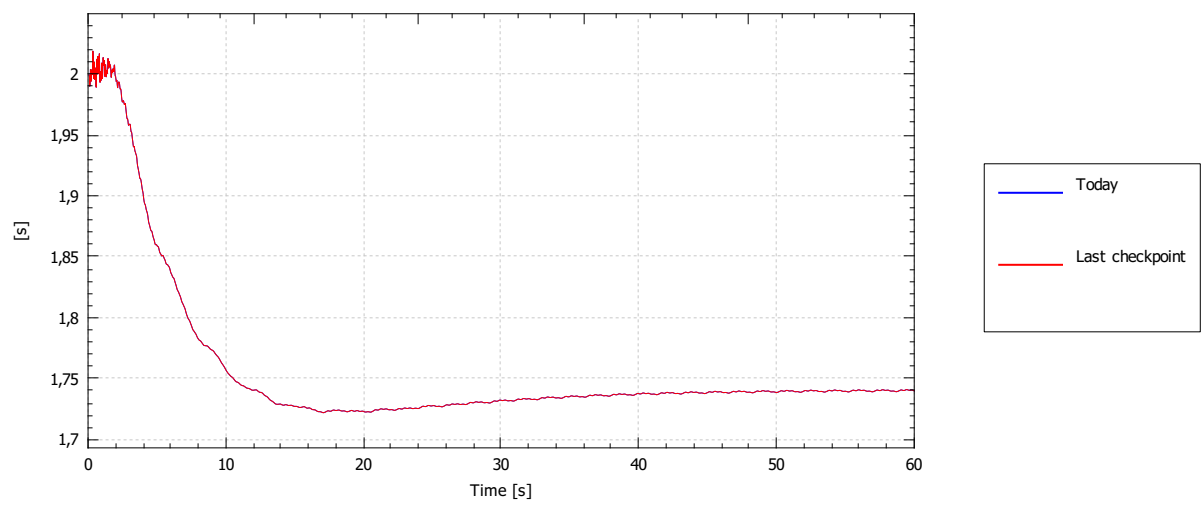
Tip speed



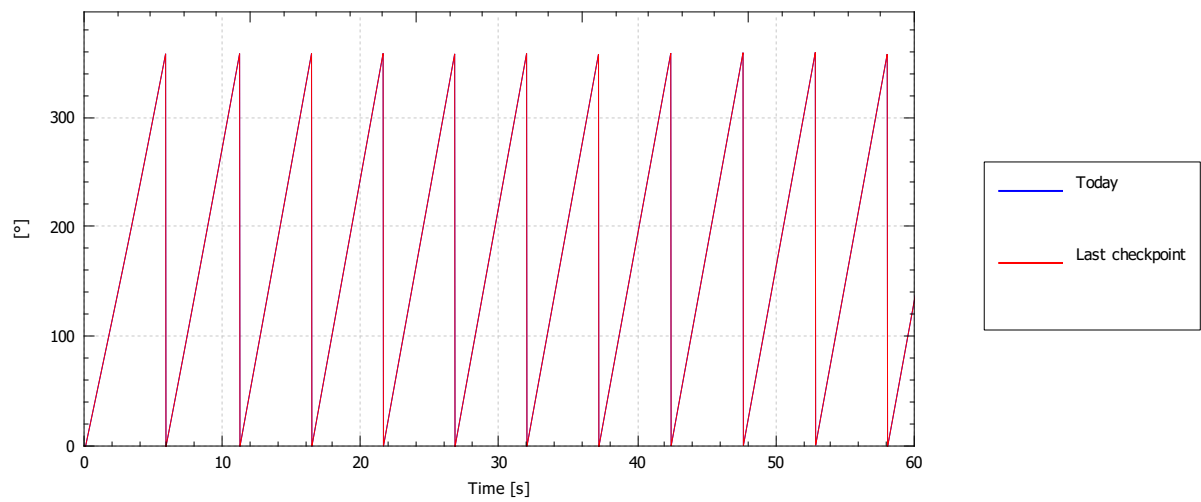
1P (one revolution)



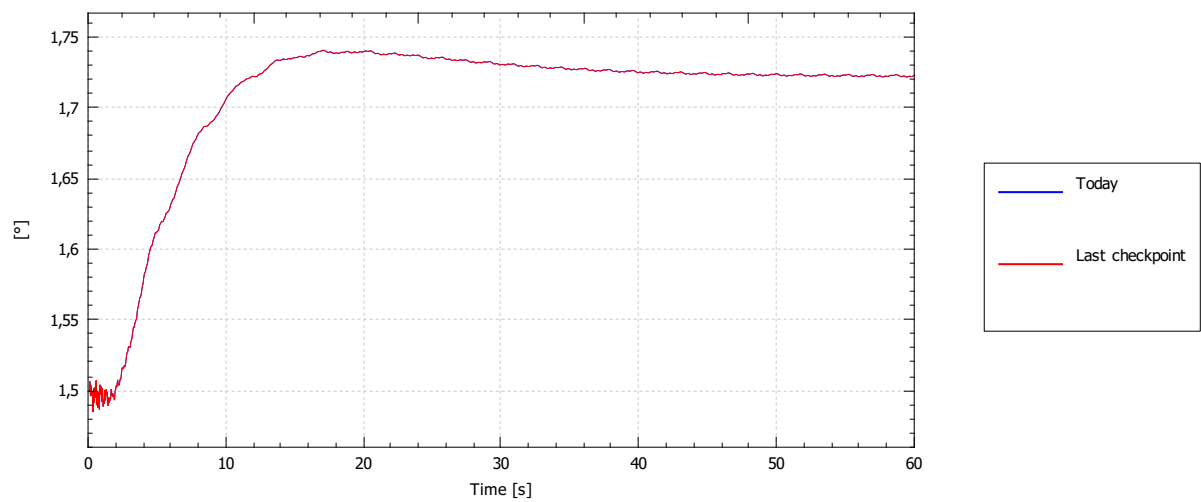
nP (blade passing)



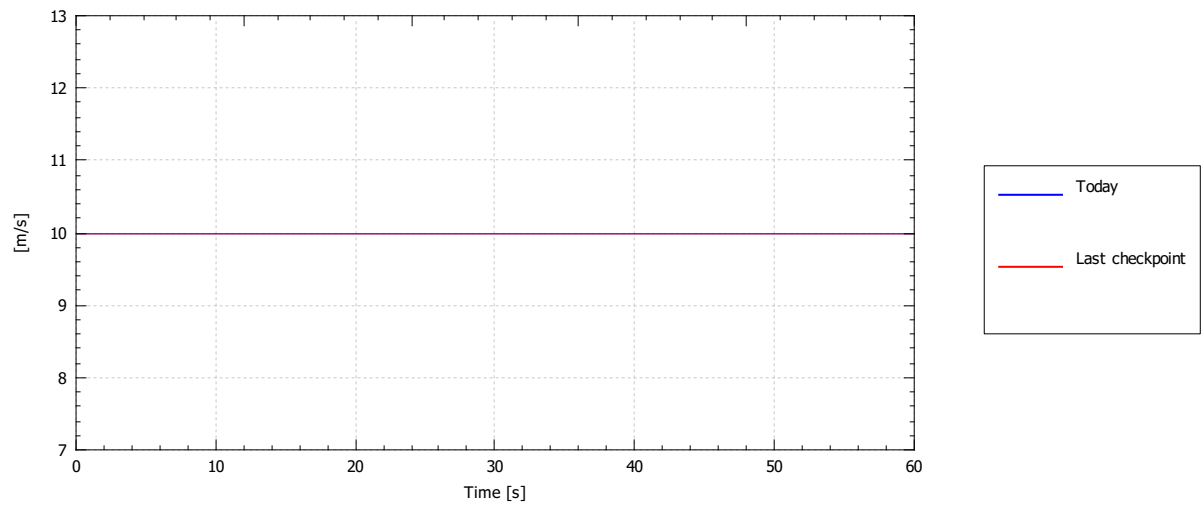
Azimuth angle



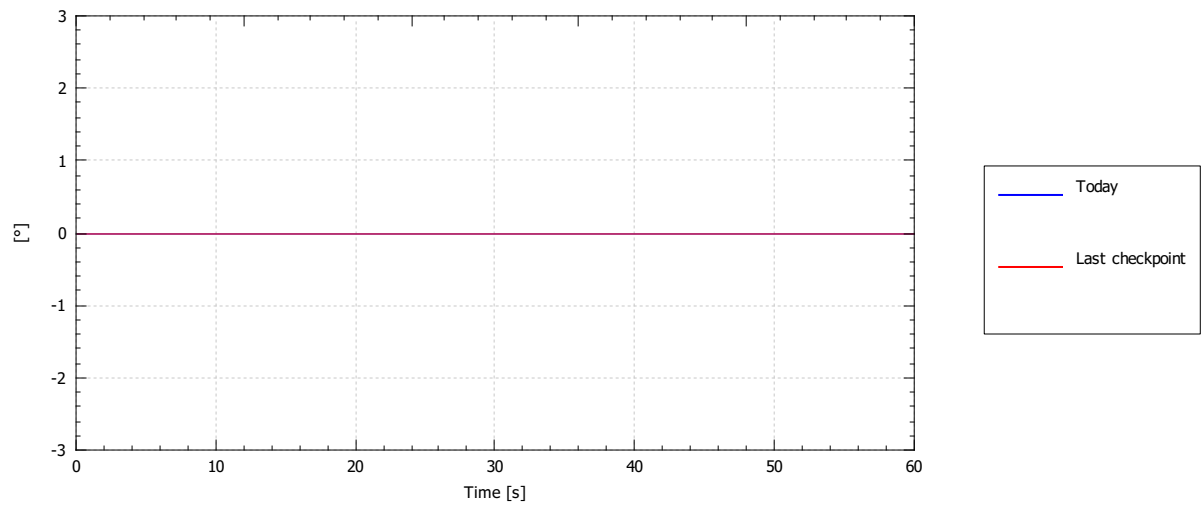
Rotation per timestep



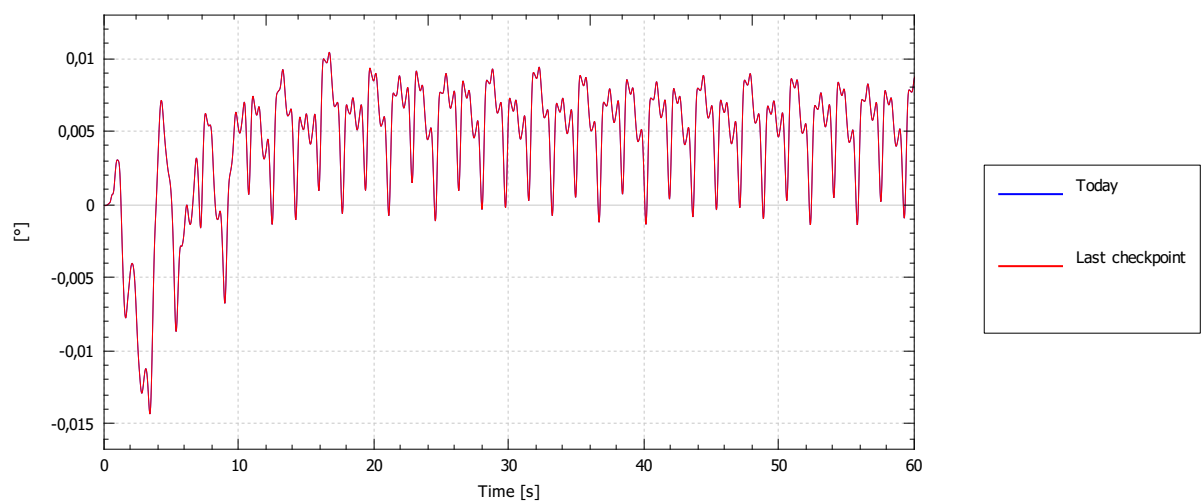
Wind speed at hub, magnitude



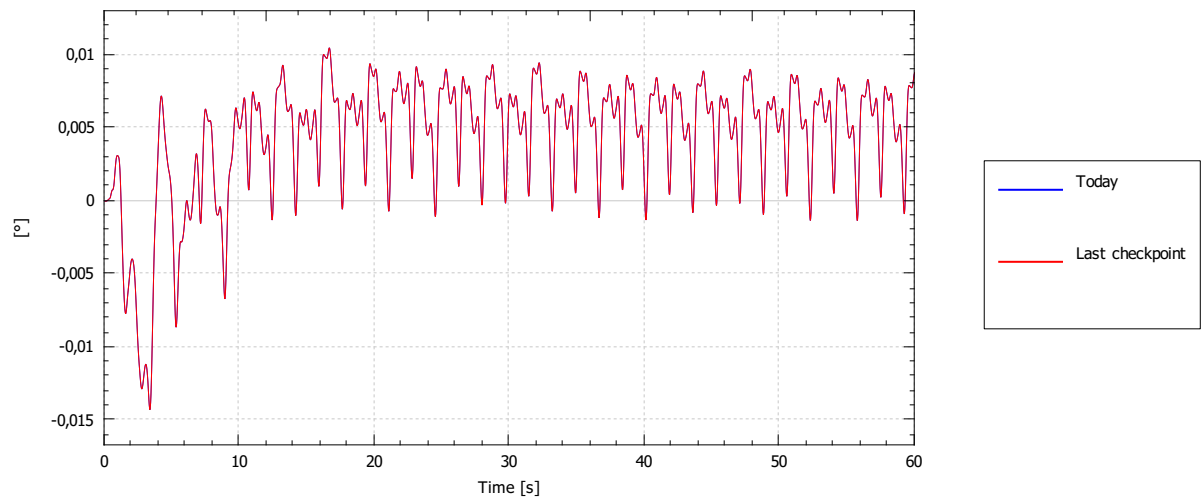
Wind angle at hub



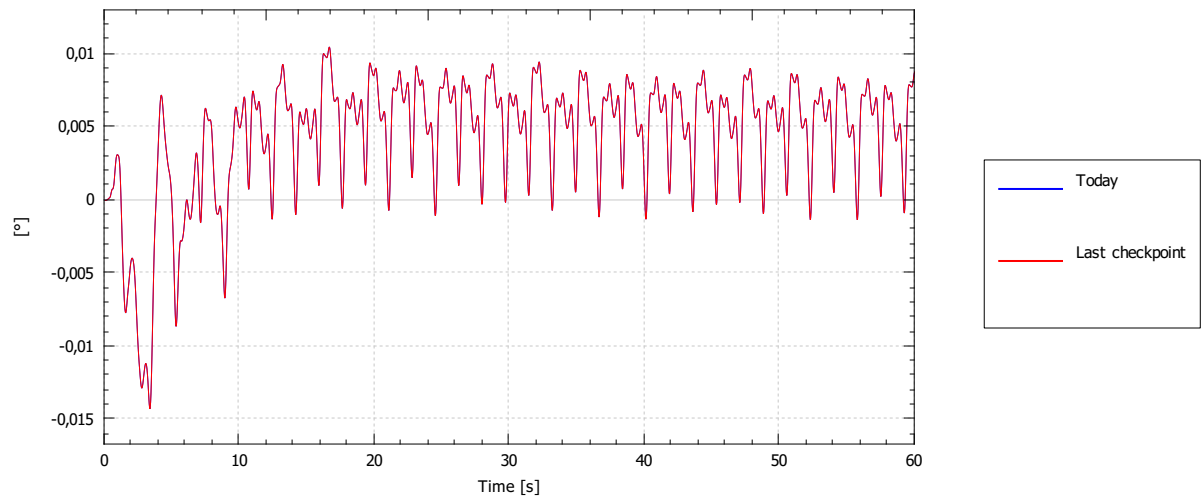
Yaw angle relative to forward



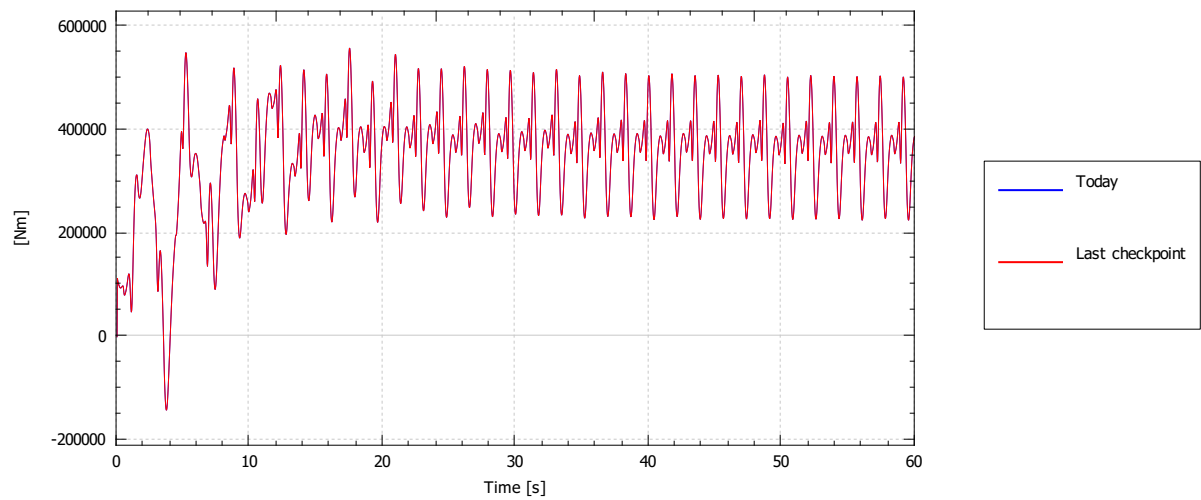
Yaw angle to reference direction



Yaw error

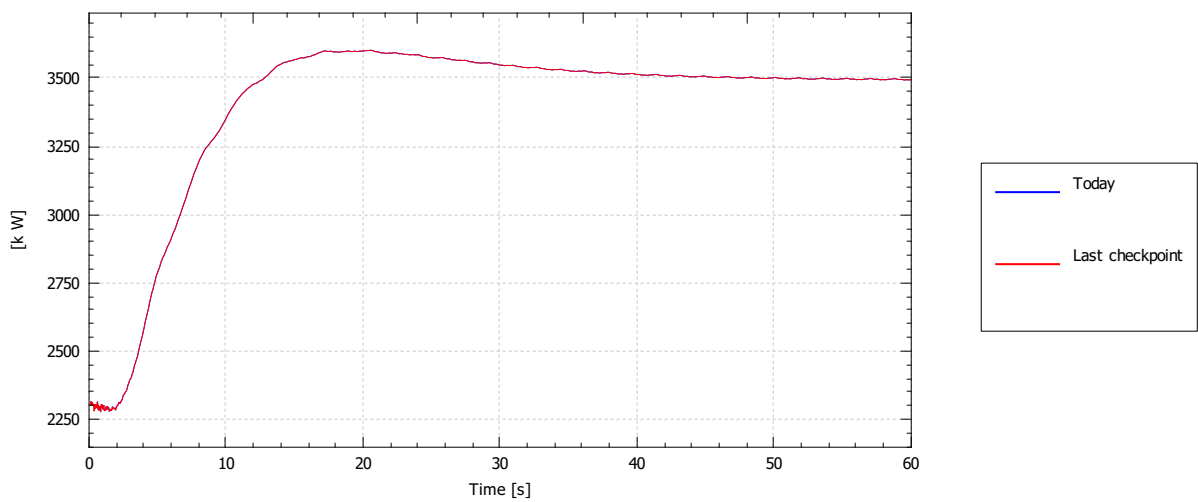


Torque about yaw axis

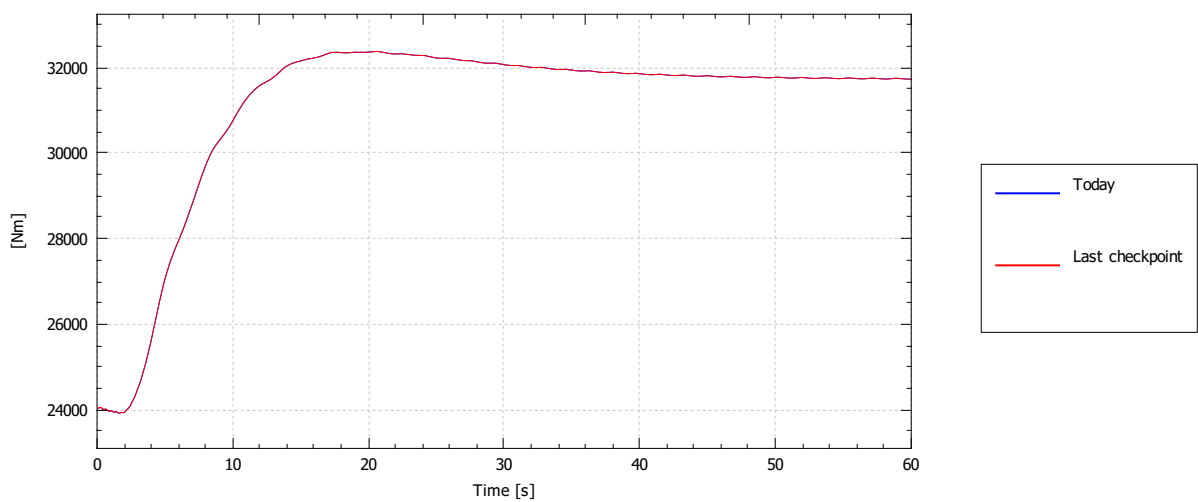


Generator

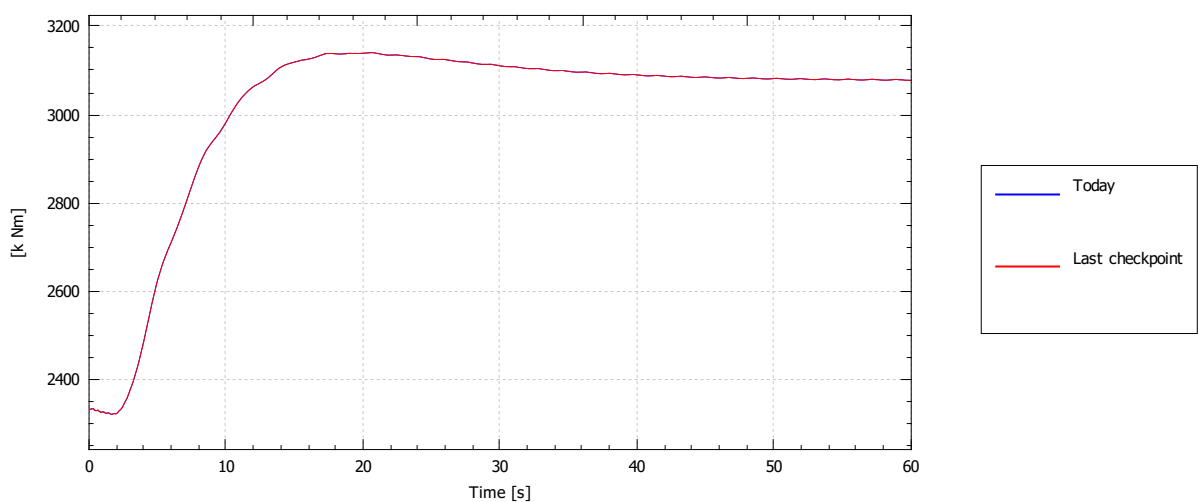
Power (electrical)



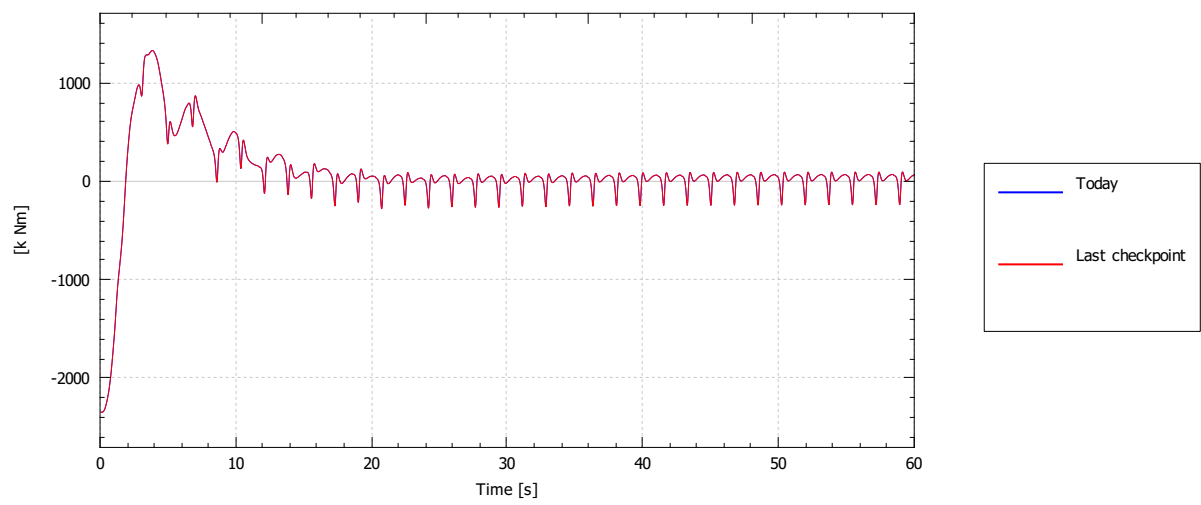
Torque



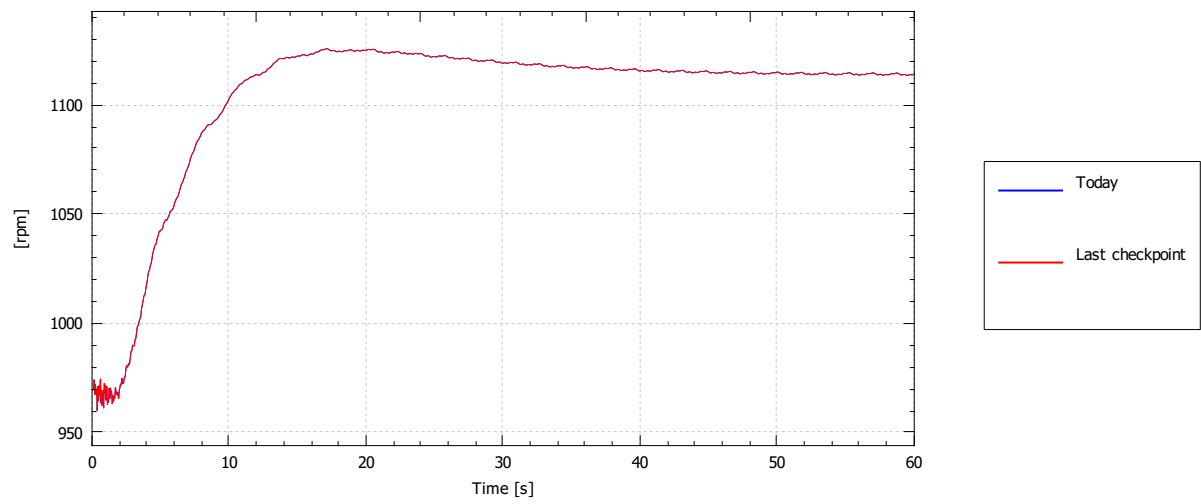
Torque on main shaft



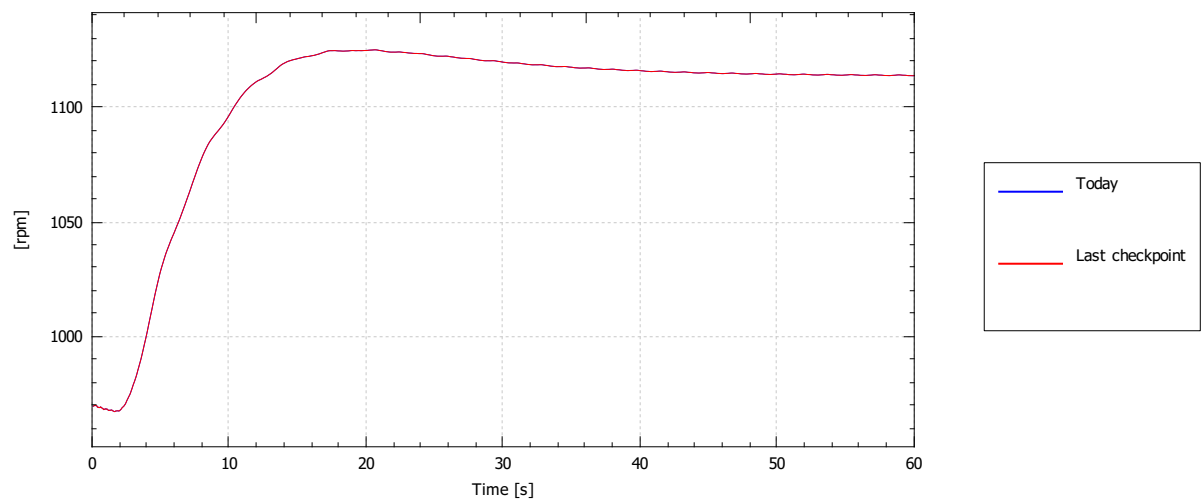
Torque diff. on main shaft



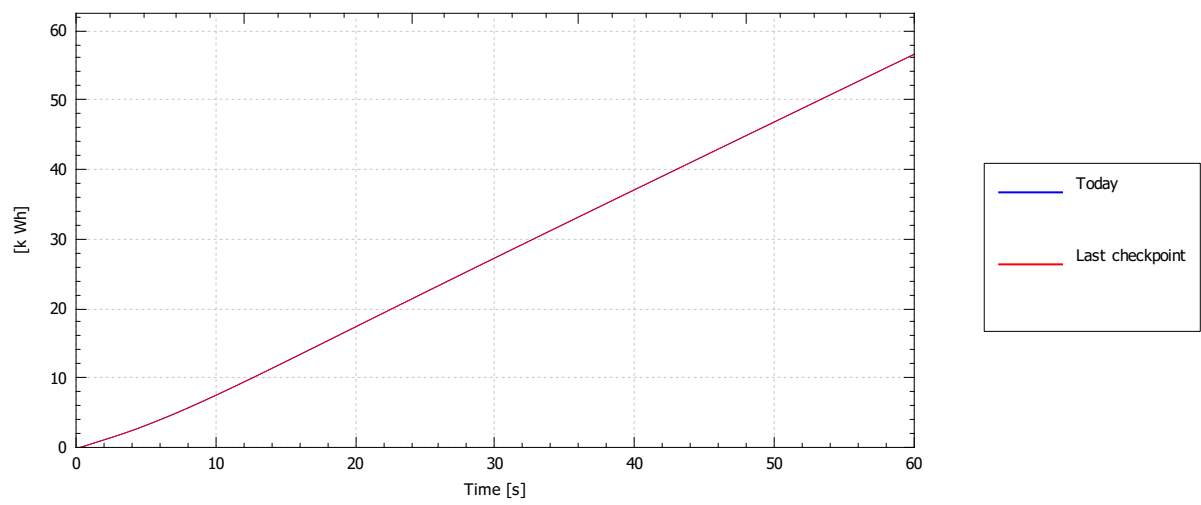
RPM



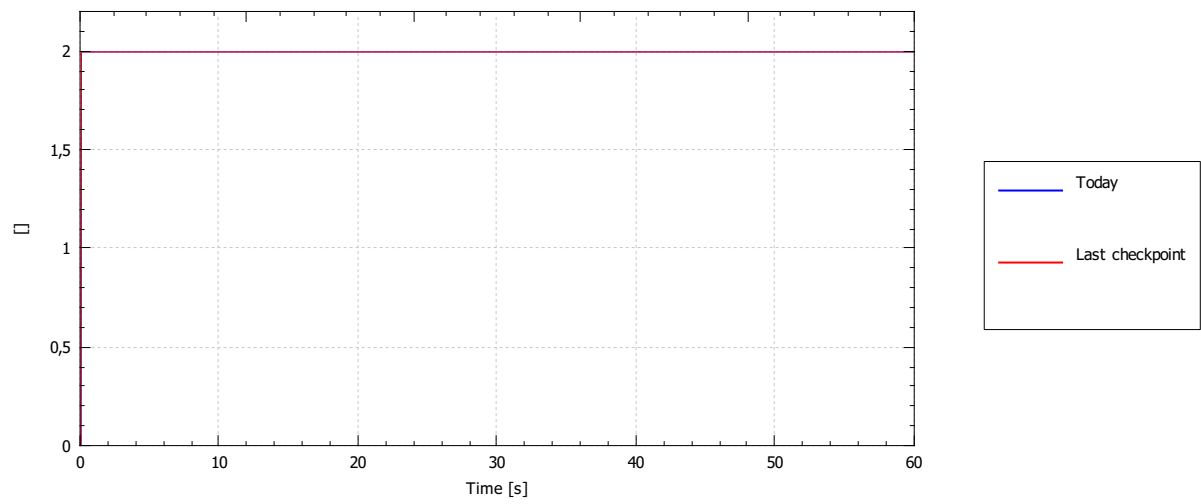
Filtered RPM



Electricity production

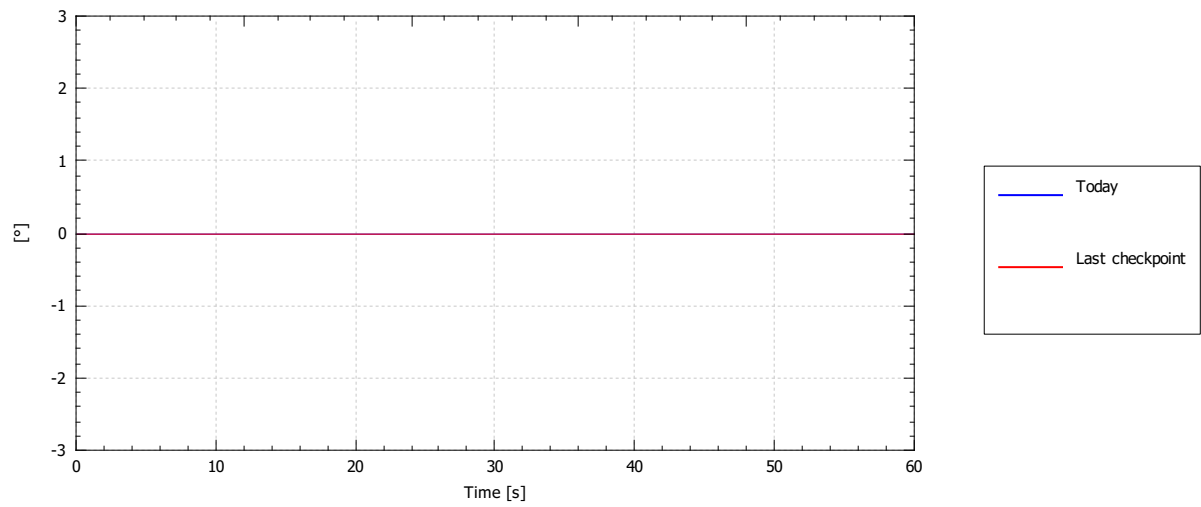


Region

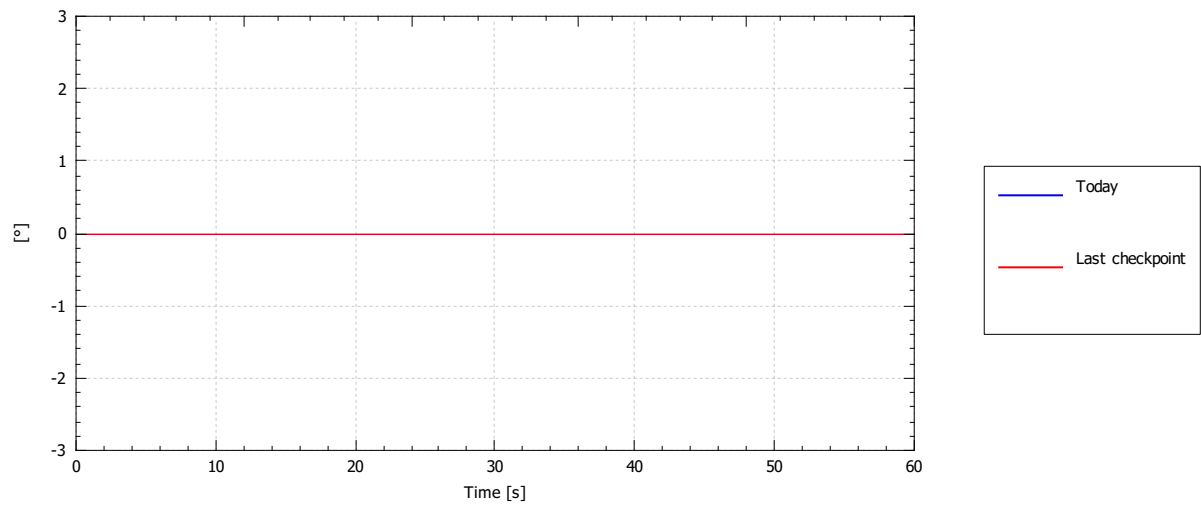


Demanded pitch controller

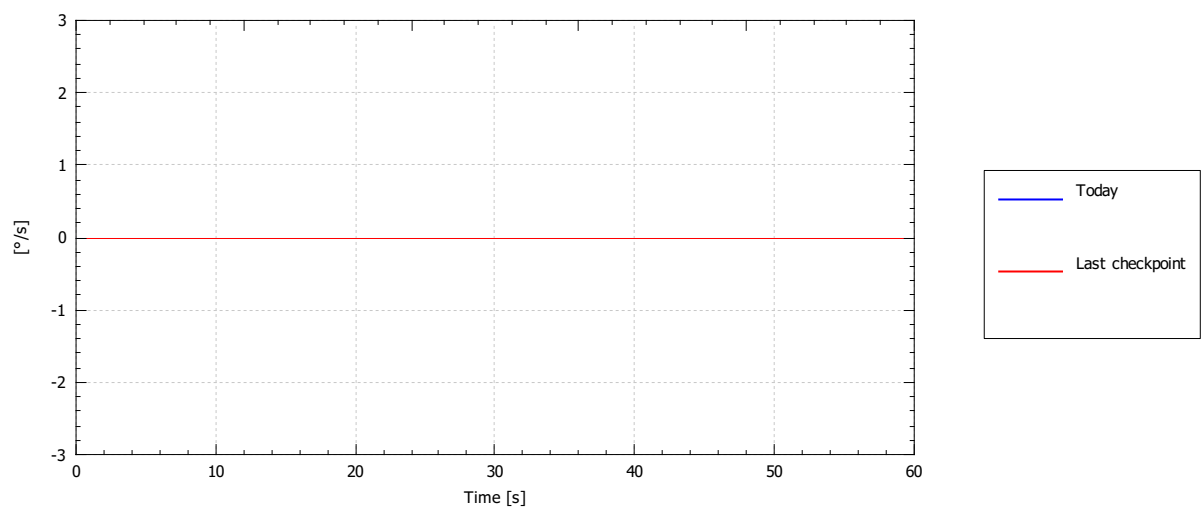
Demanded collective pitch angle



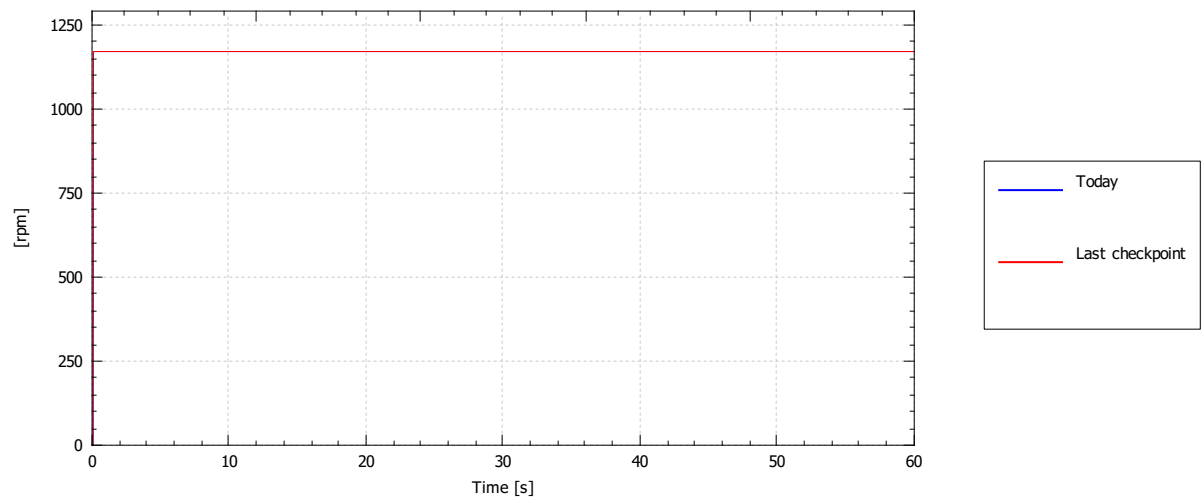
Cumulative demanded collective pitch angle



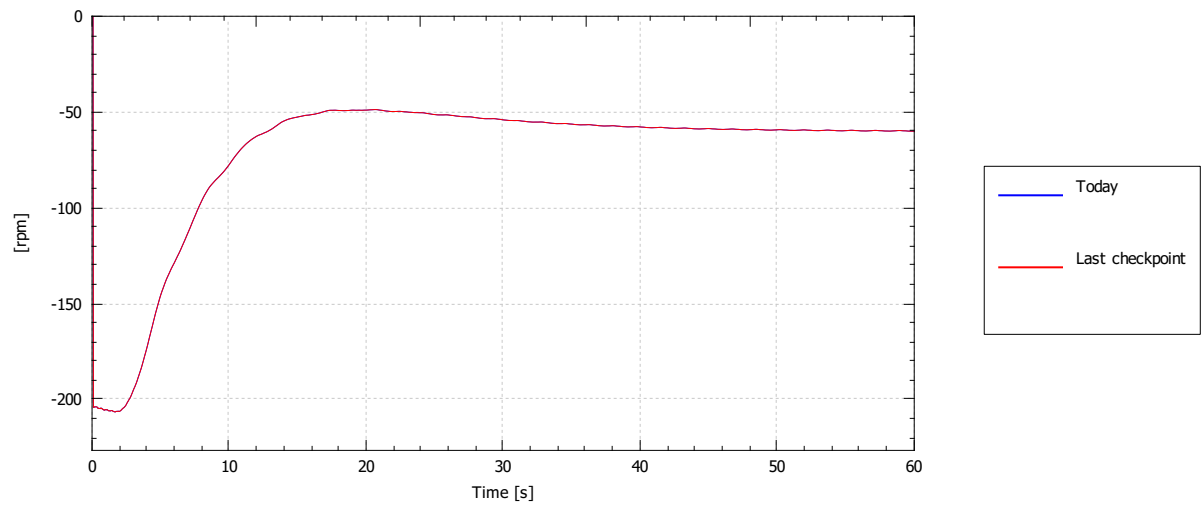
Demanded collective pitch angle rate



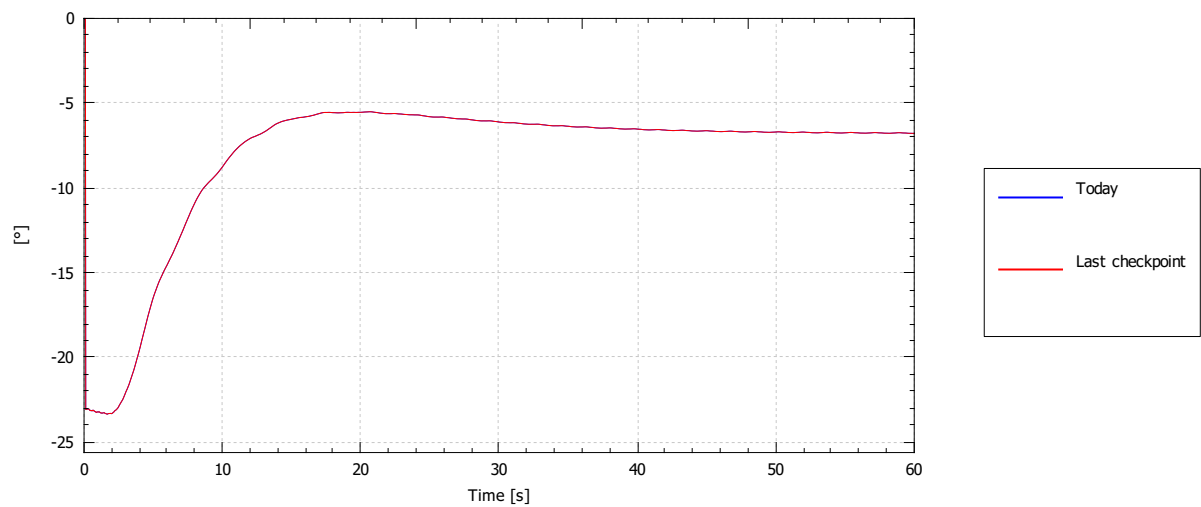
Set point



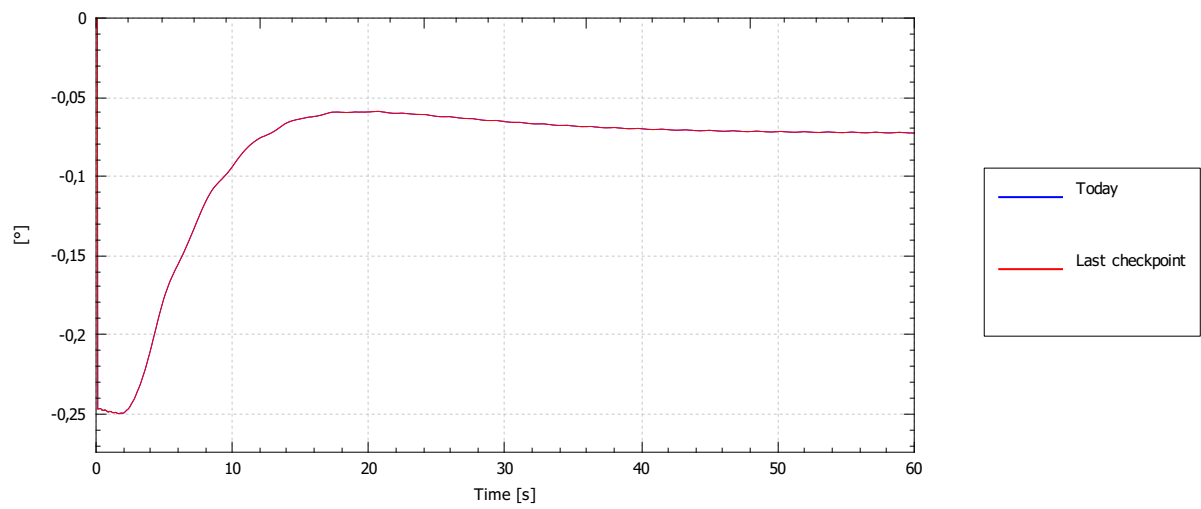
RPM error



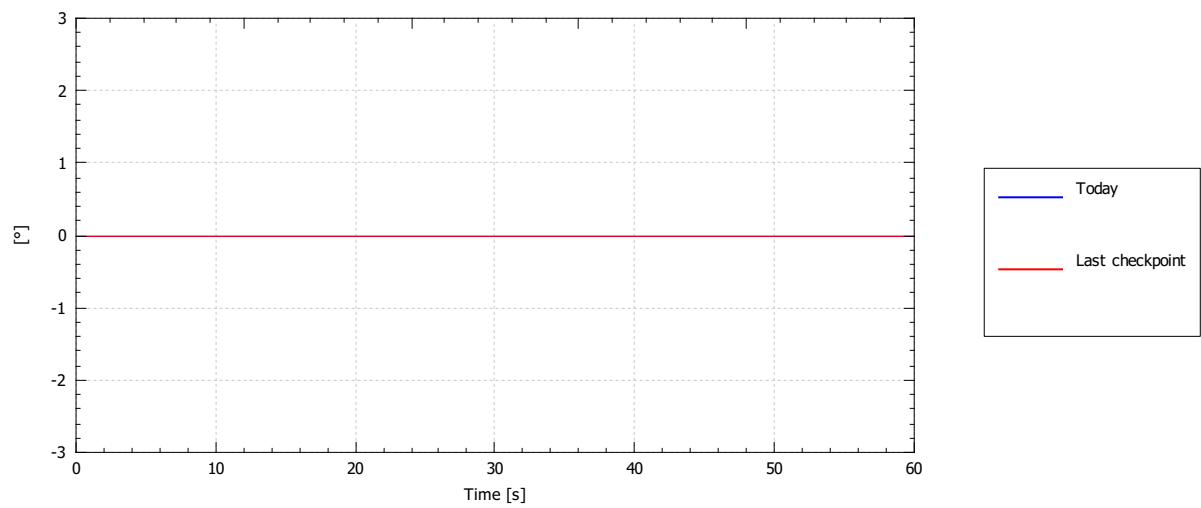
P term



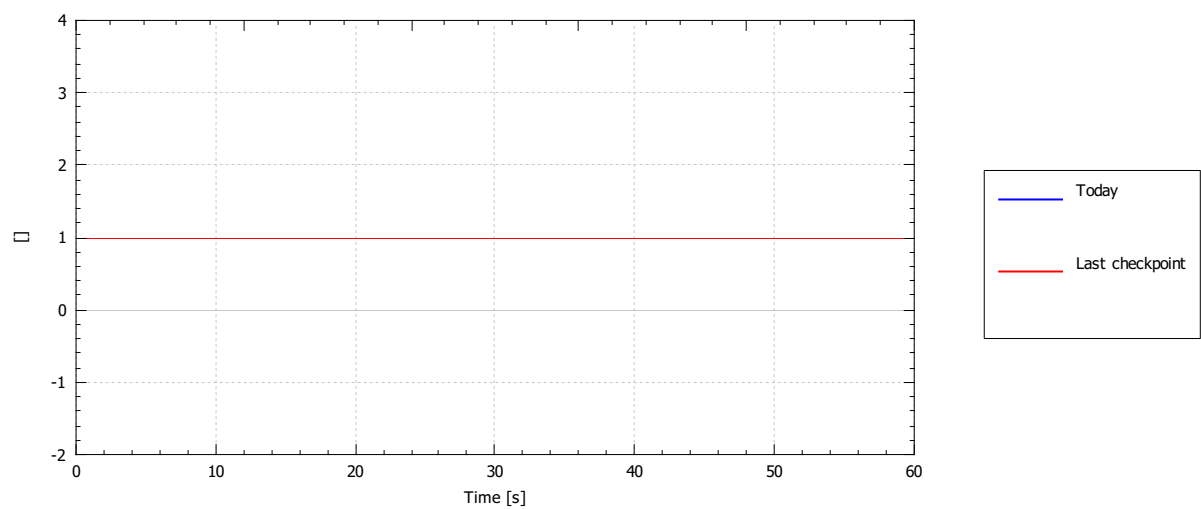
I term

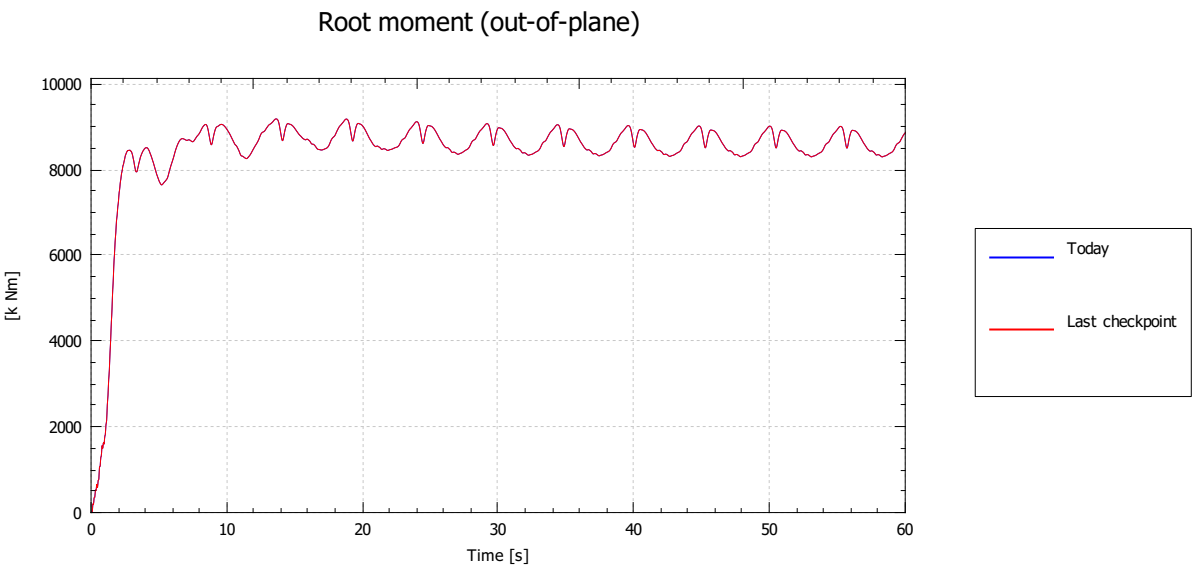
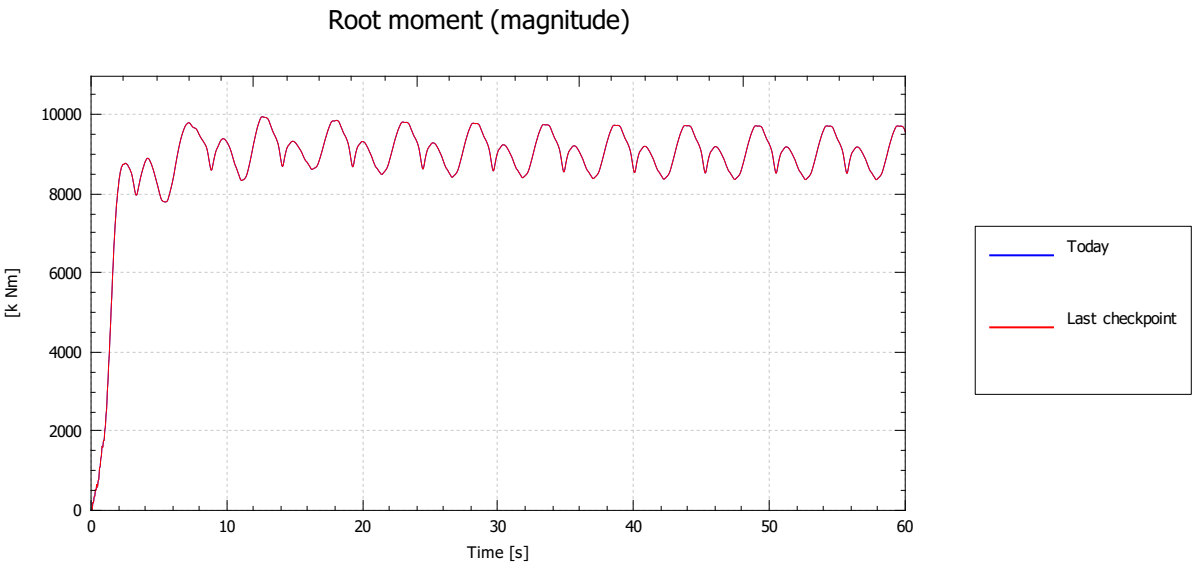
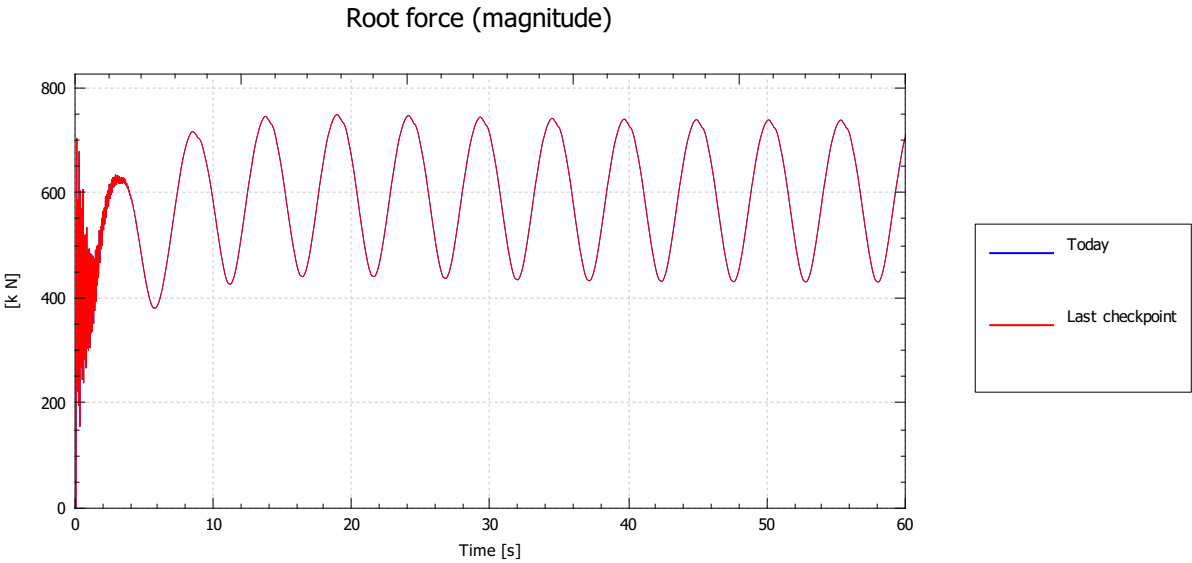


D term

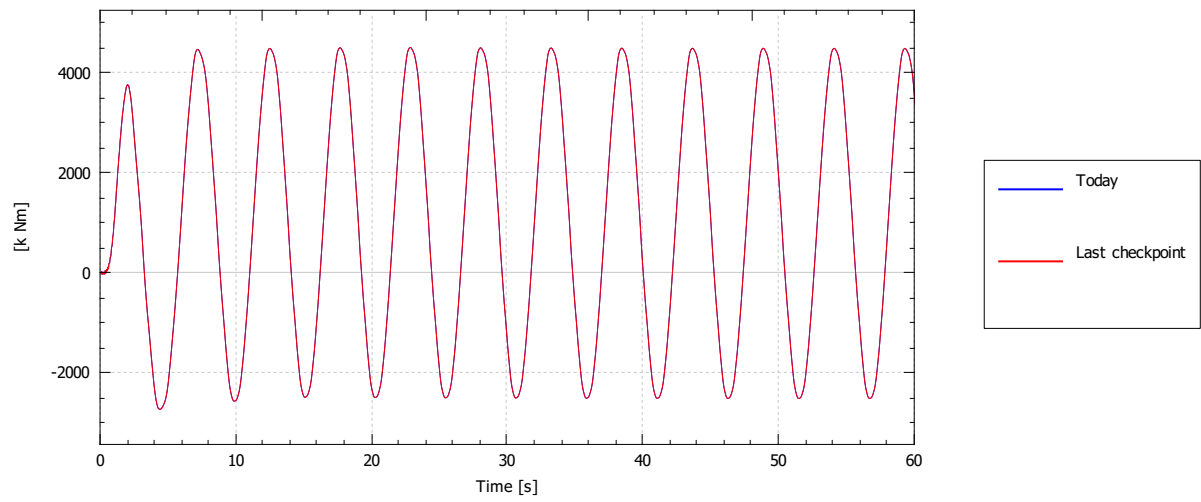


Gain scheduling factor

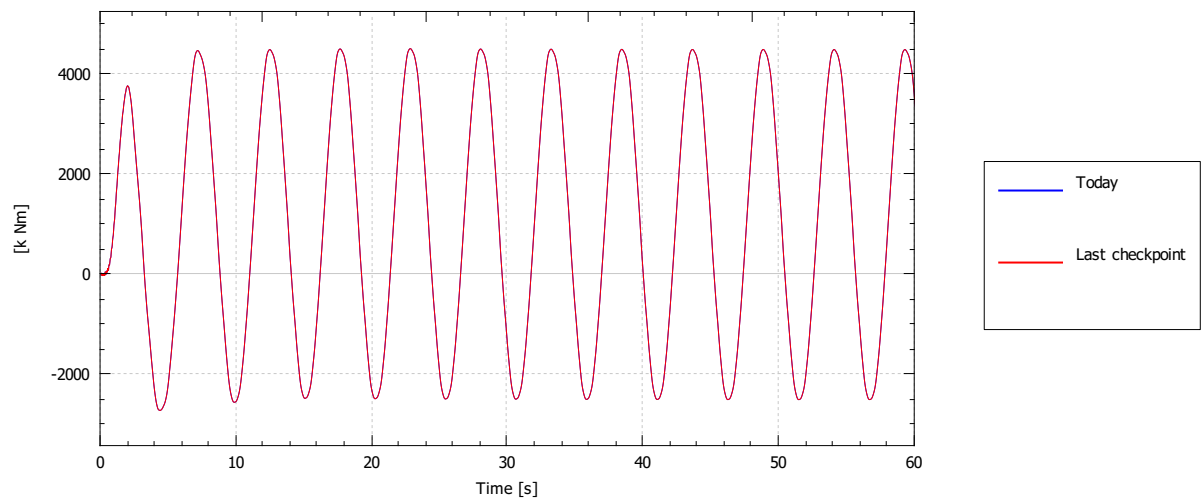




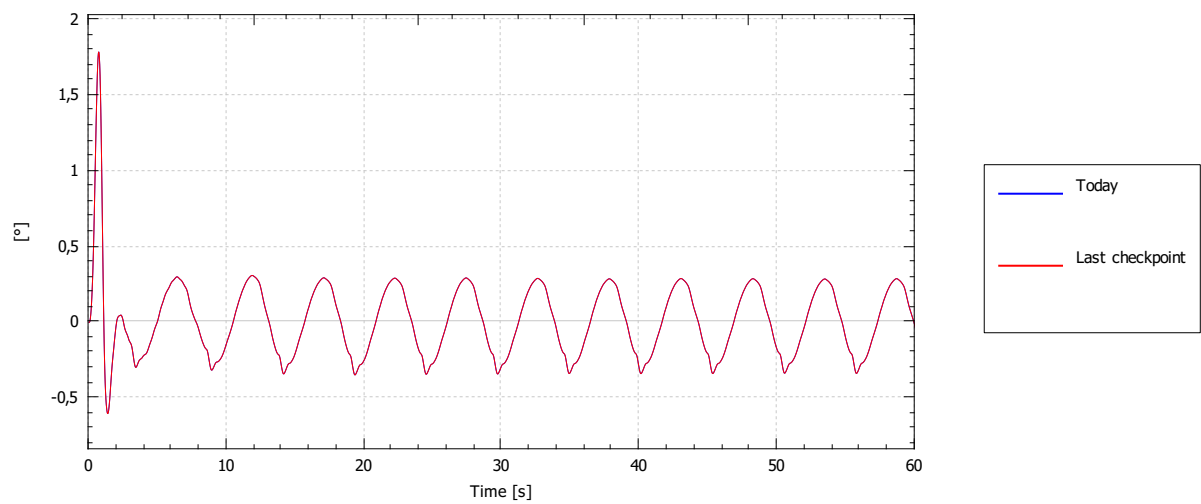
Root moment (in-plane)



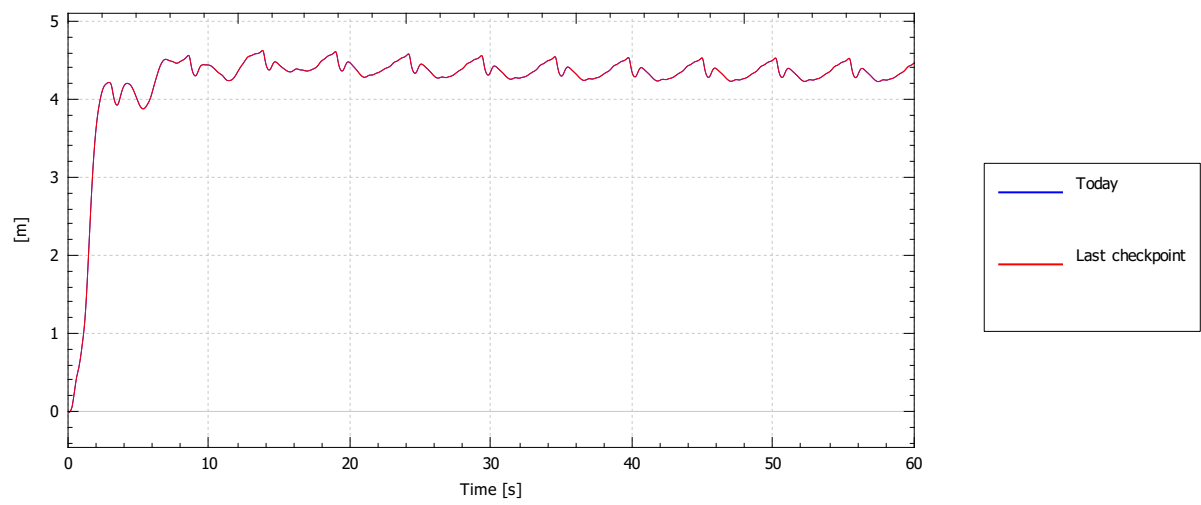
Root moment about shaft



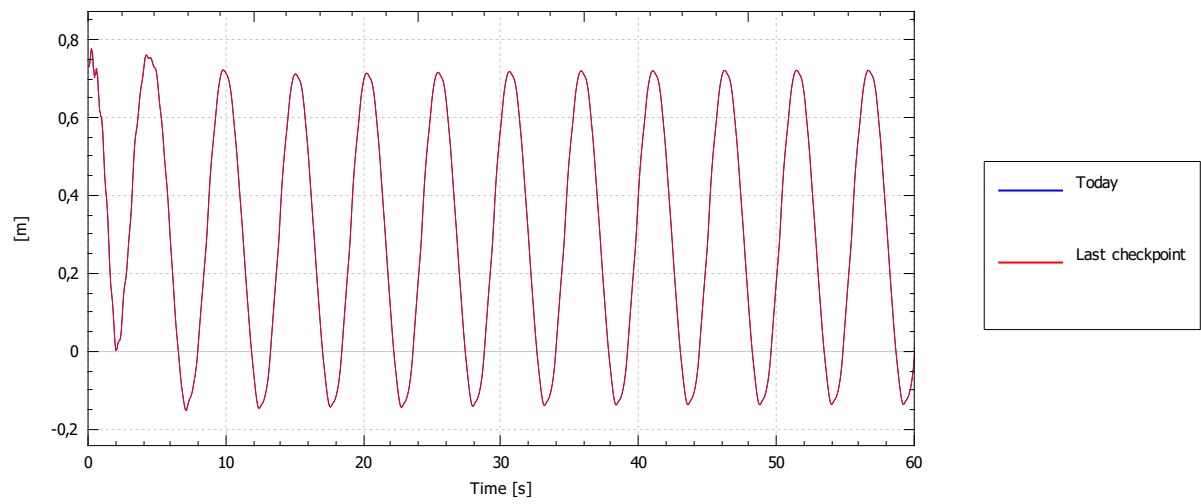
Pitch angle



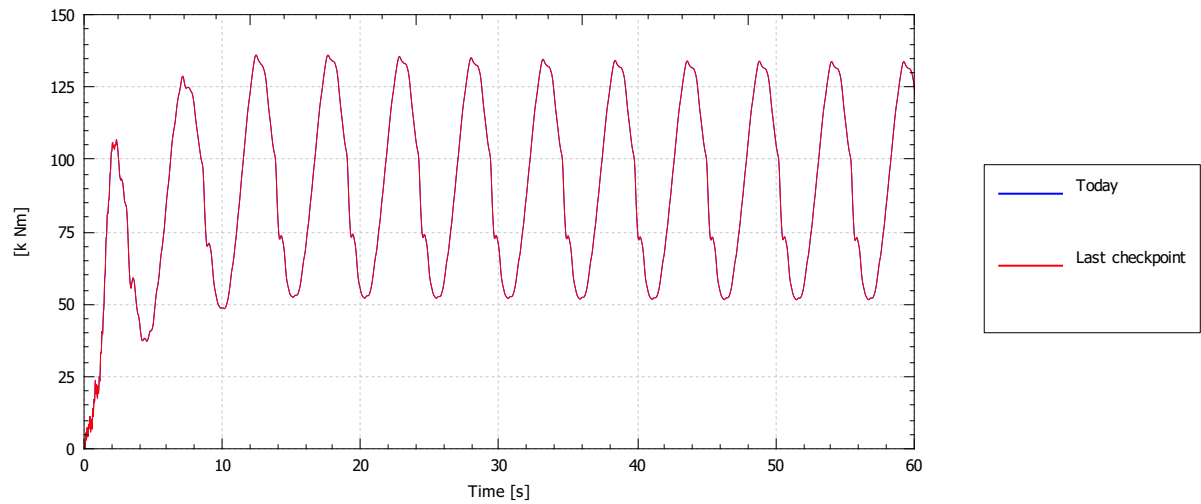
Tip deflection (out-of-plane)

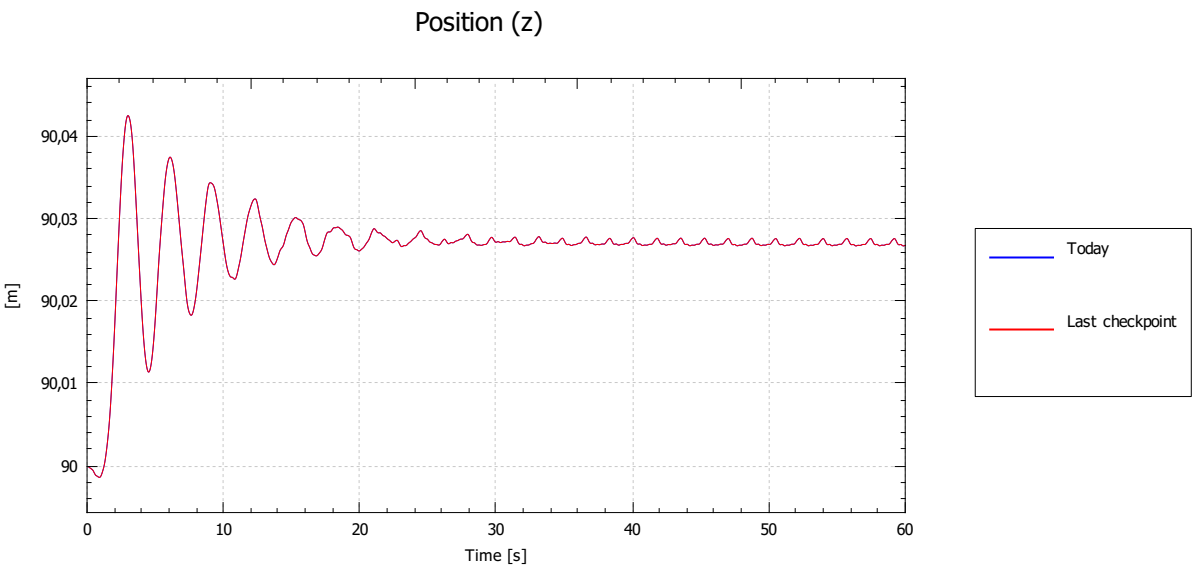
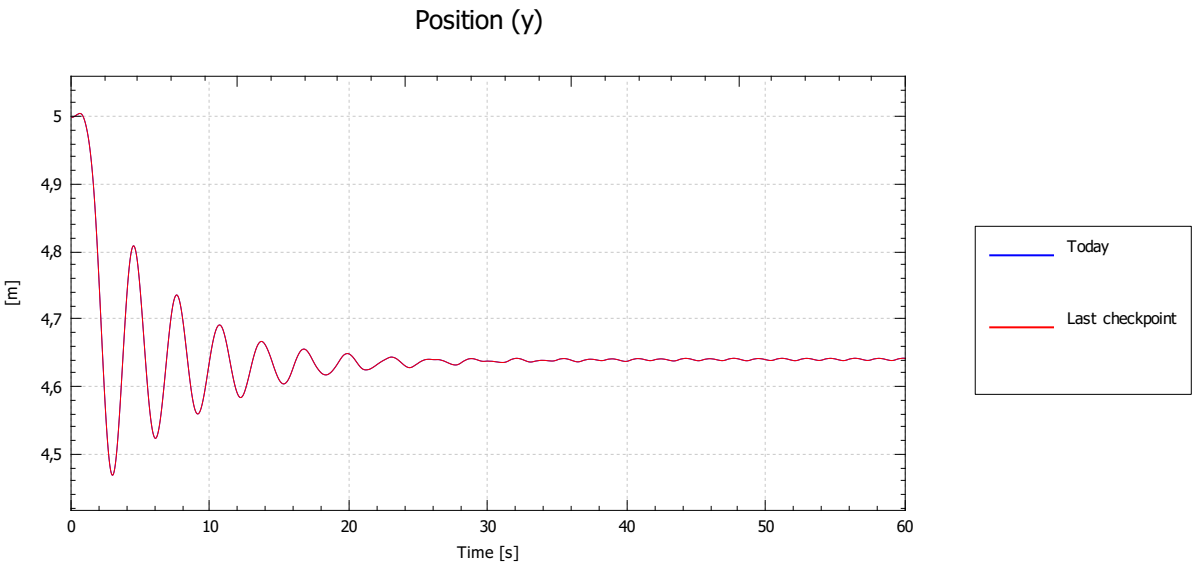
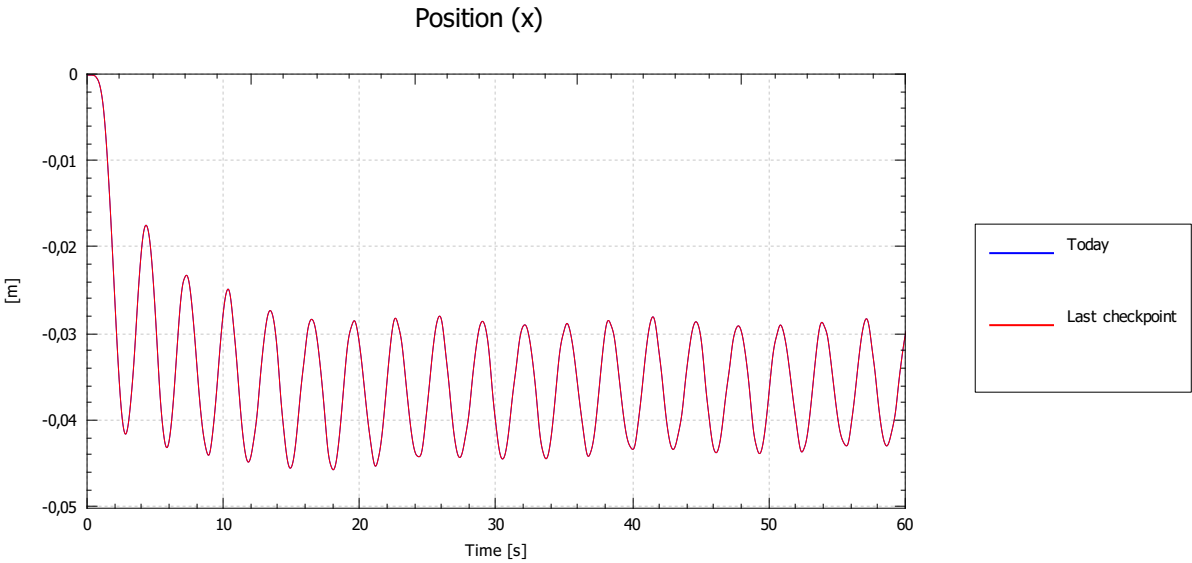


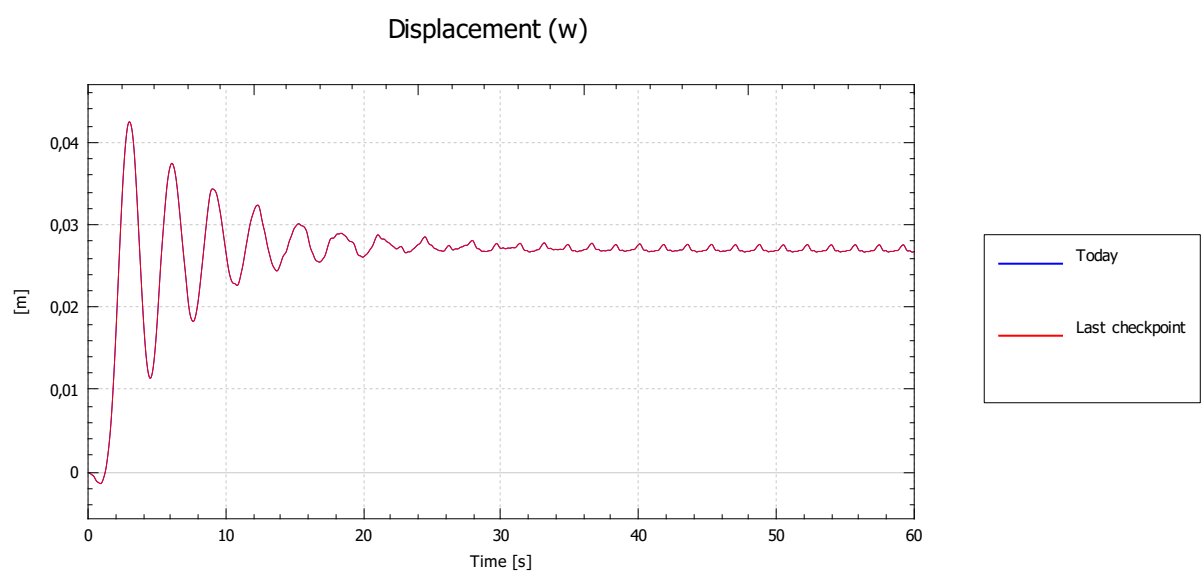
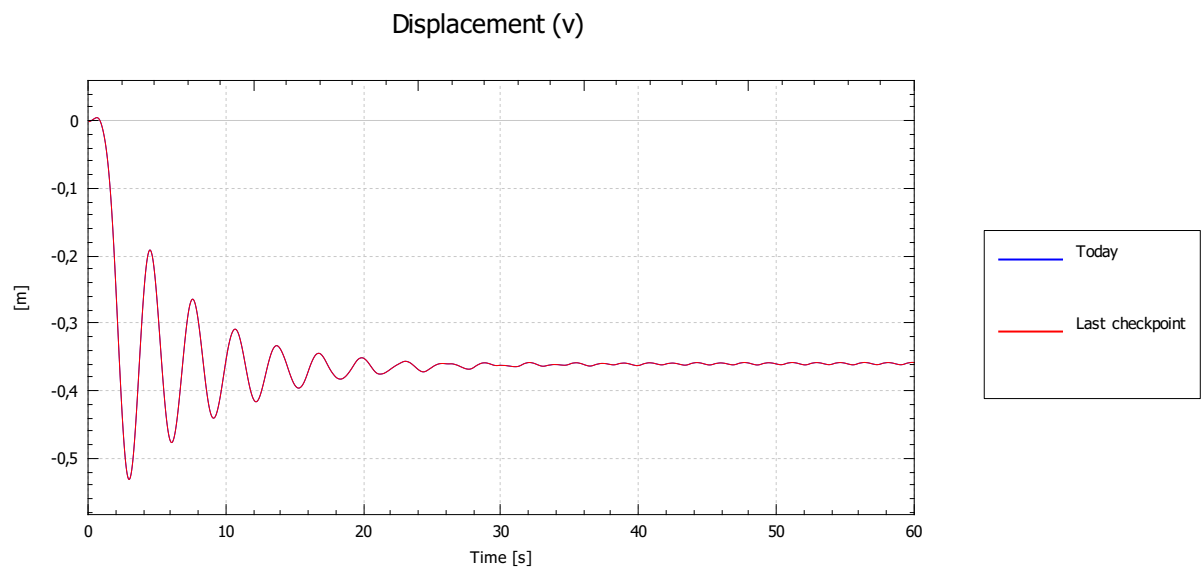
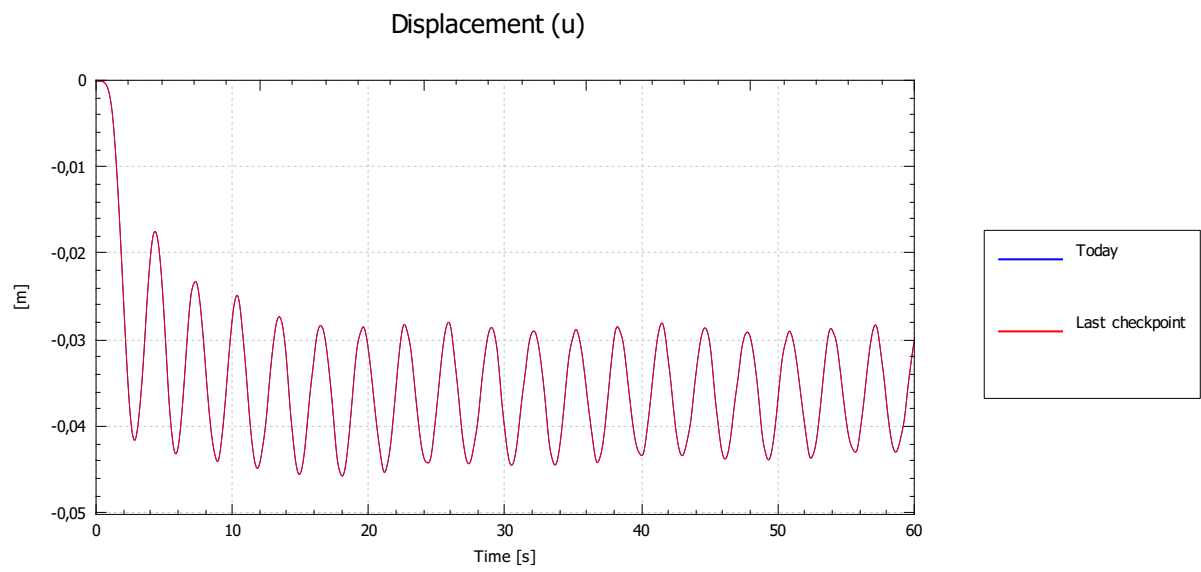
Tip deflection (in-plane)



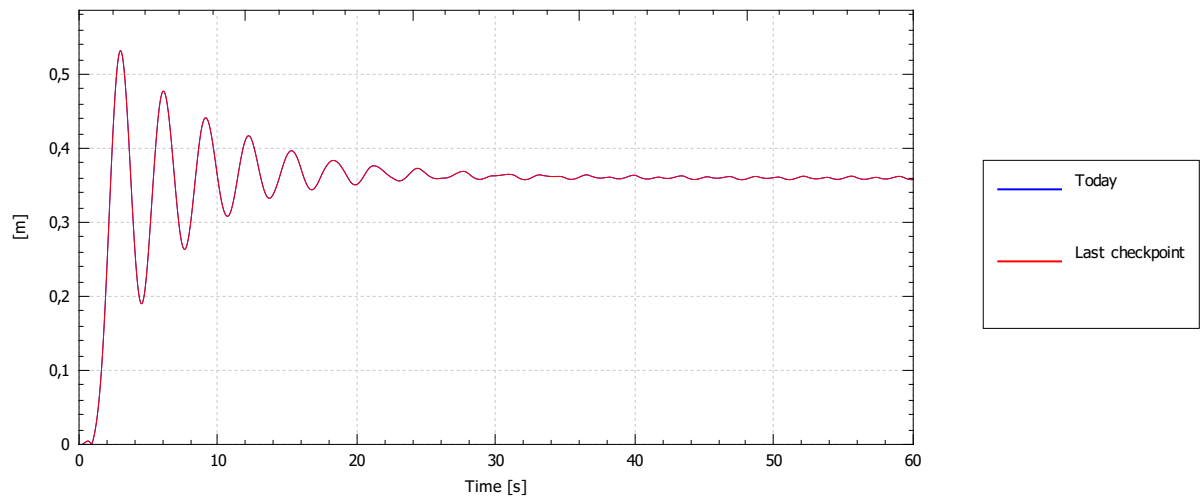
Root torque



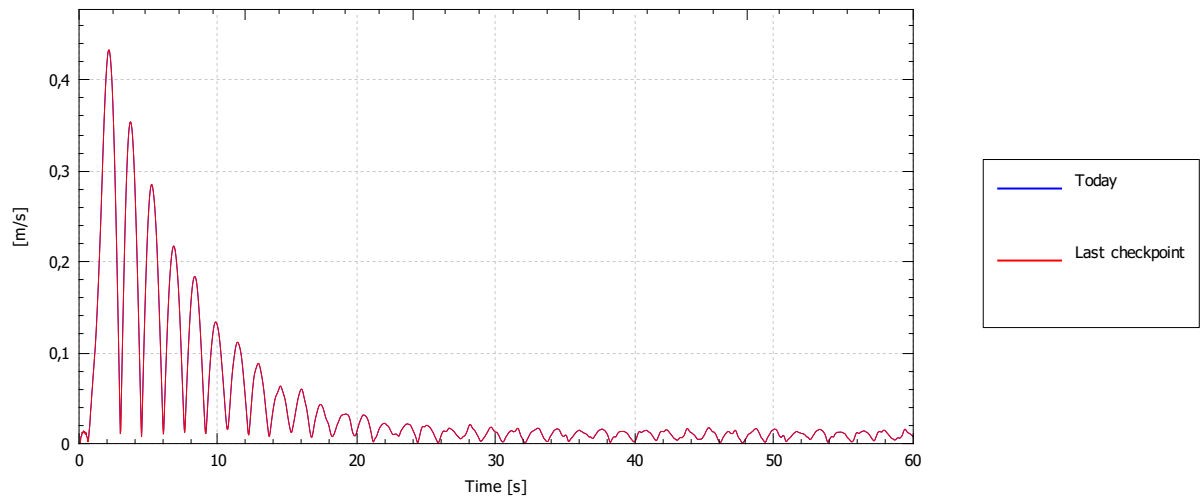




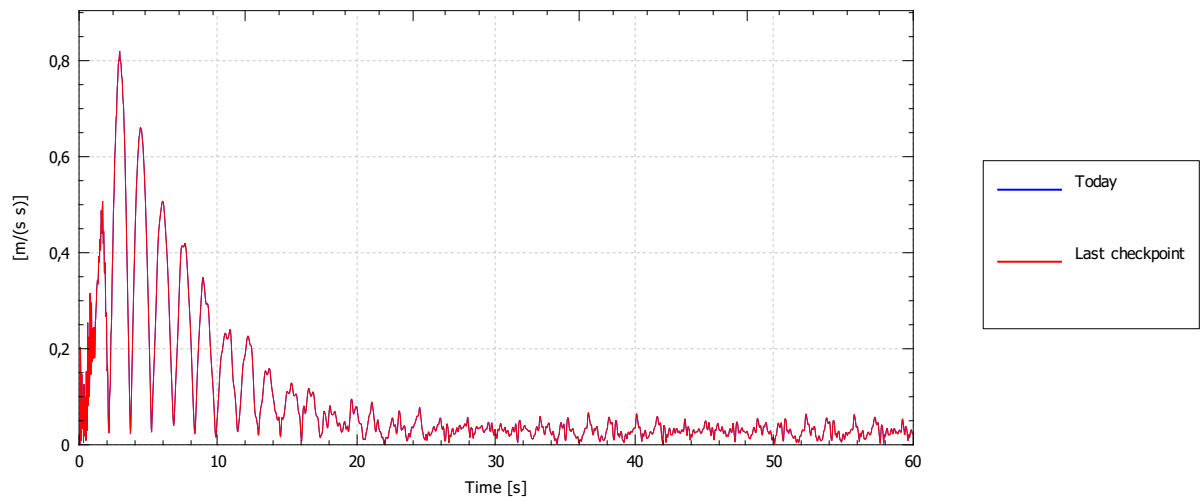
Displacement magnitude



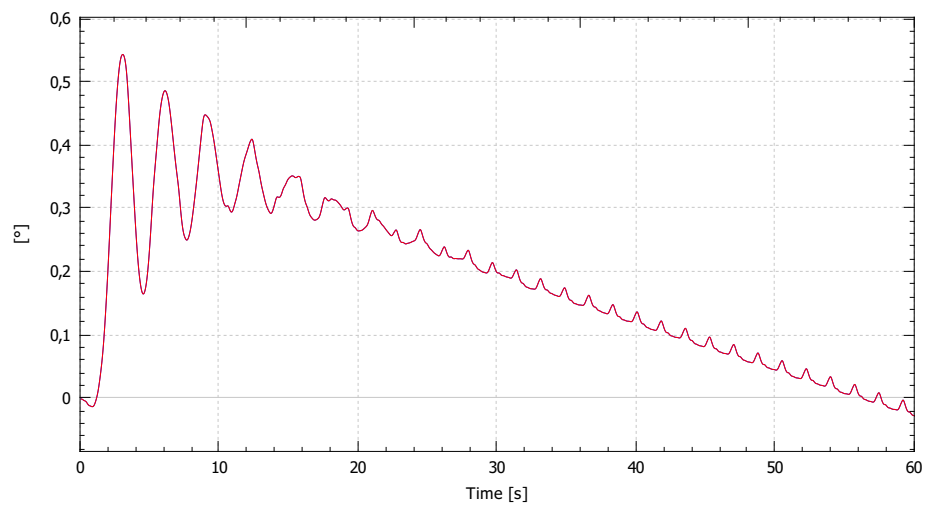
Speed



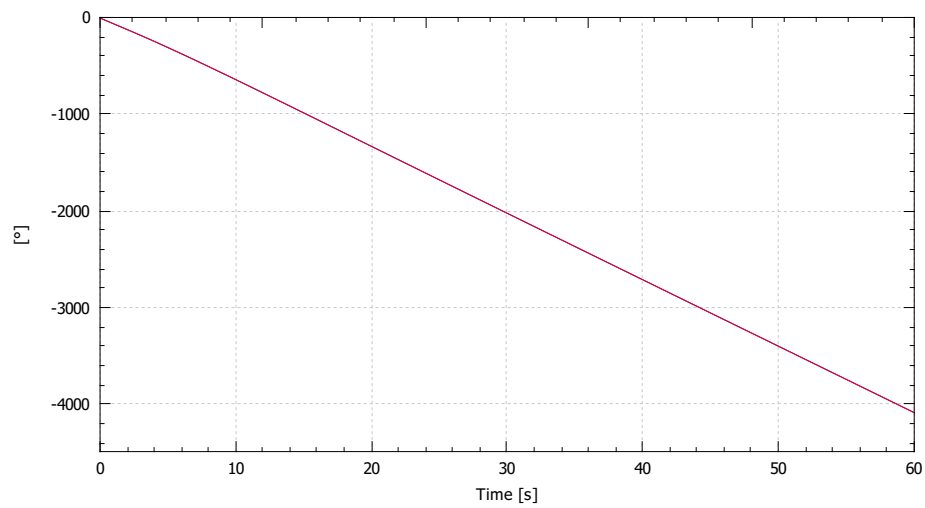
Acceleration, magnitude



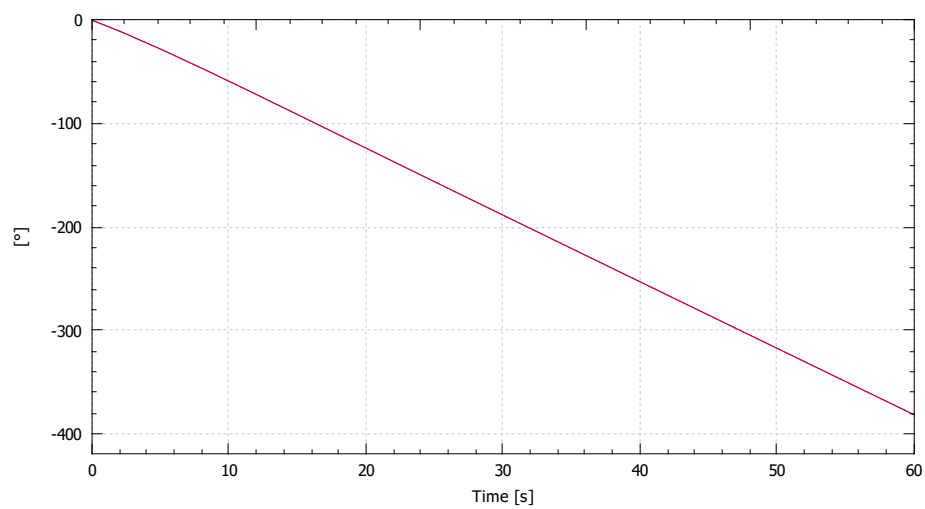
Rotational displacement (ru)



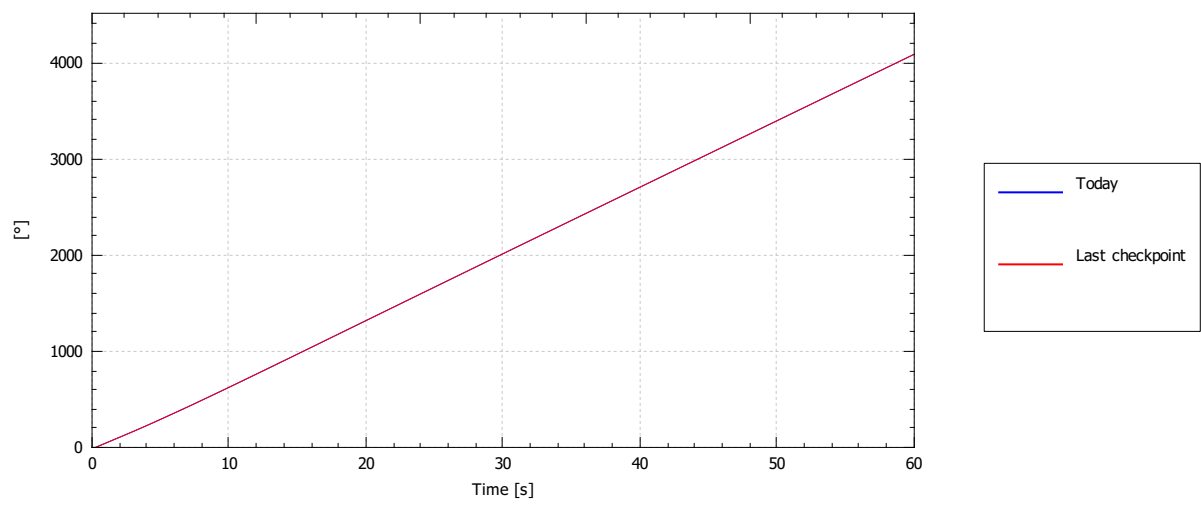
Rotational displacement (rv)



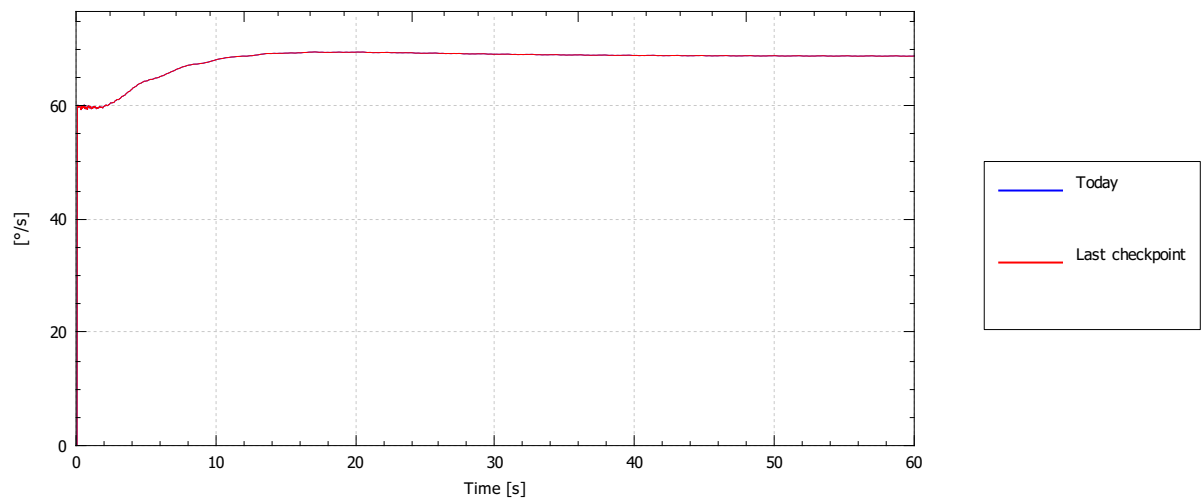
Rotational displacement (rw)



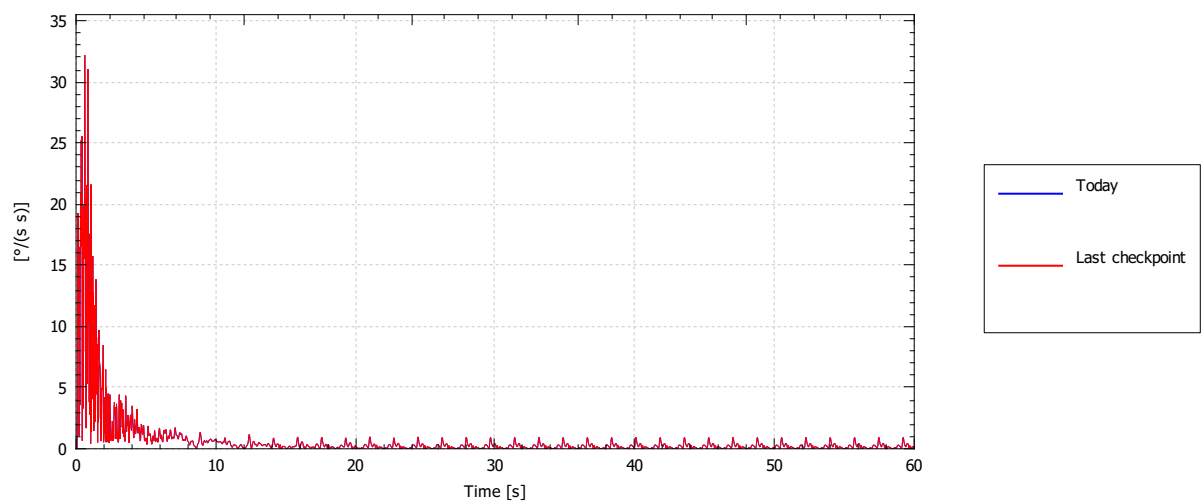
Rotational displacement magnitude



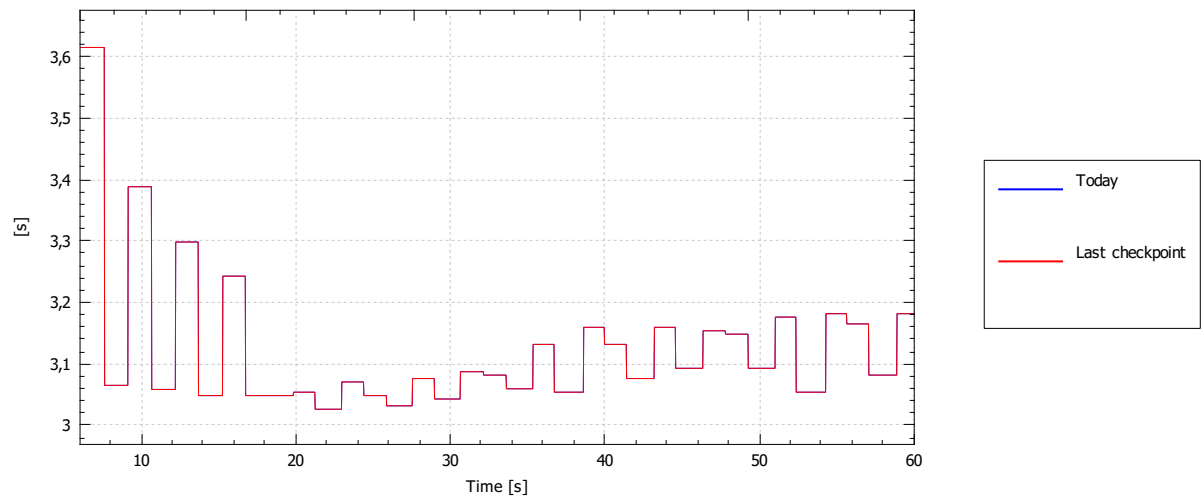
Rotational speed



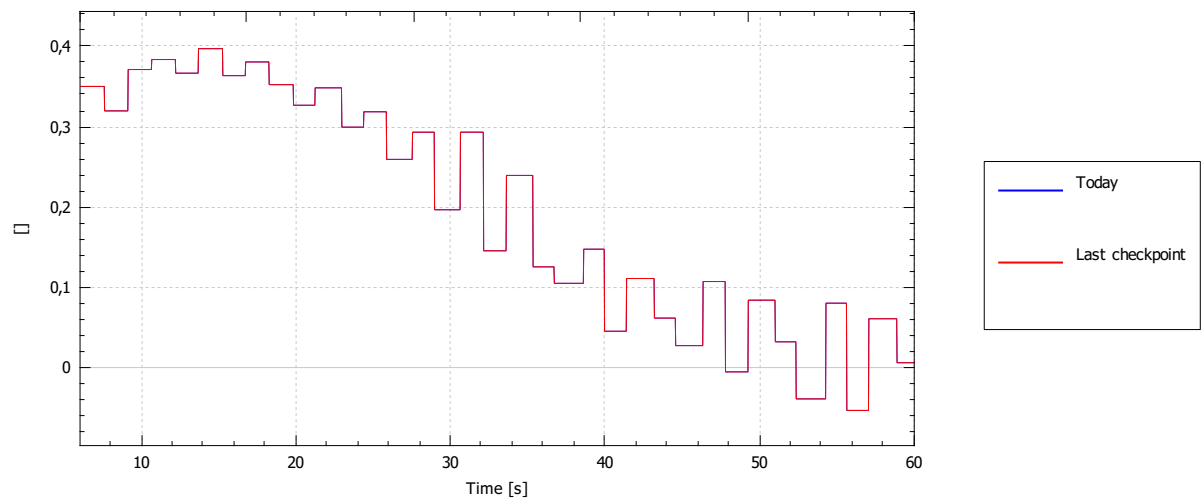
Rotational acceleration mag



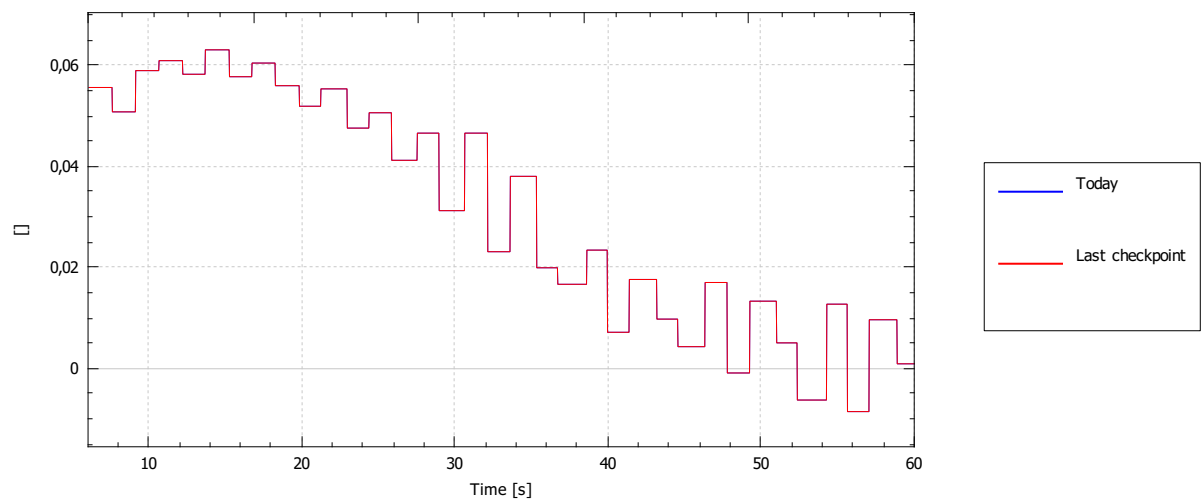
Displacement period



Displacement logarithmic decrement

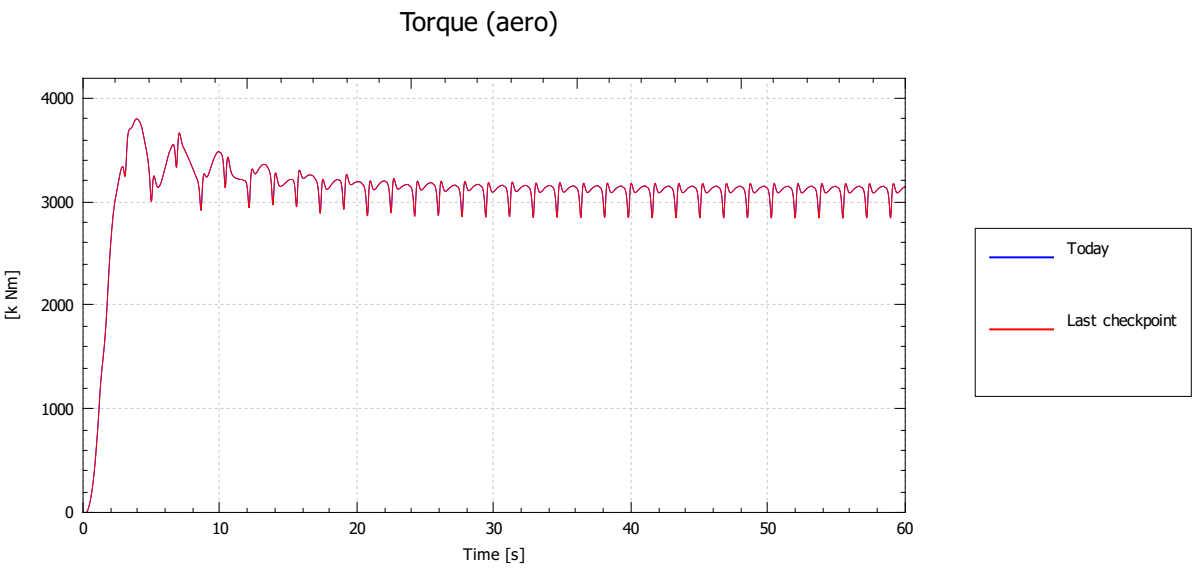
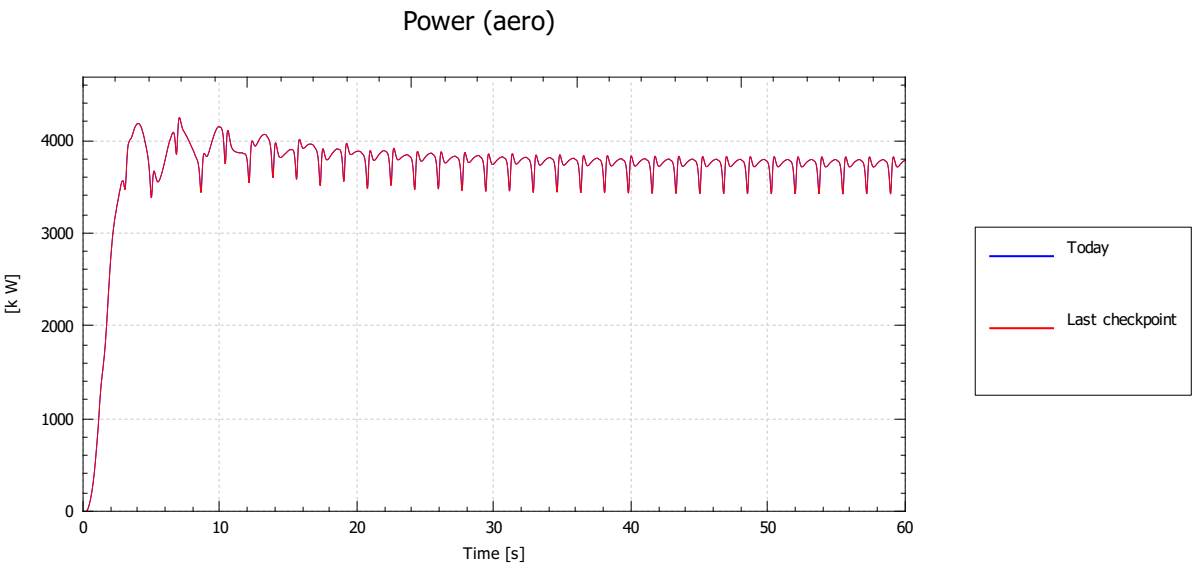


Displacement damping ratio

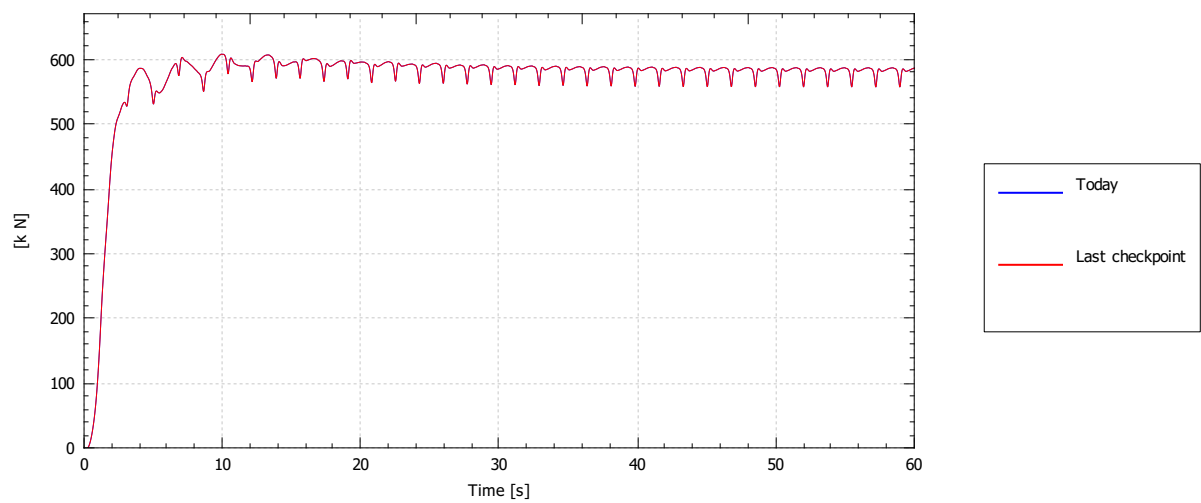


Load case: KD

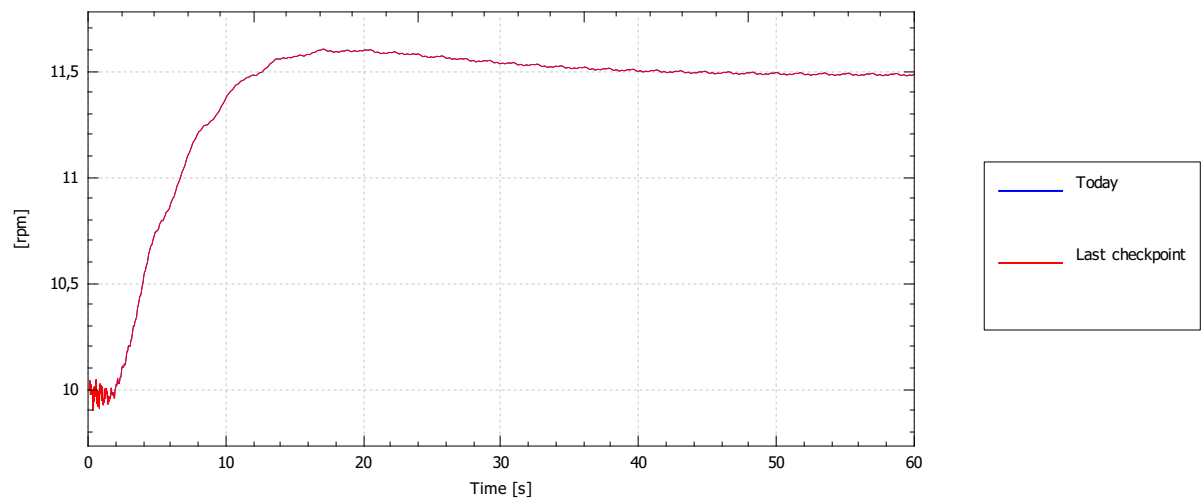
Rotor



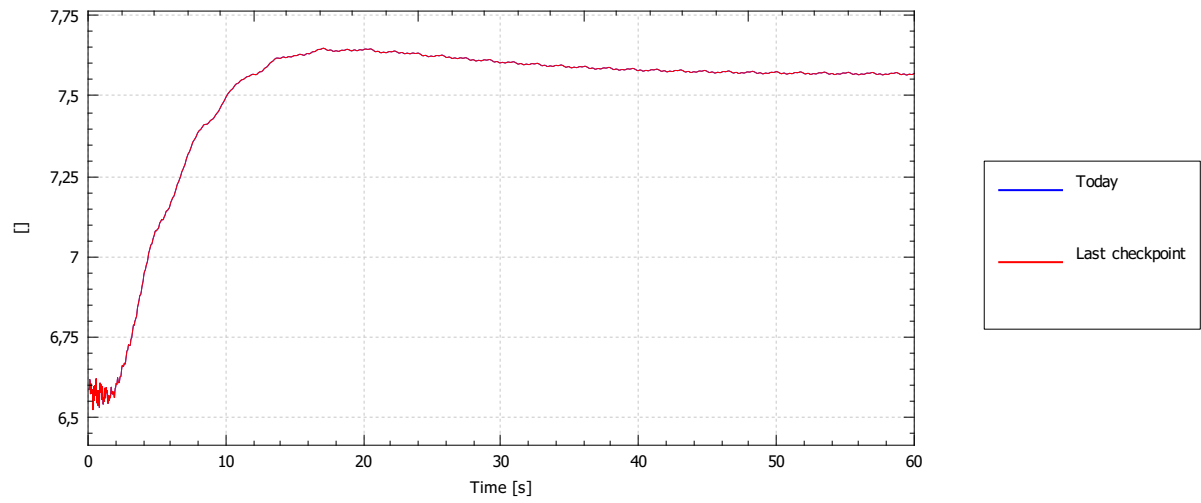
Thrust (aero)



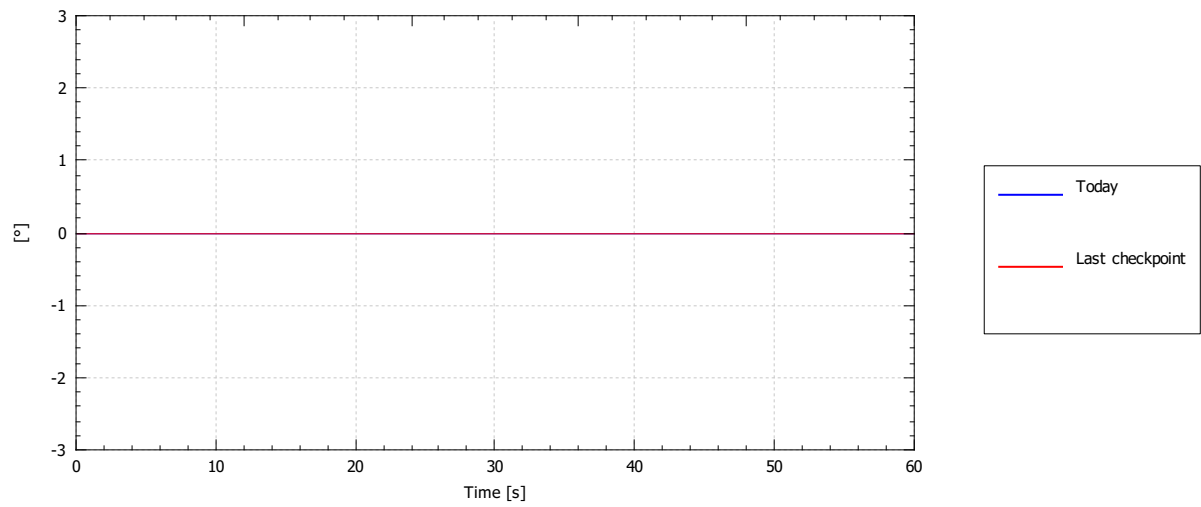
RPM



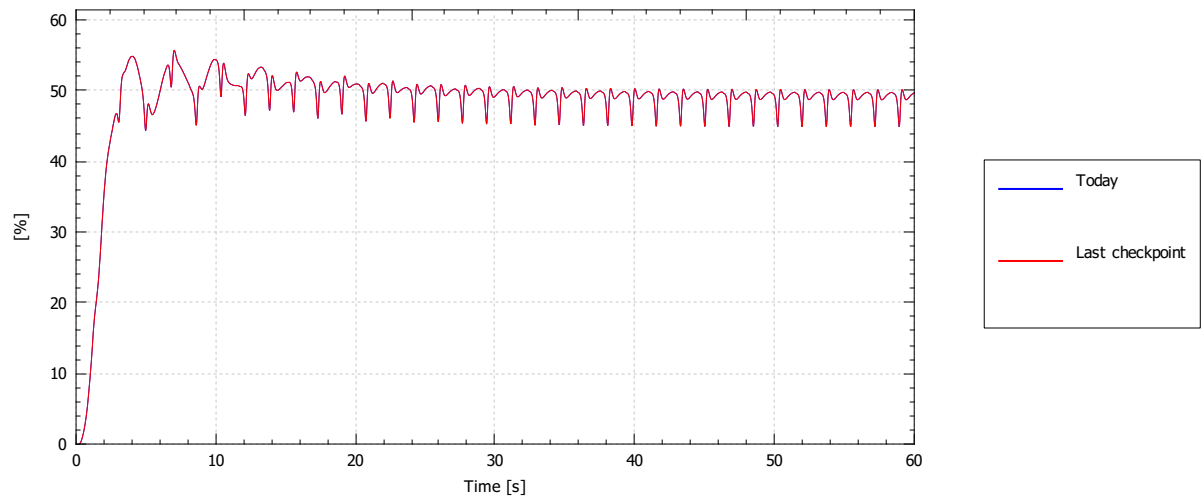
TSR



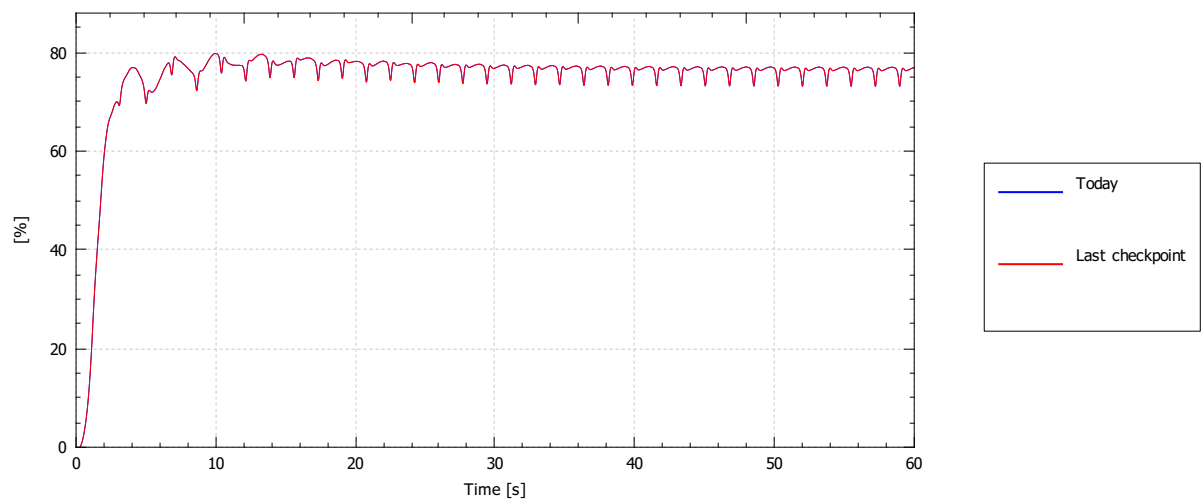
Representative demanded pitch angle



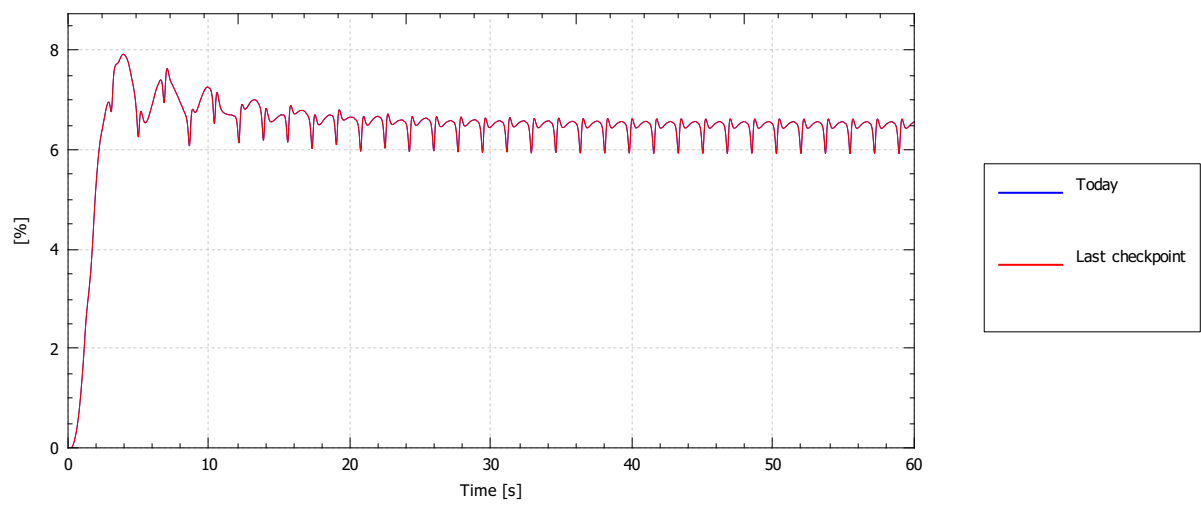
Power coef. (CP)



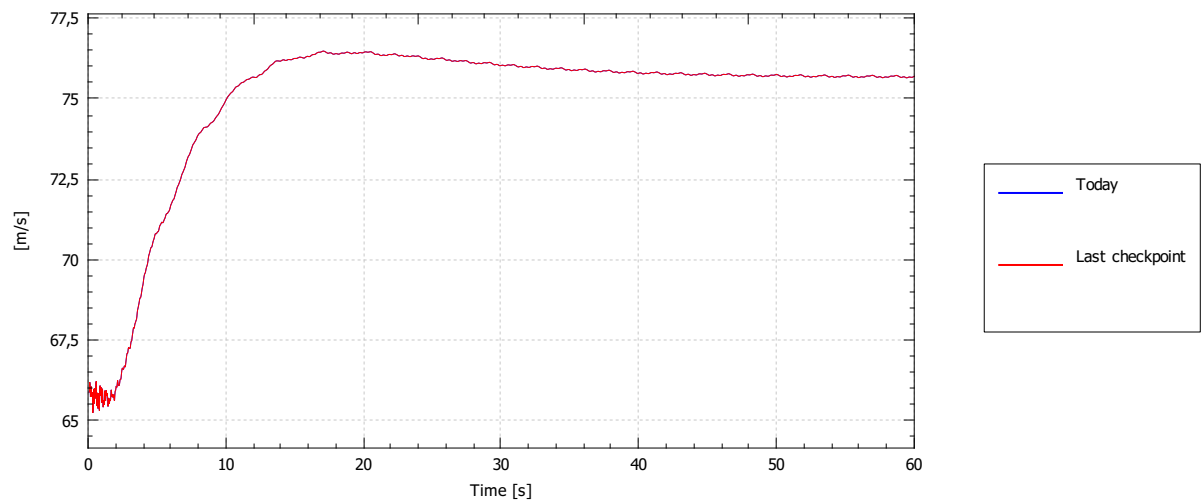
Thrust coef. (CT)



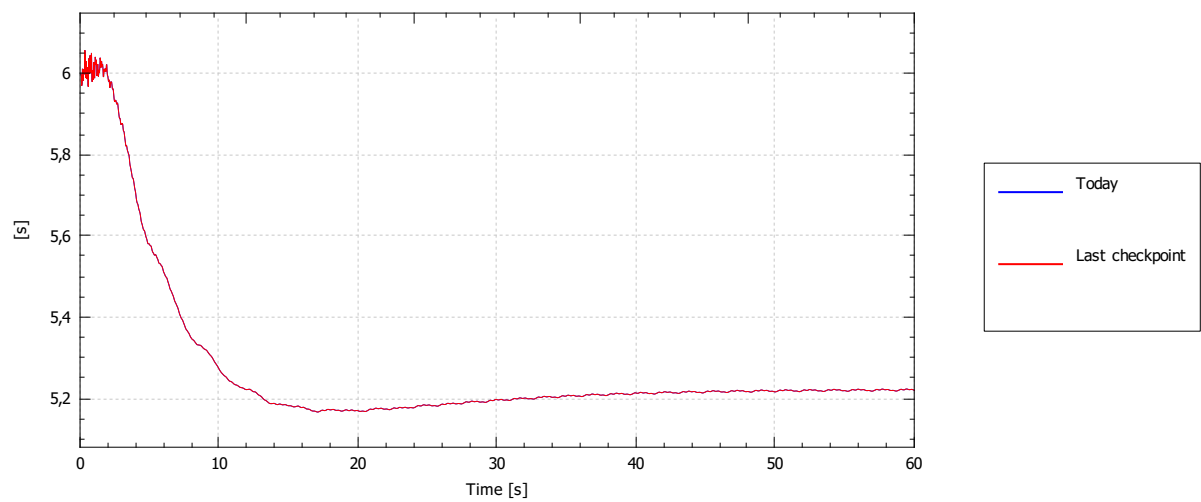
Torque coef. (CQ)



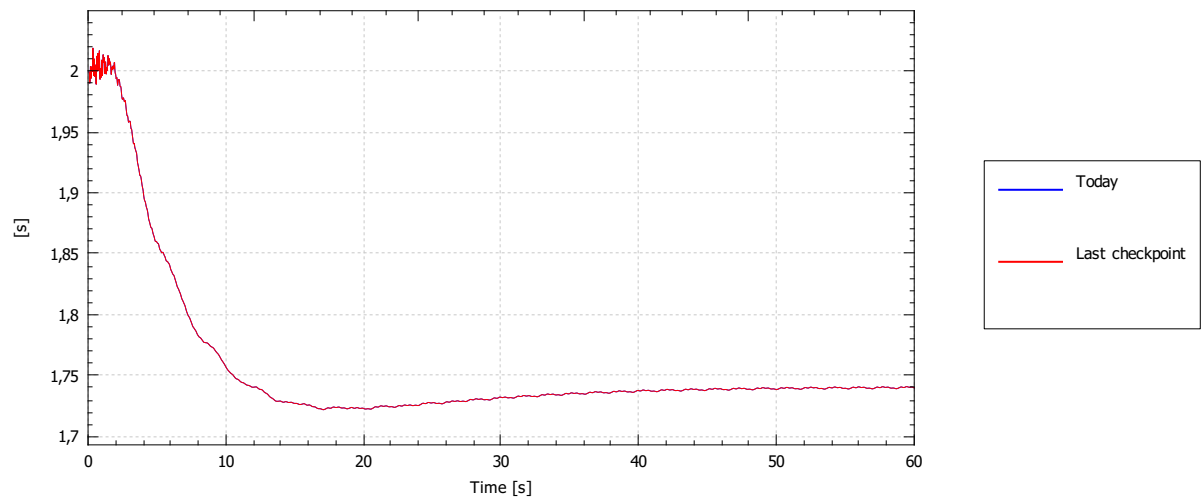
Tip speed



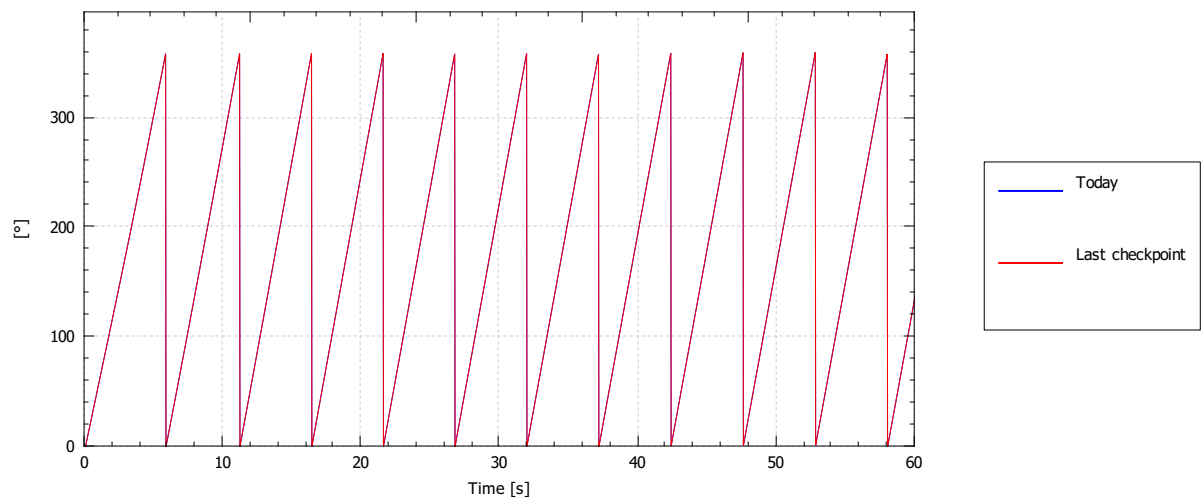
1P (one revolution)



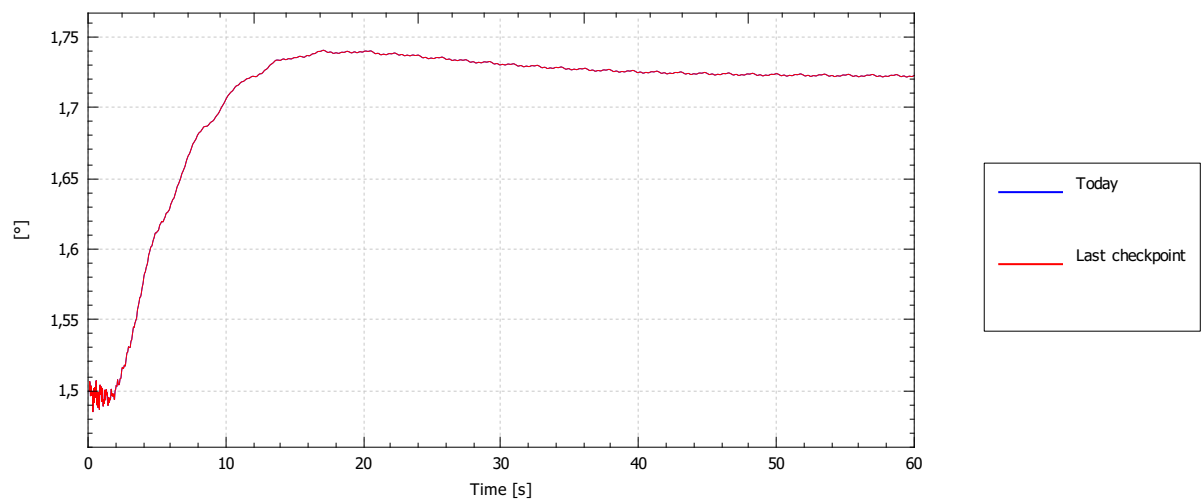
nP (blade passing)



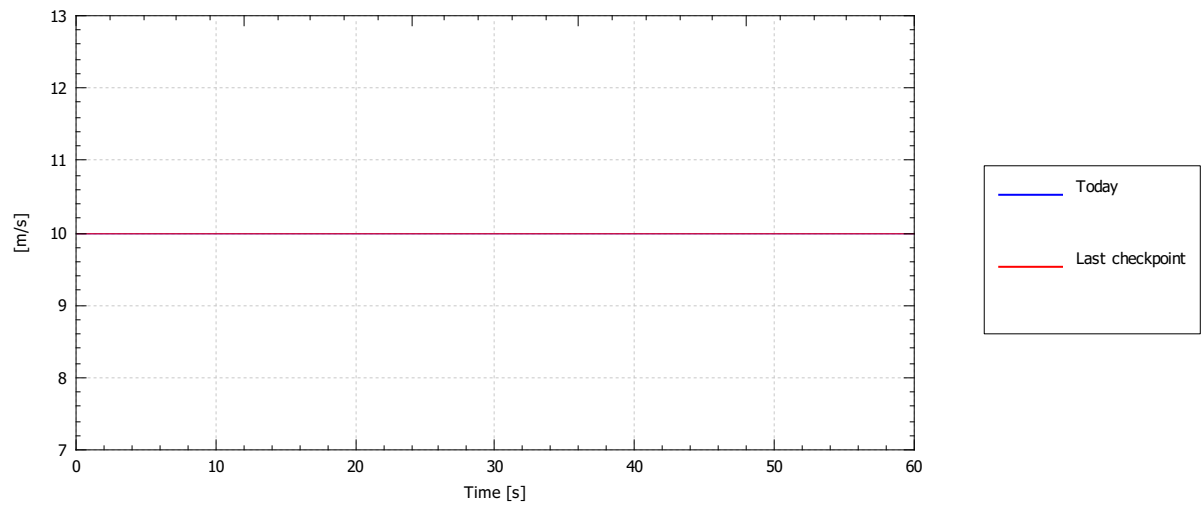
Azimuth angle



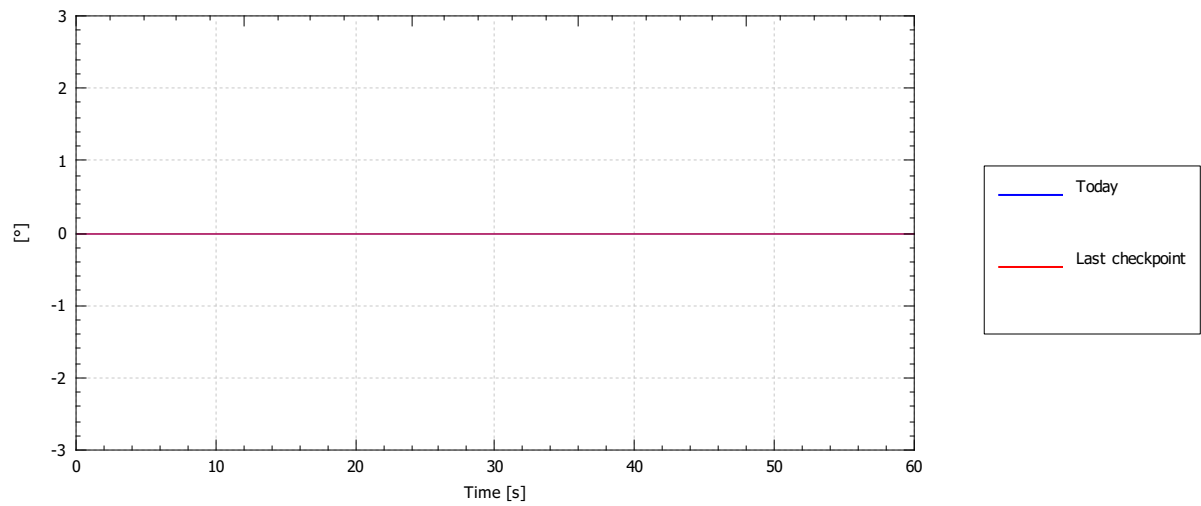
Rotation per timestep



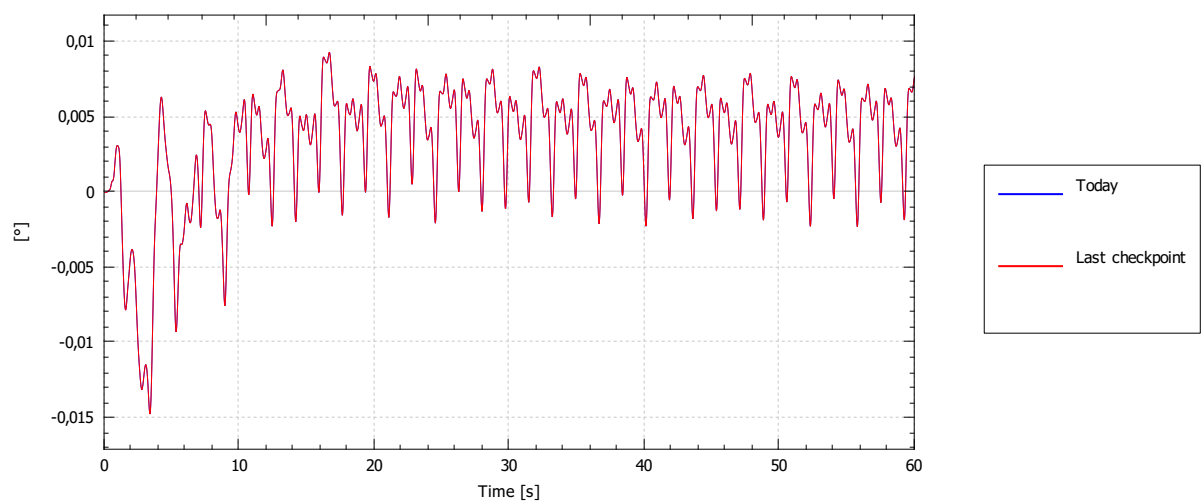
Wind speed at hub, magnitude



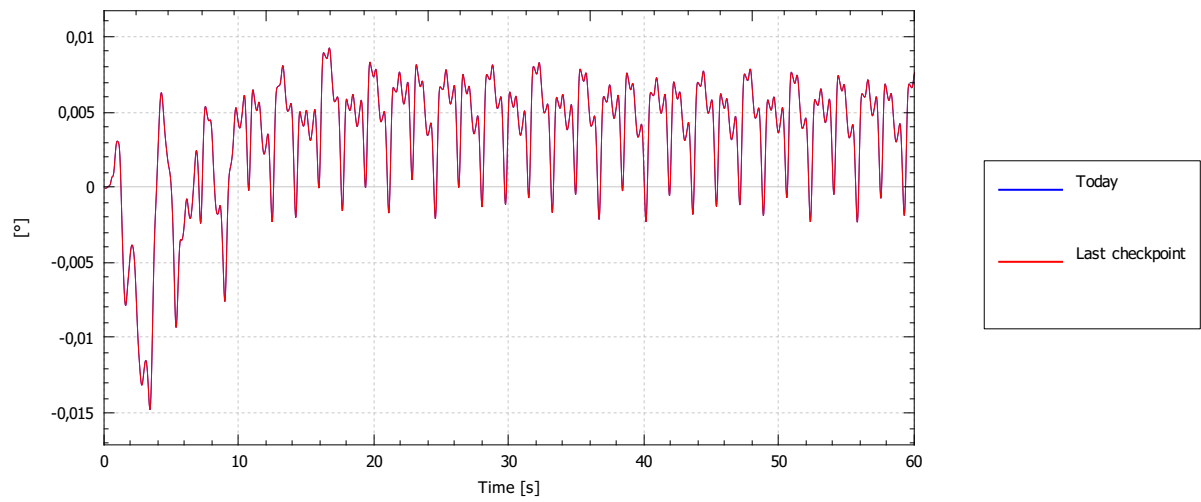
Wind angle at hub



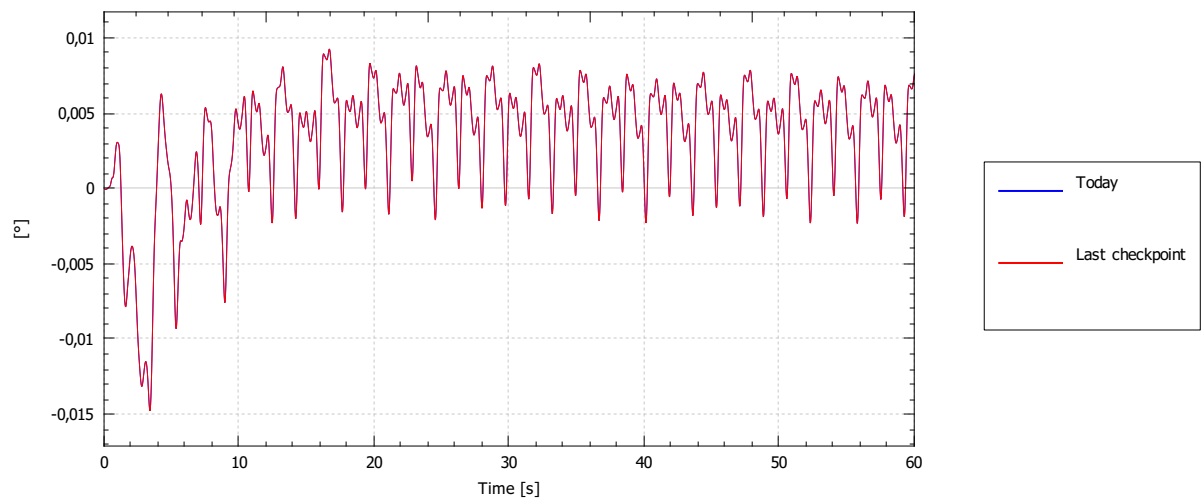
Yaw angle relative to forward



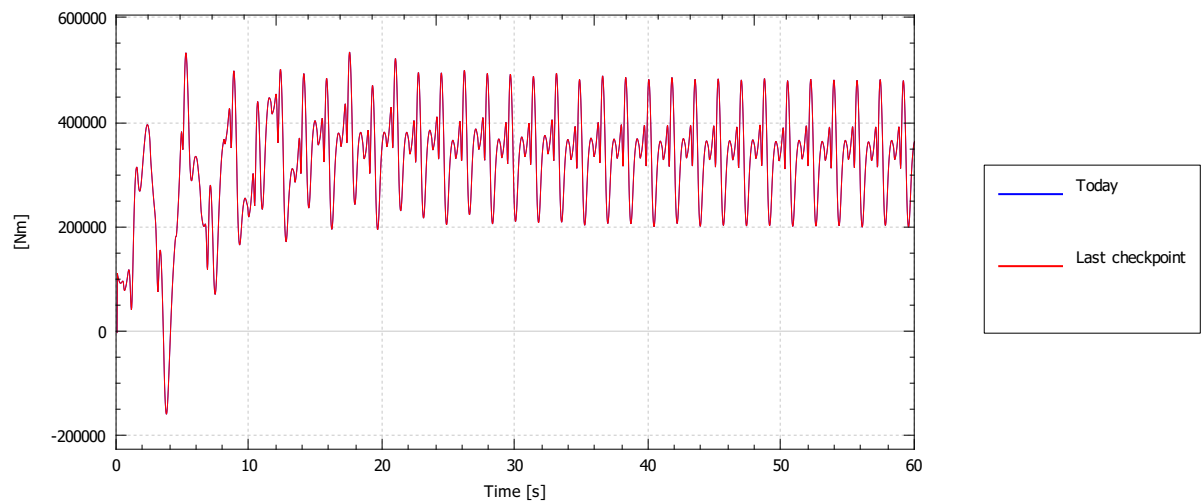
Yaw angle to reference direction



Yaw error

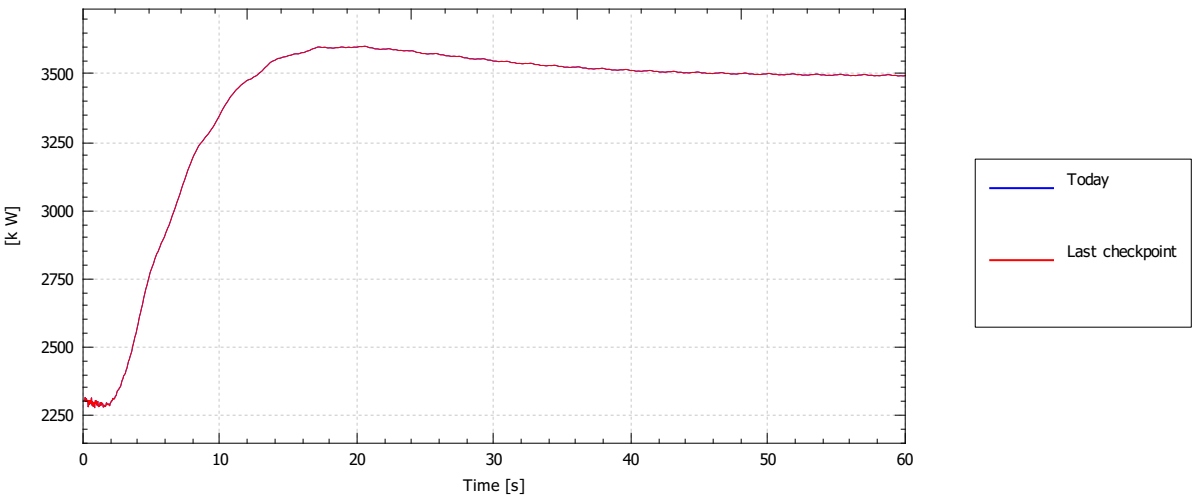


Torque about yaw axis

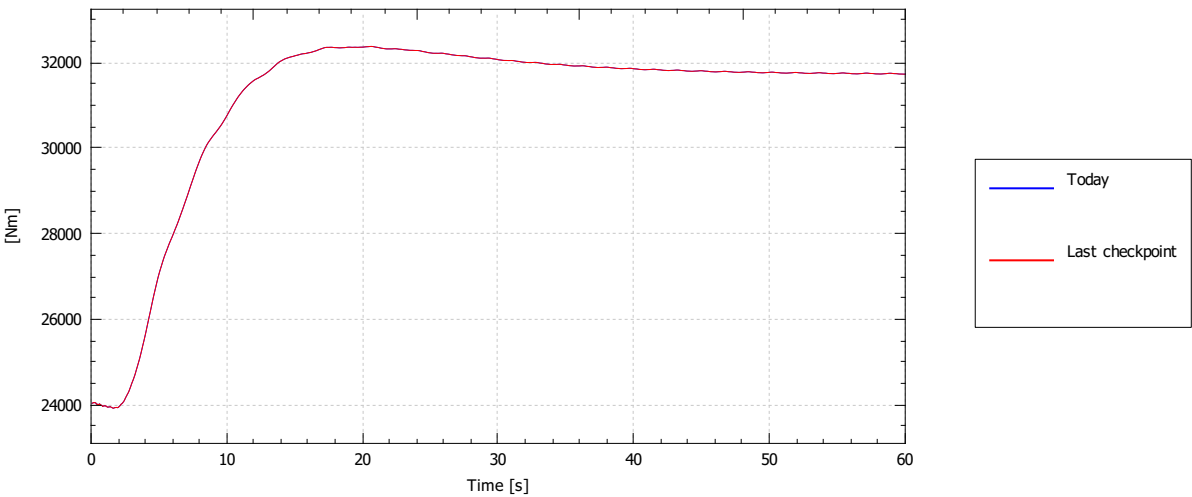


Generator

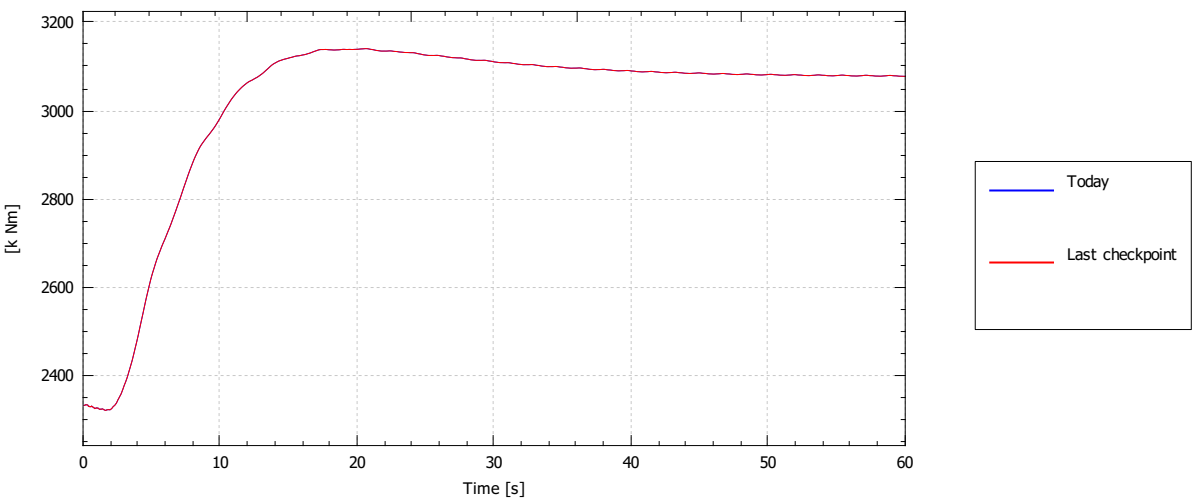
Power (electrical)



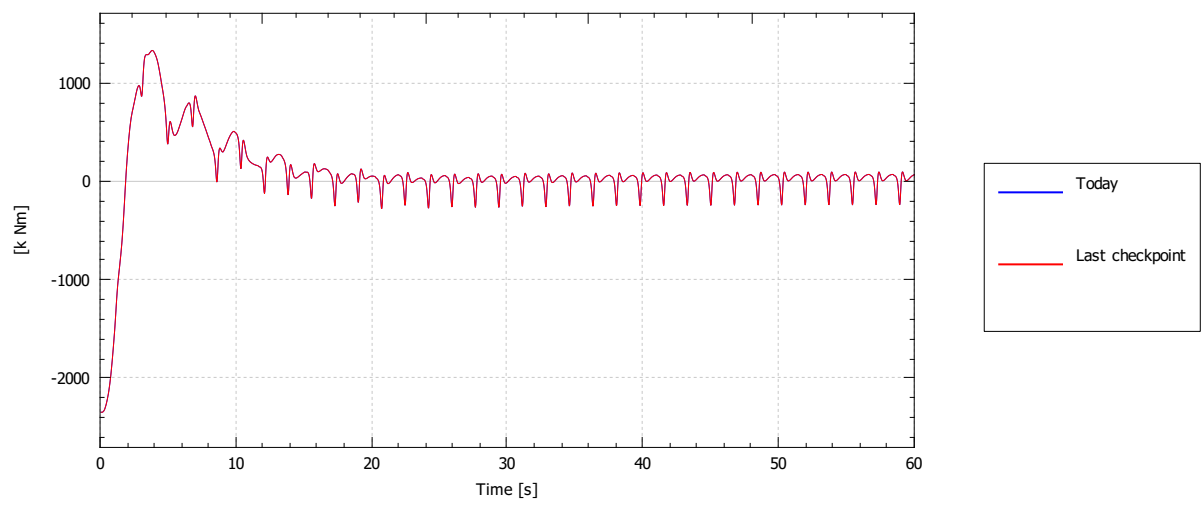
Torque



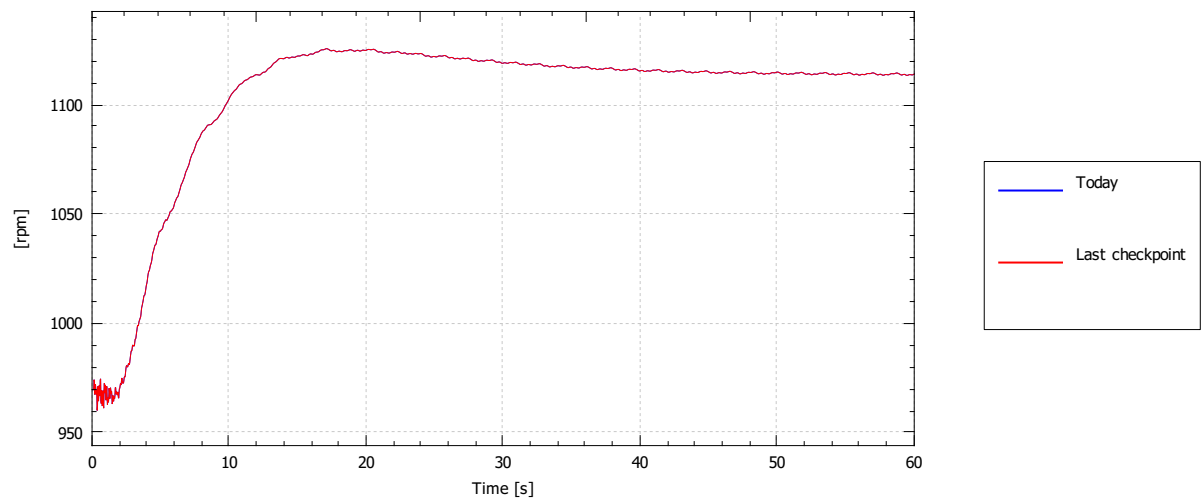
Torque on main shaft



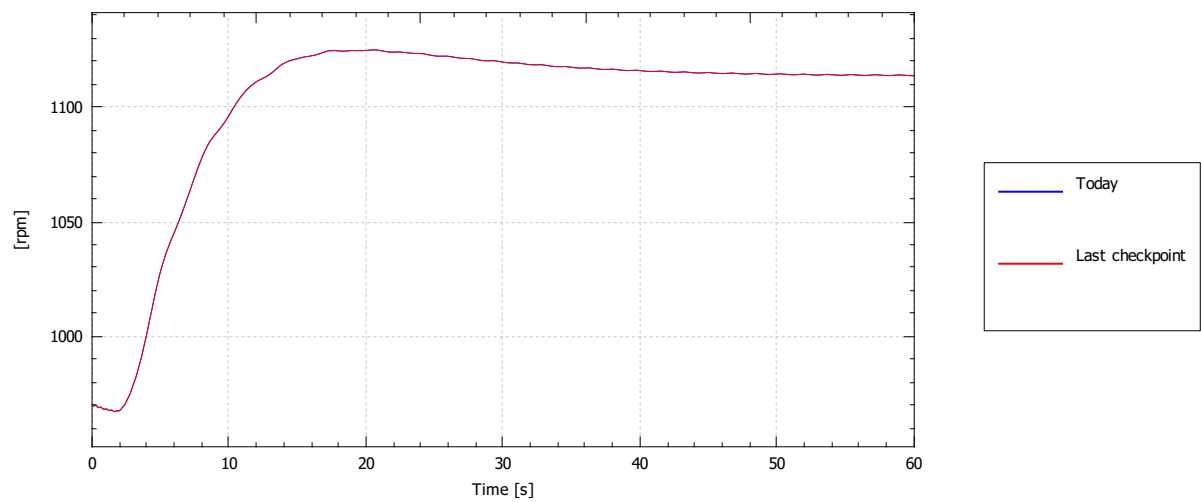
Torque diff. on main shaft



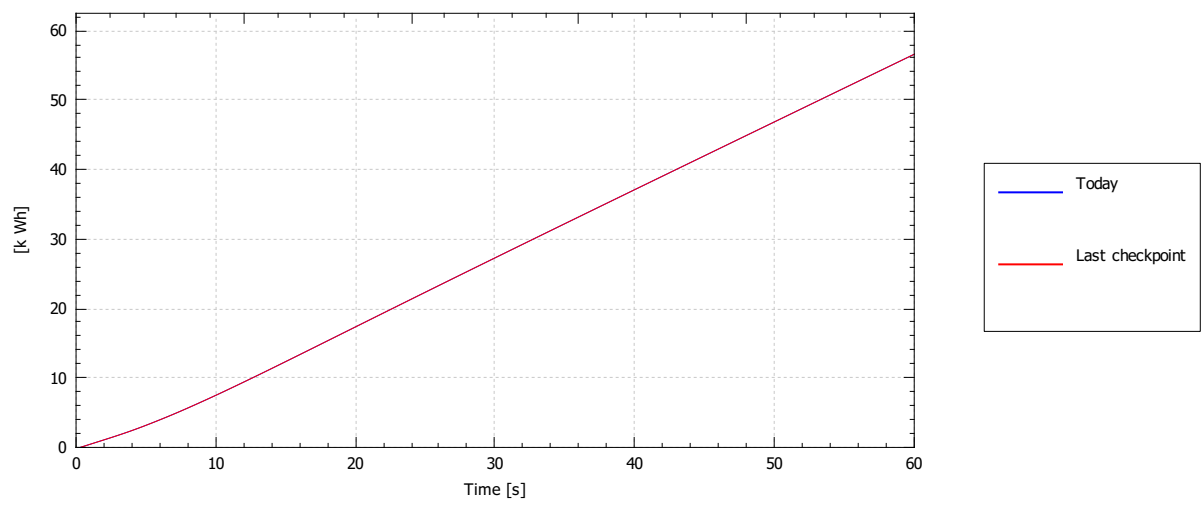
RPM



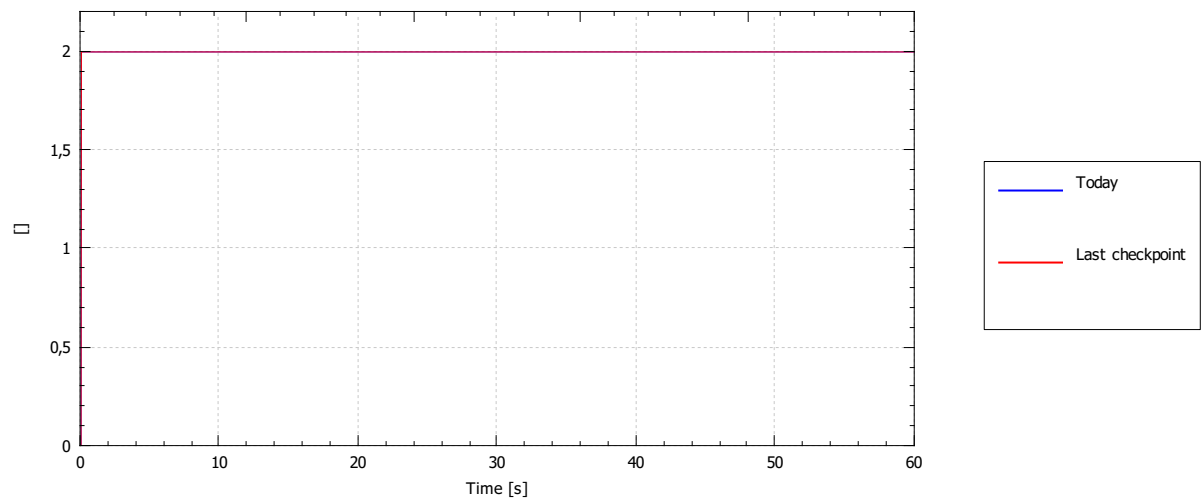
Filtered RPM



Electricity production

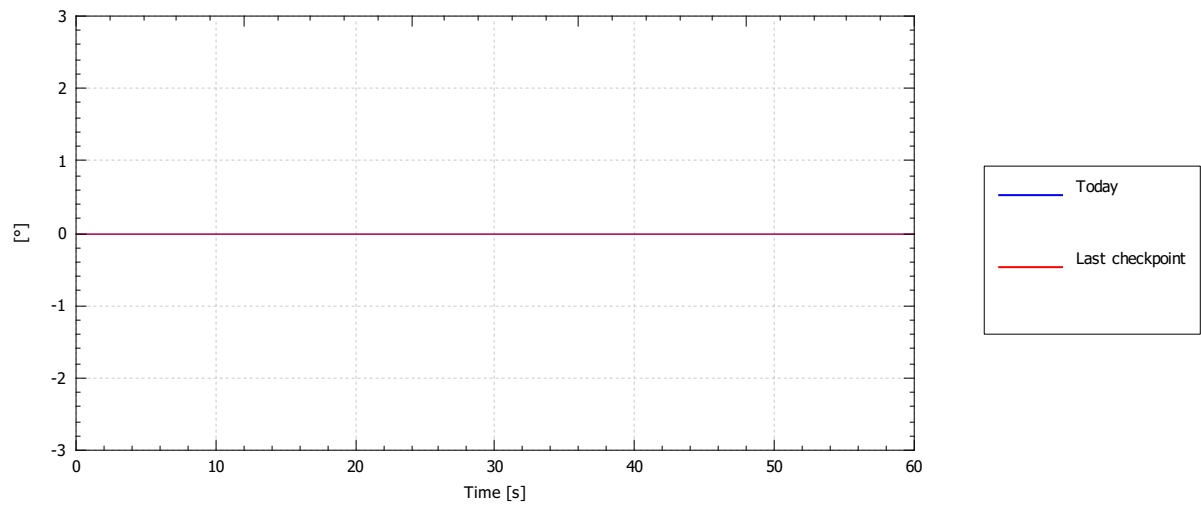


Region

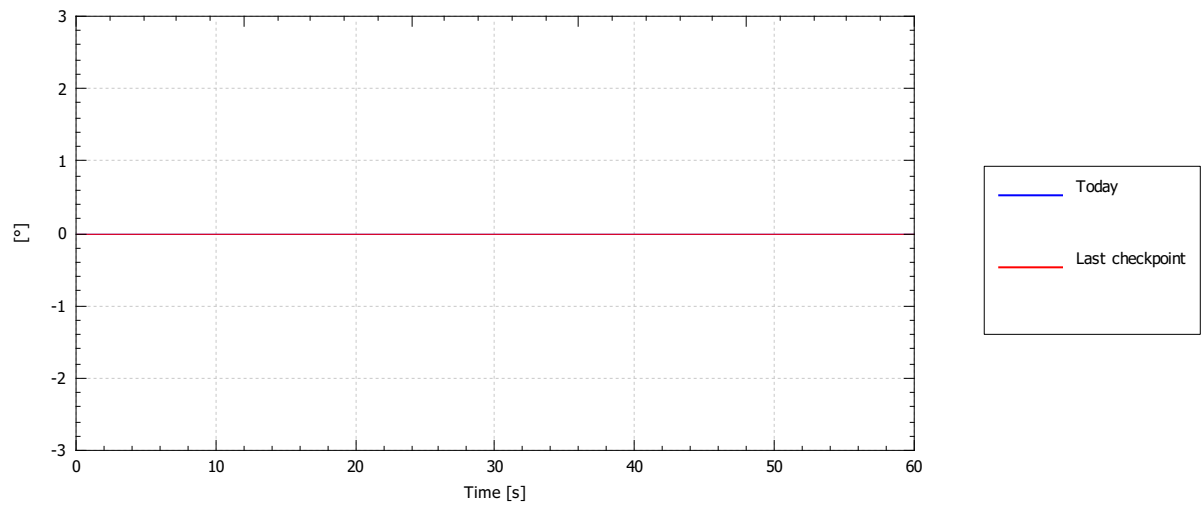


Demanded pitch controller

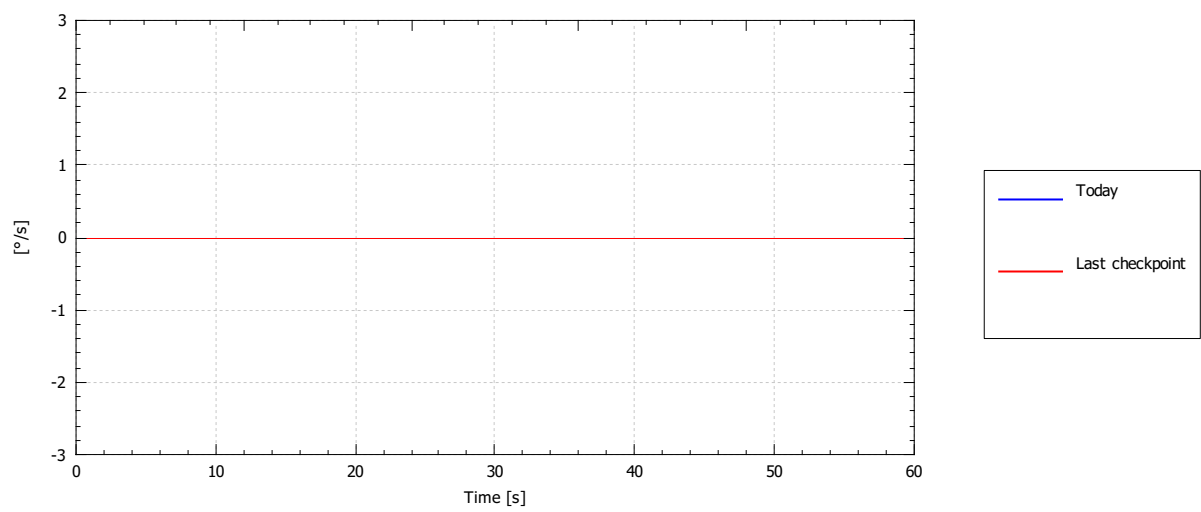
Demanded collective pitch angle



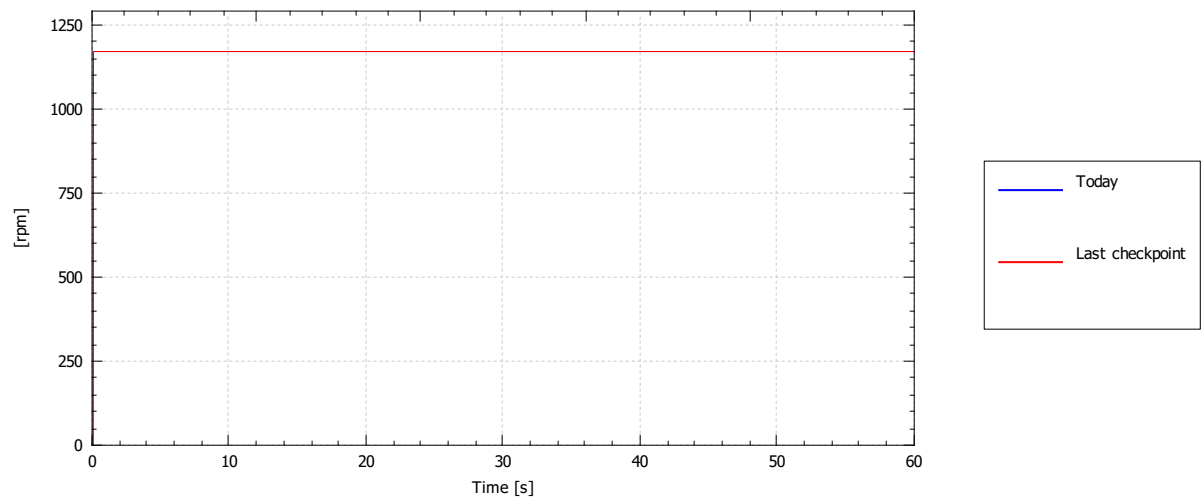
Cumulative demanded collective pitch angle



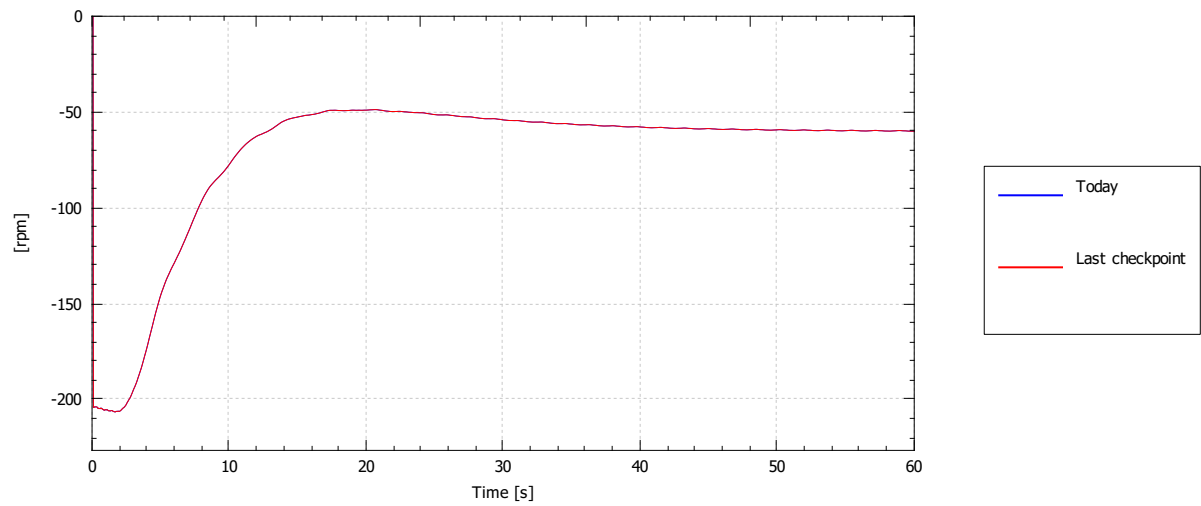
Demanded collective pitch angle rate



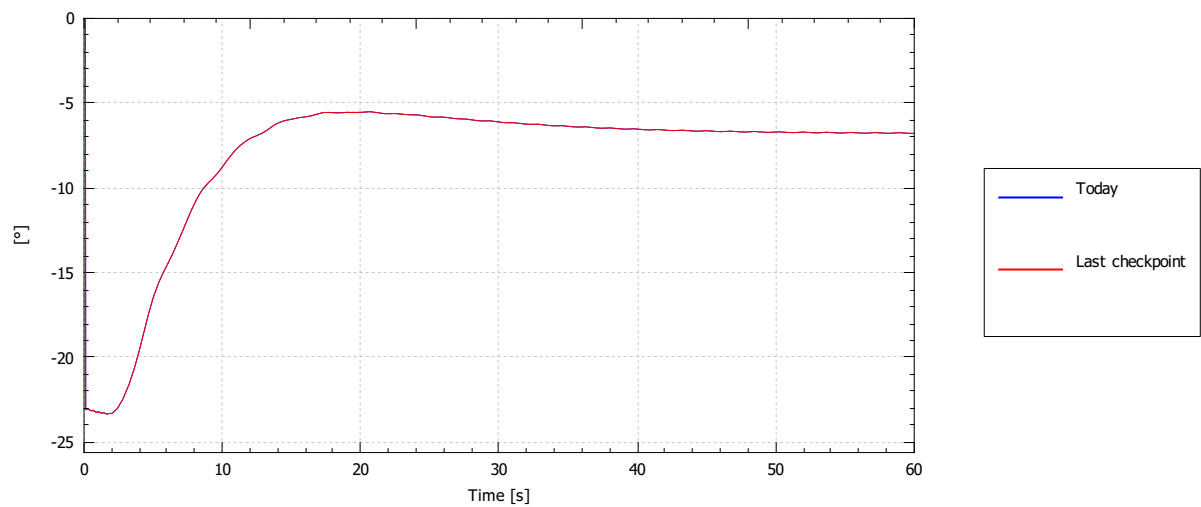
Set point



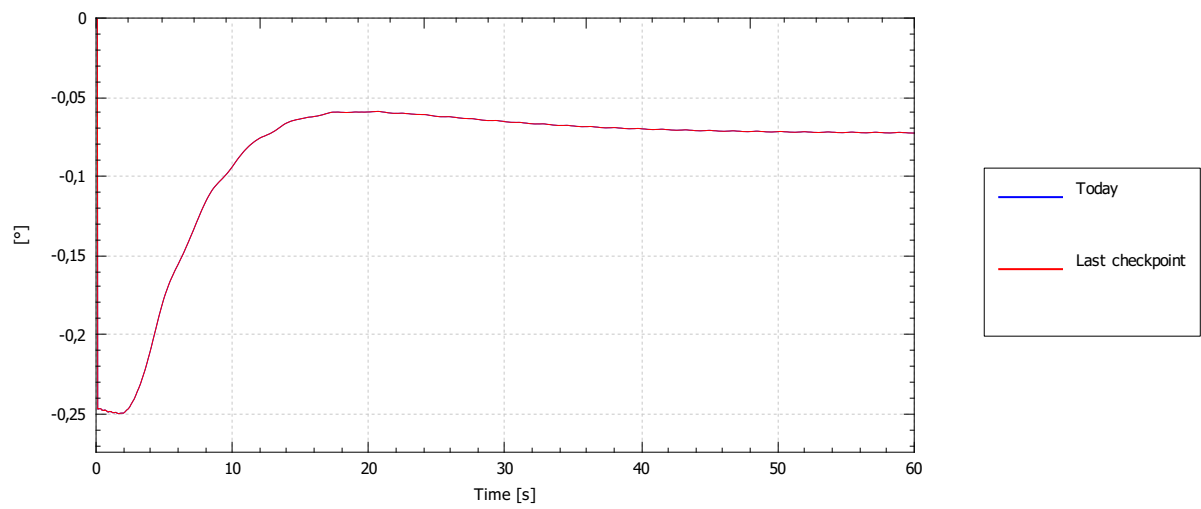
RPM error



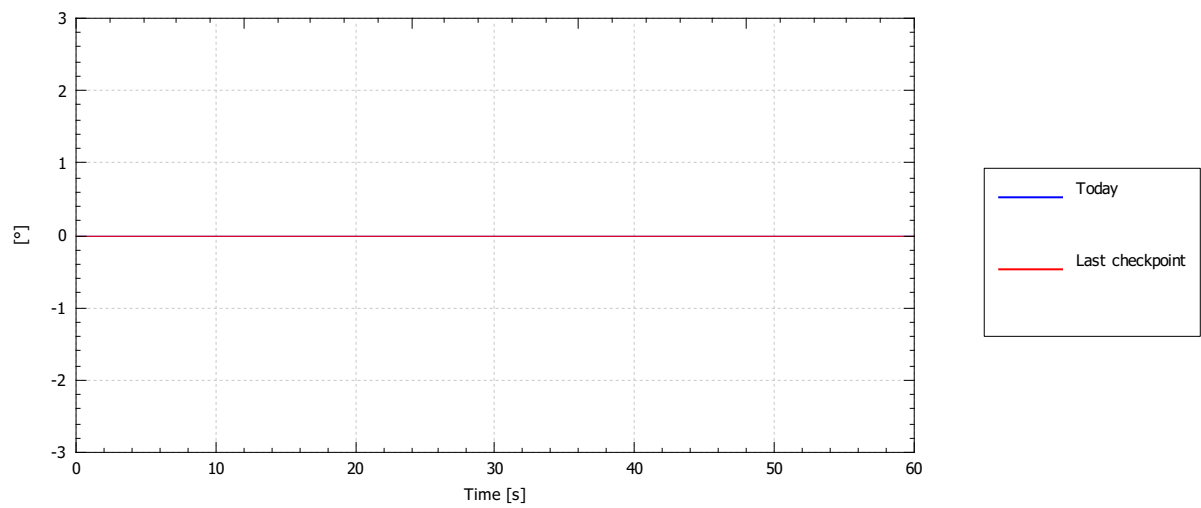
P term



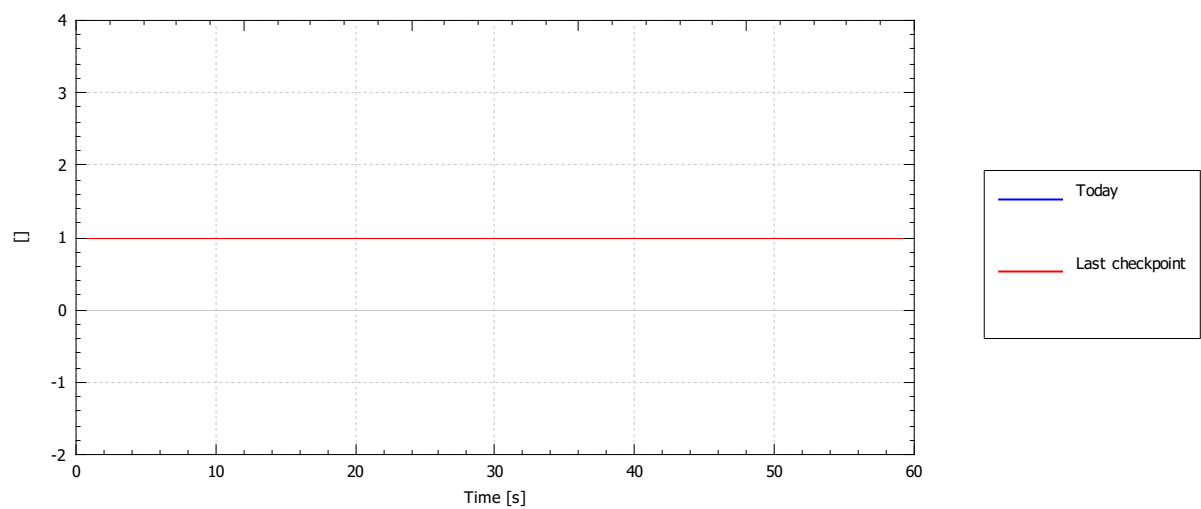
I term

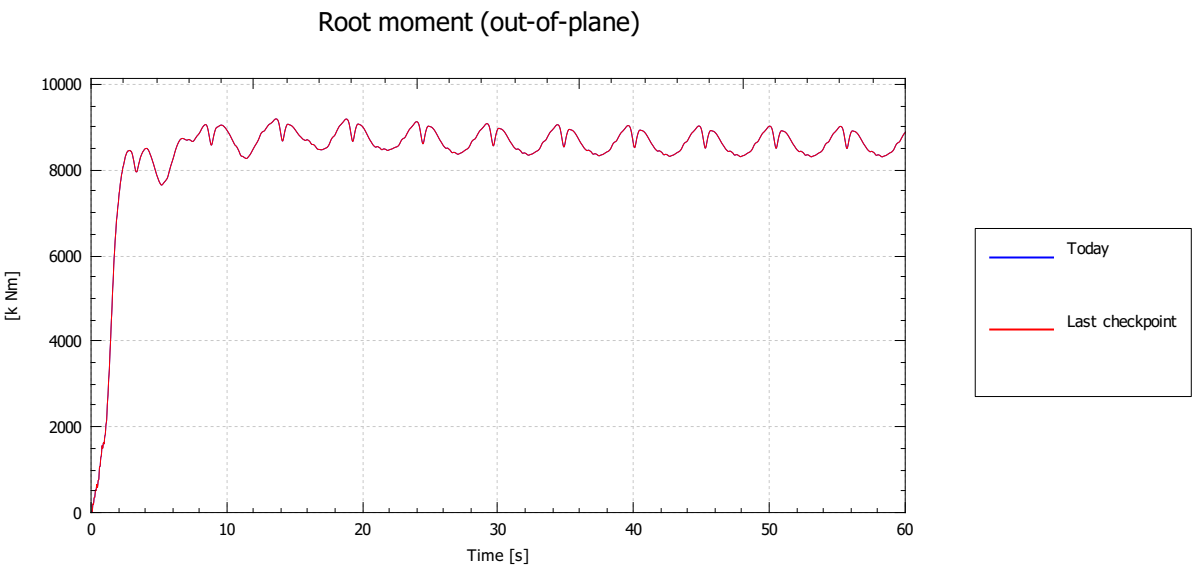
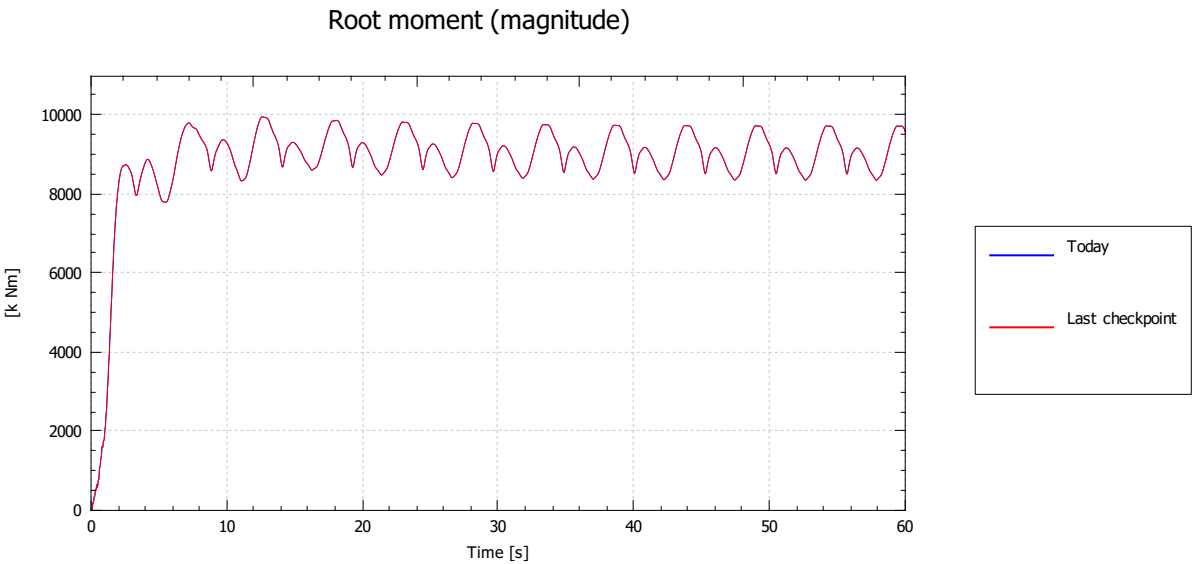
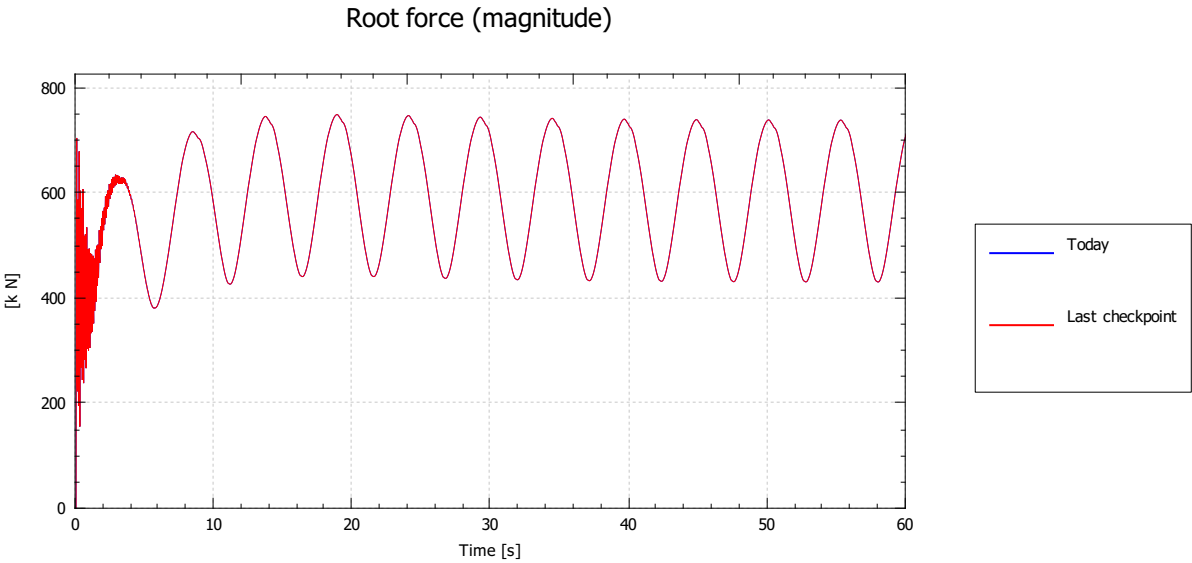


D term

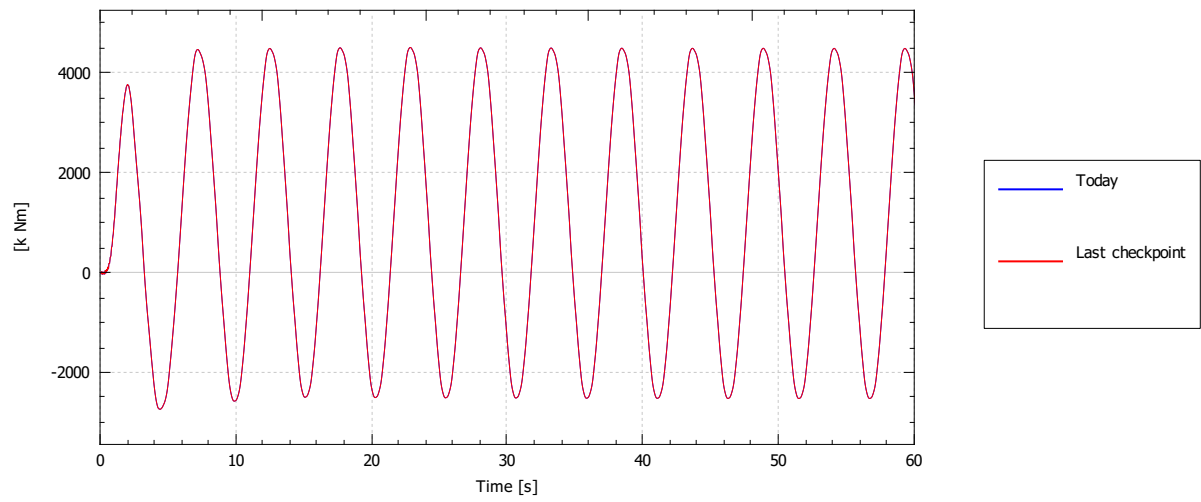


Gain scheduling factor

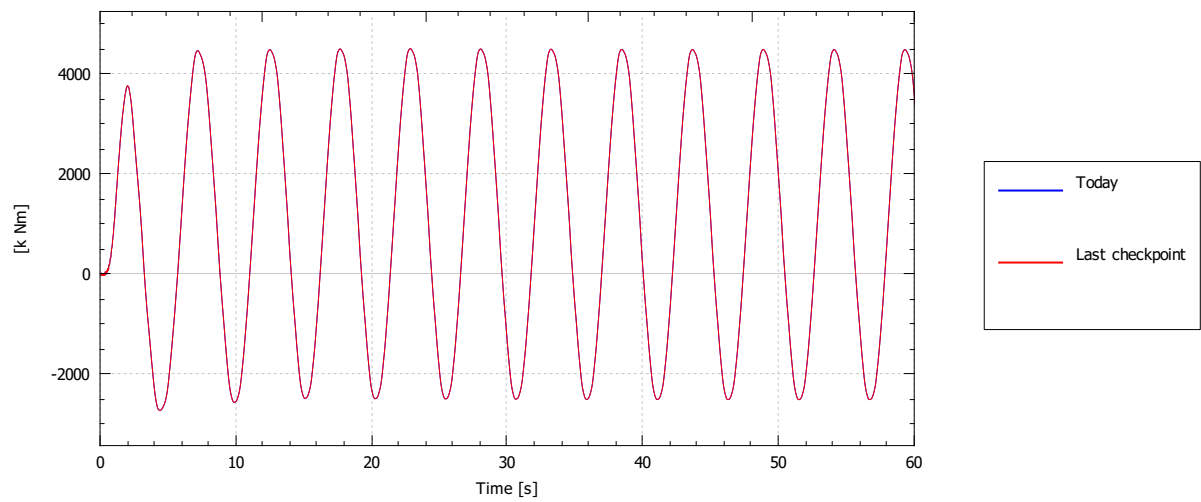




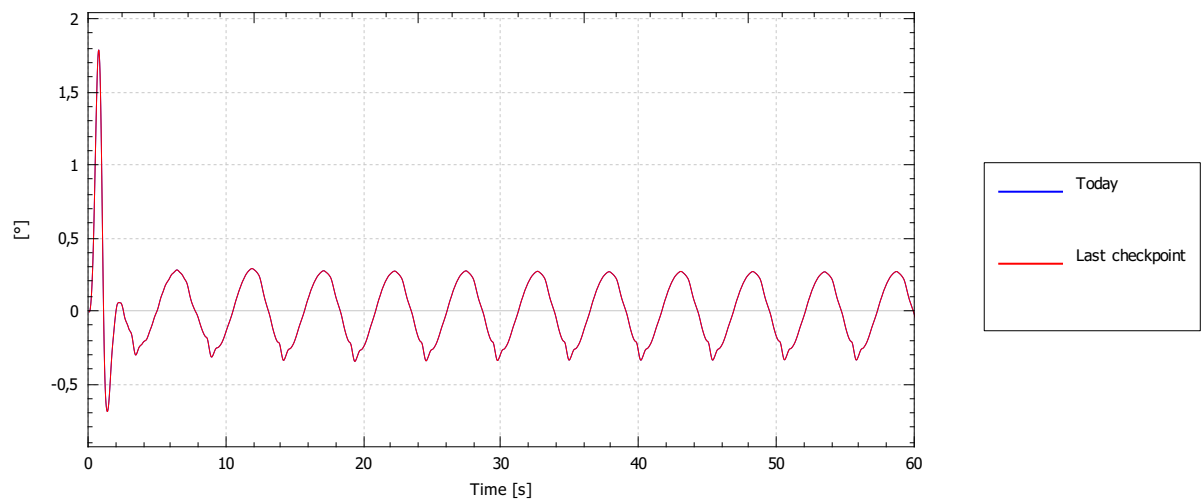
Root moment (in-plane)



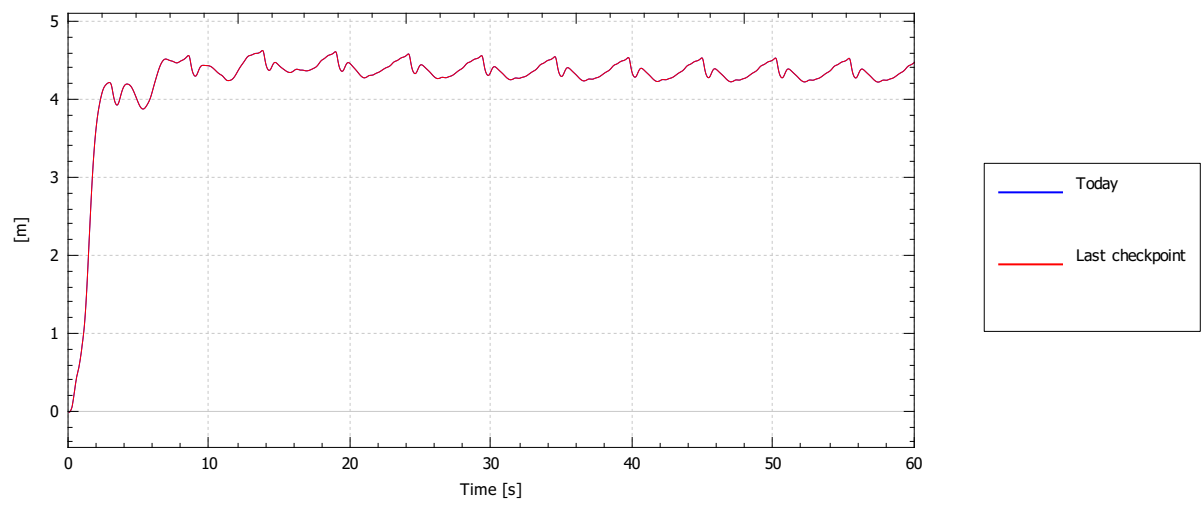
Root moment about shaft



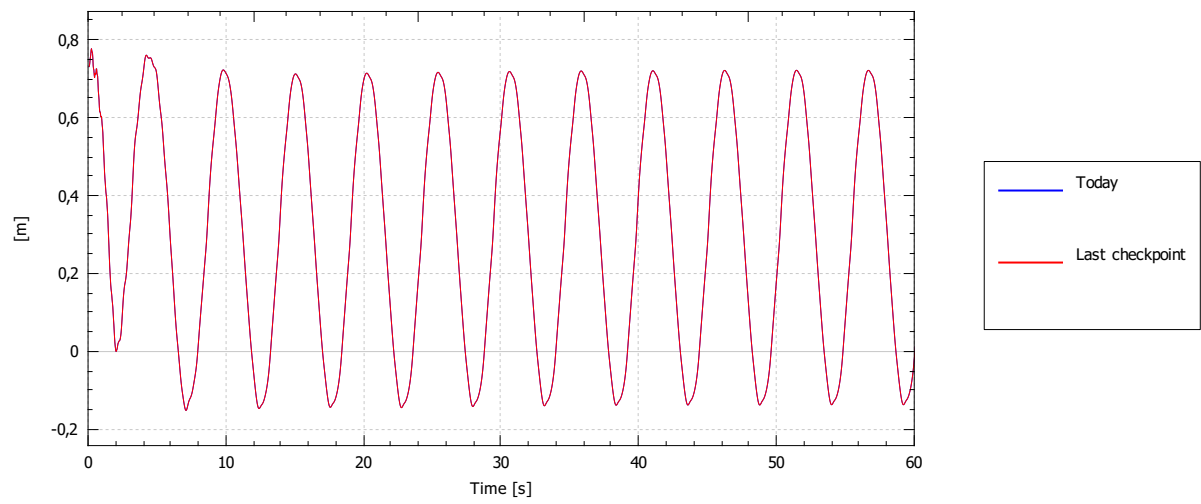
Pitch angle



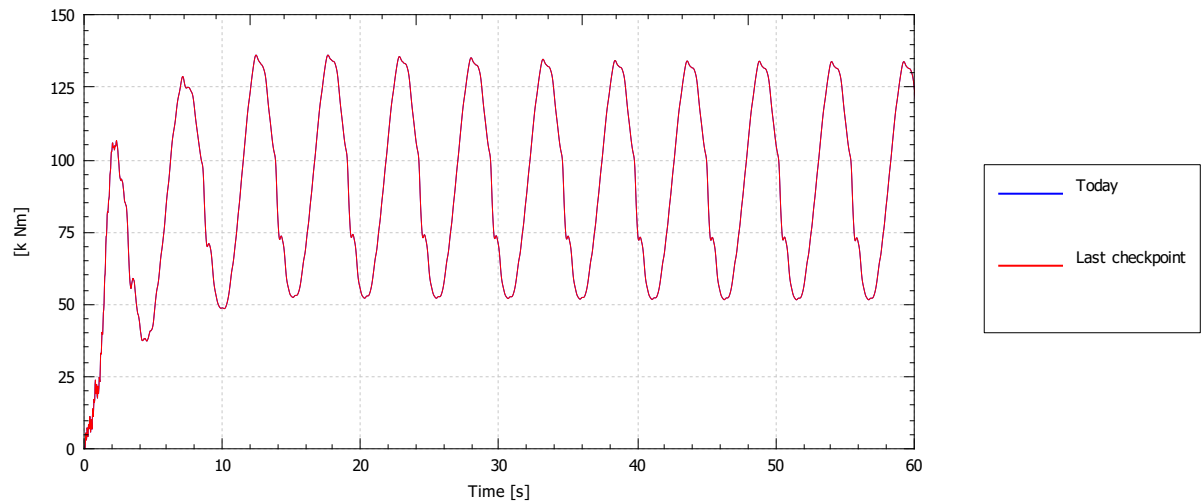
Tip deflection (out-of-plane)

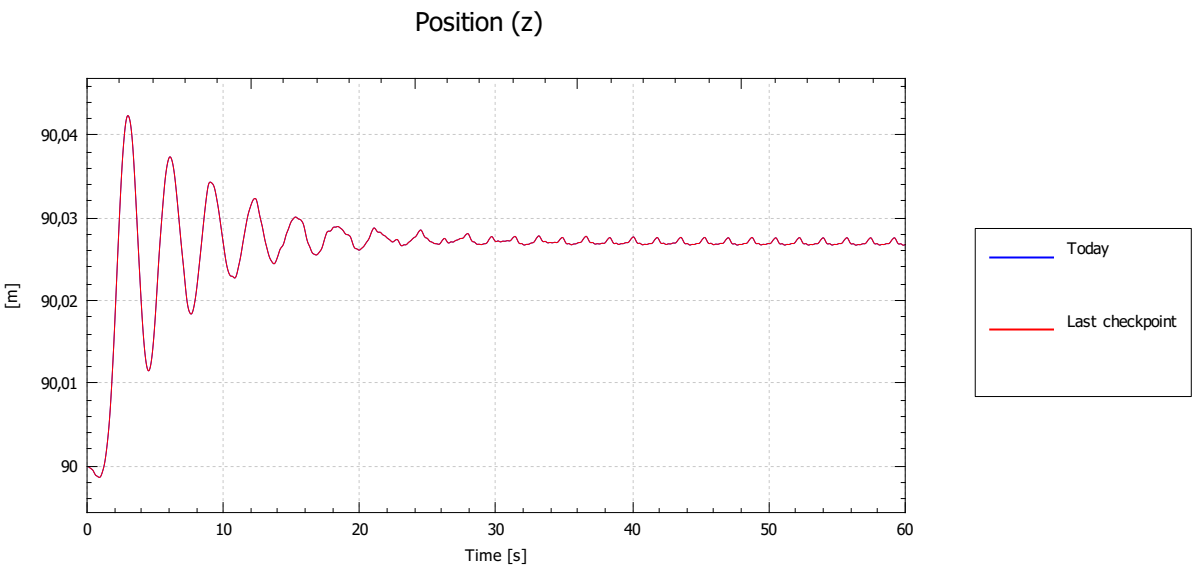
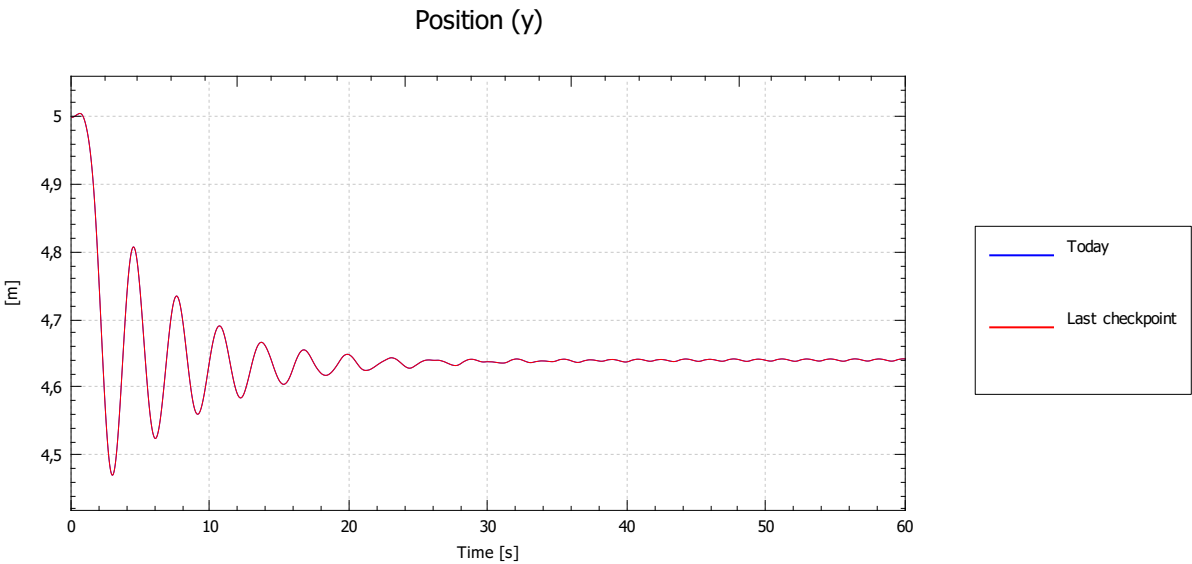
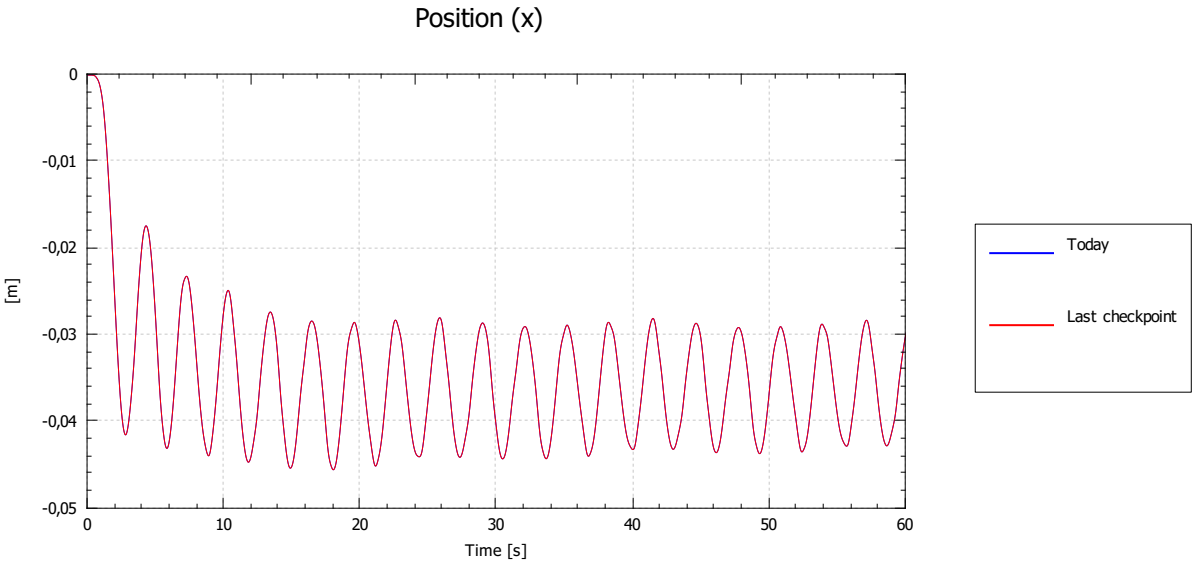


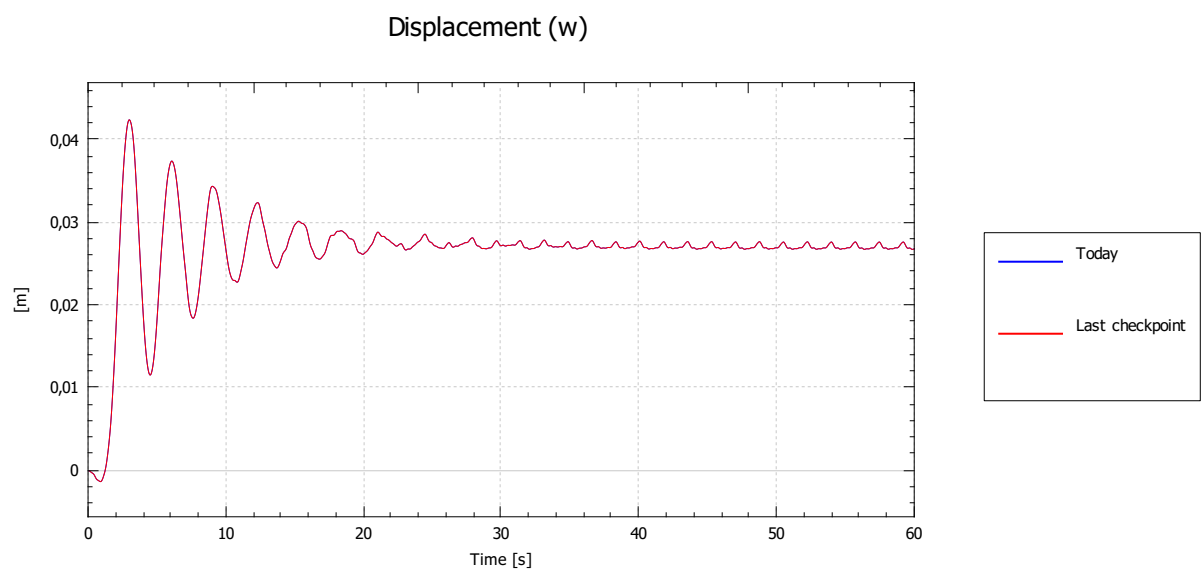
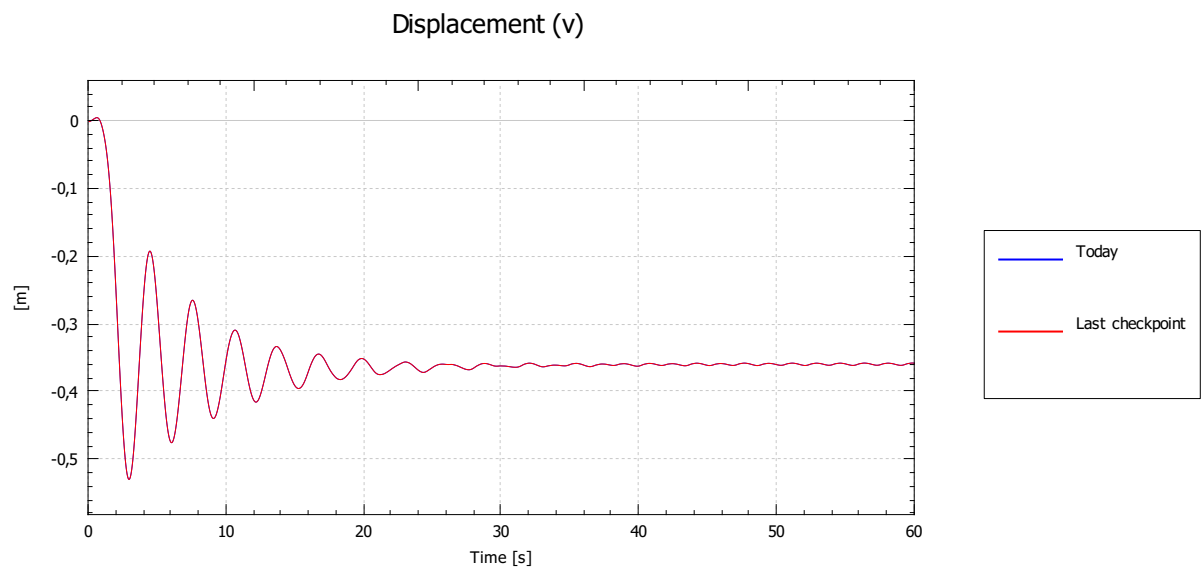
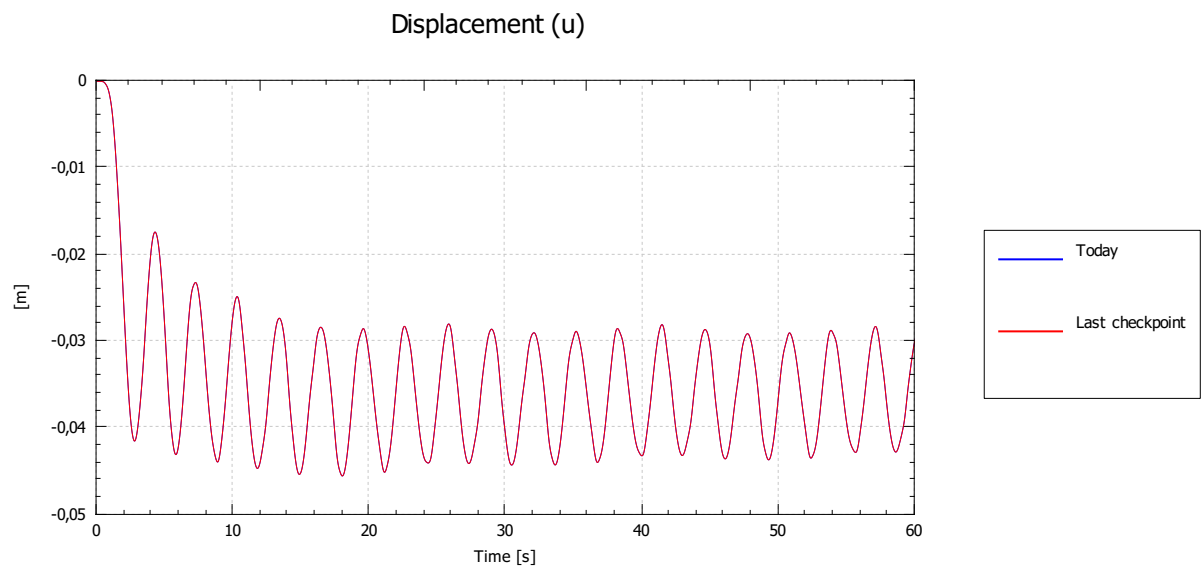
Tip deflection (in-plane)



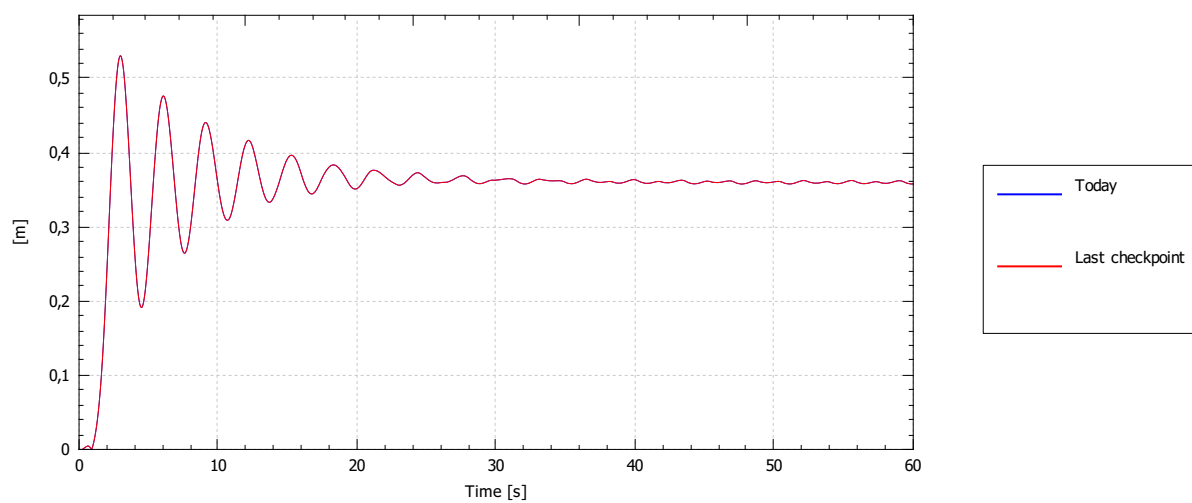
Root torque



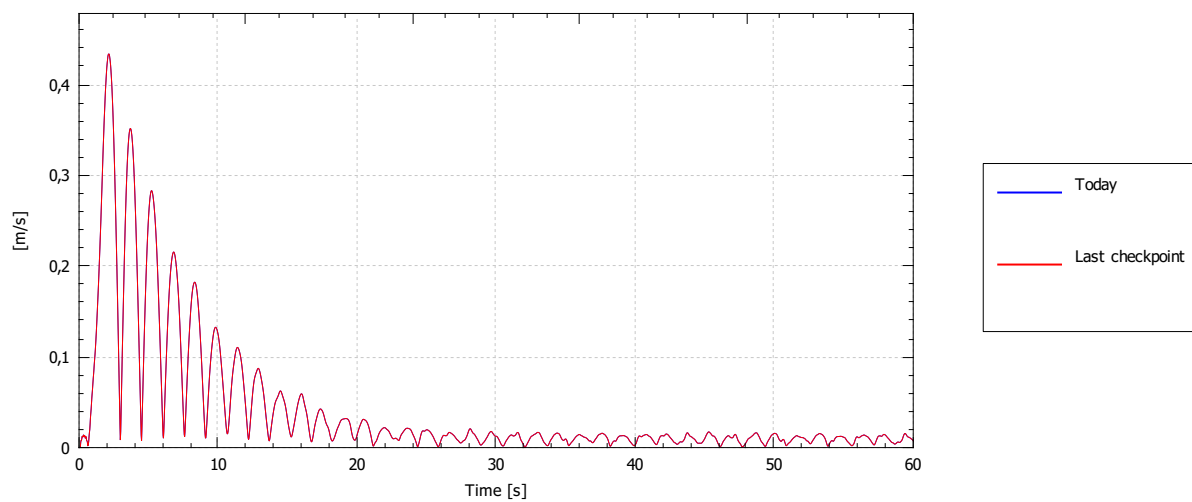




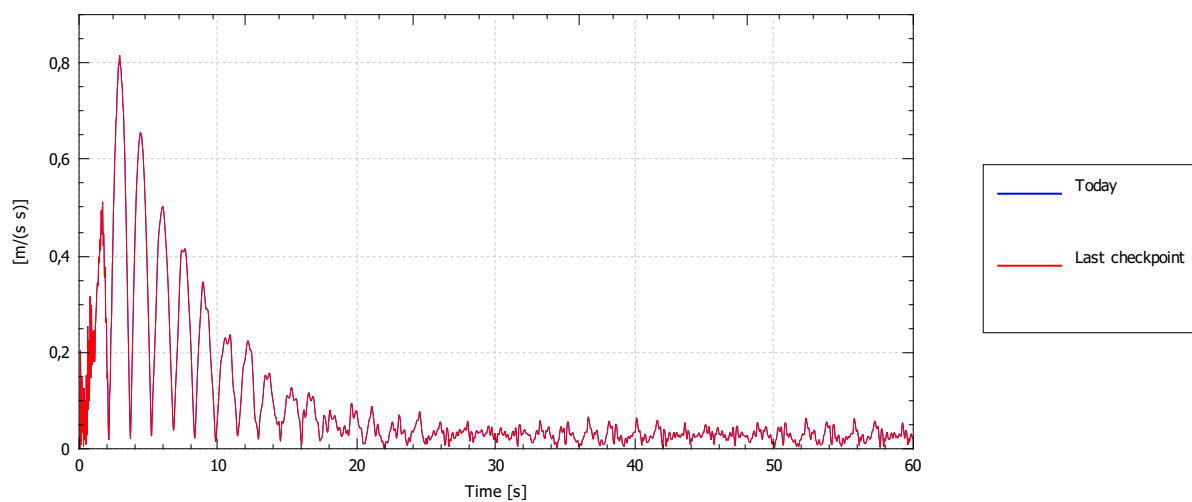
Displacement magnitude



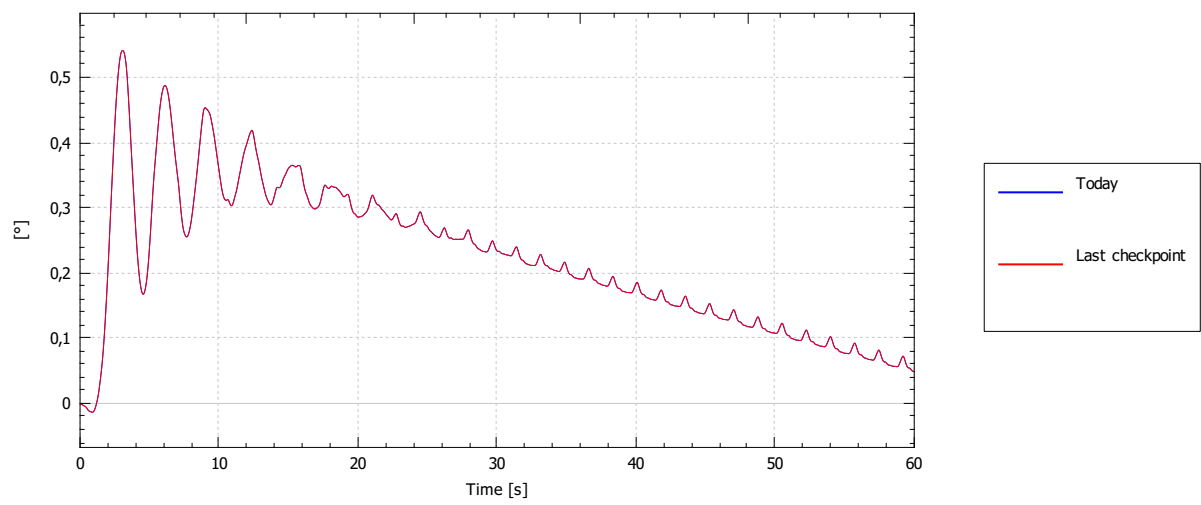
Speed



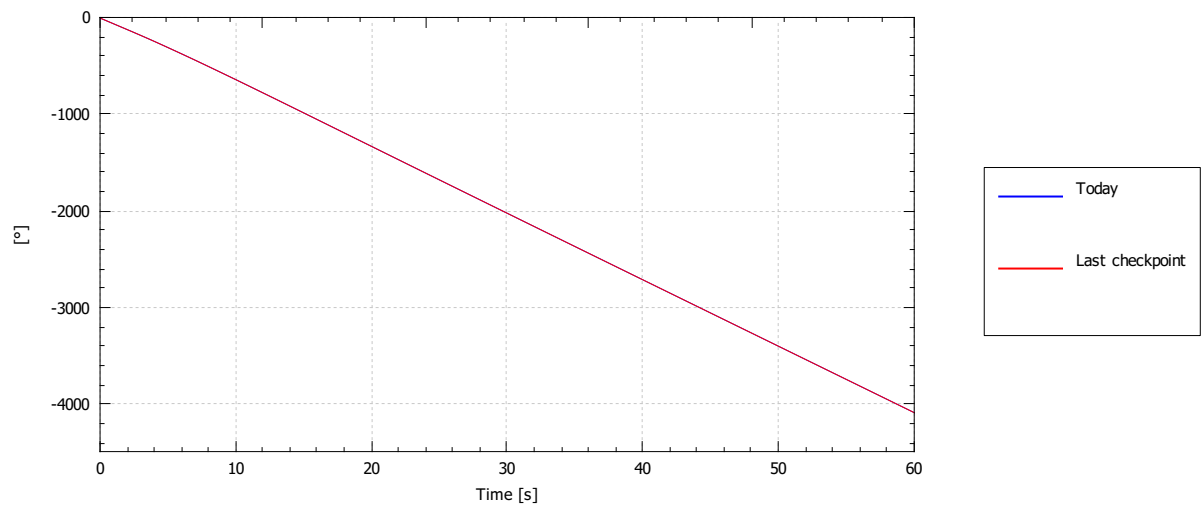
Acceleration, magnitude



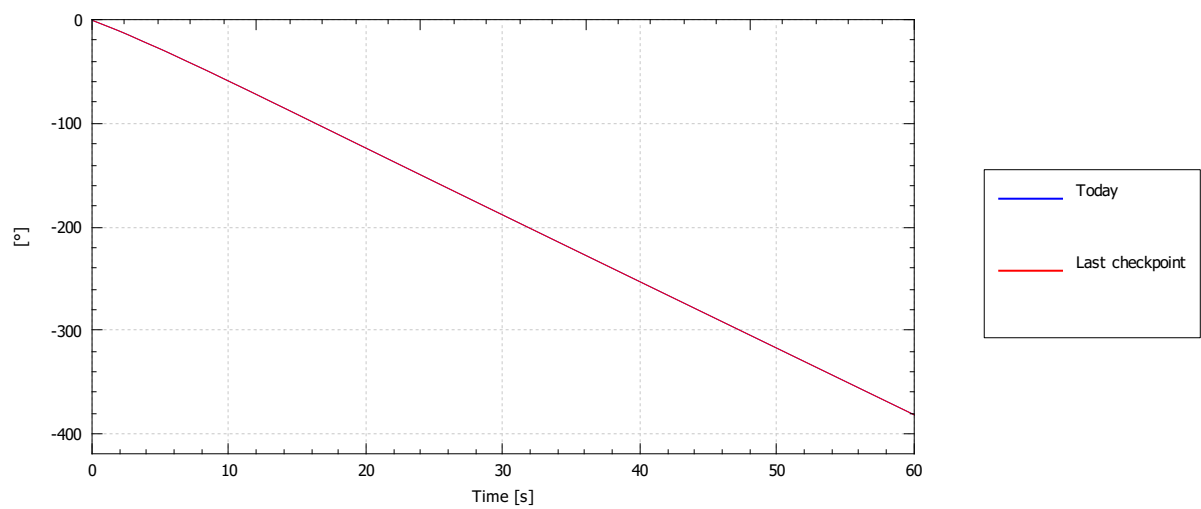
Rotational displacement (ru)



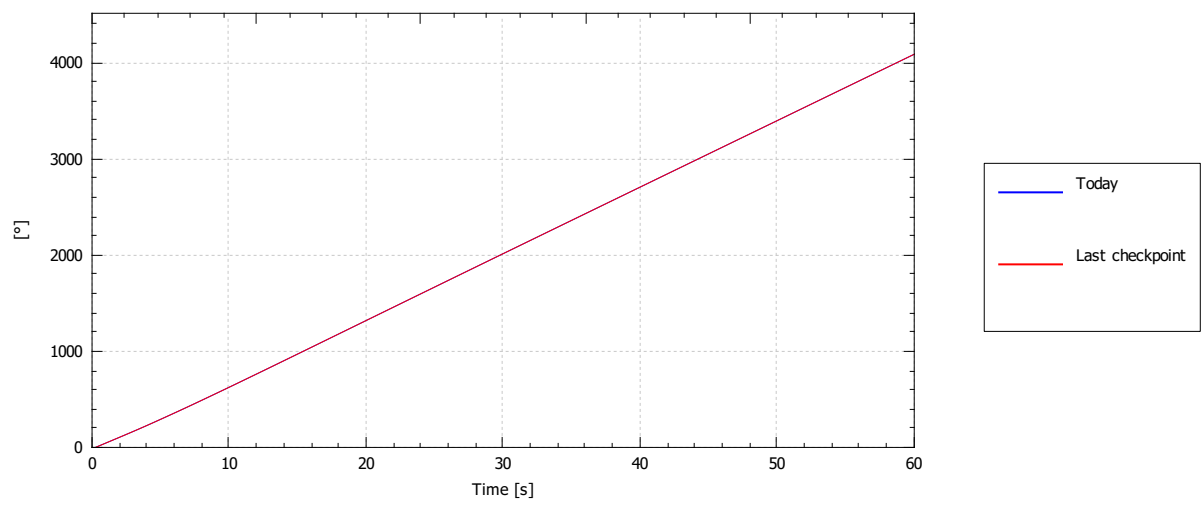
Rotational displacement (rv)



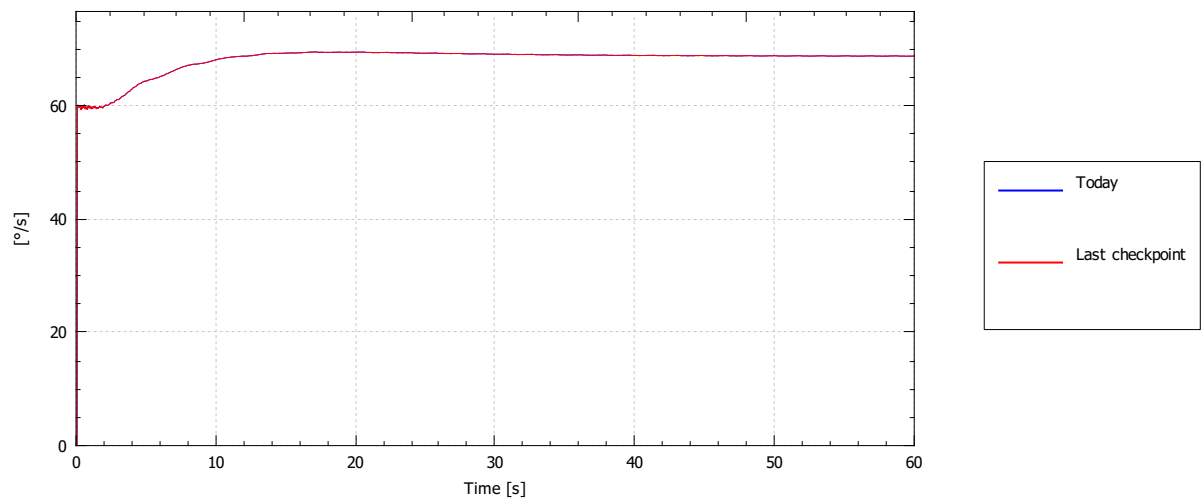
Rotational displacement (rw)



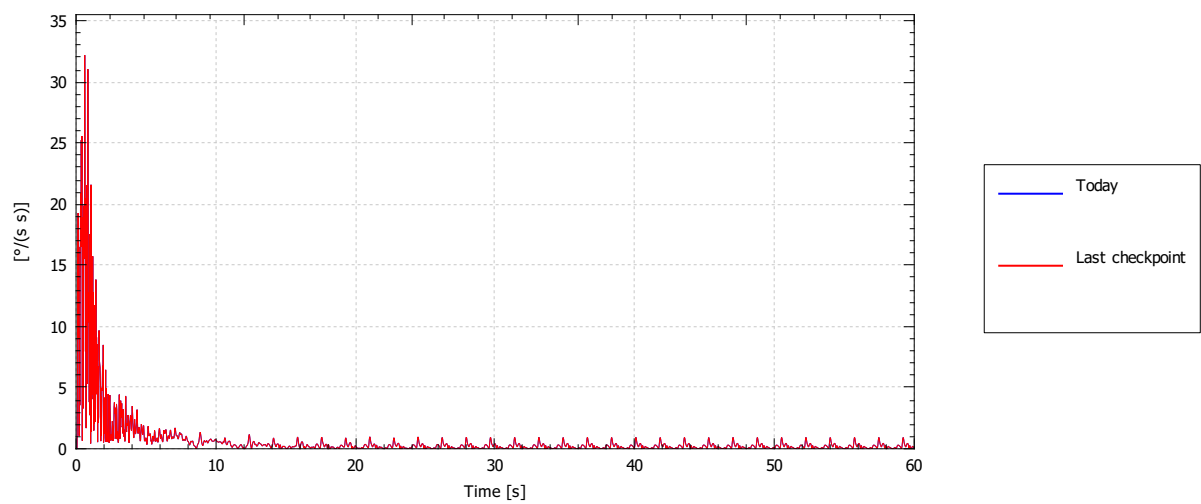
Rotational displacement magnitude



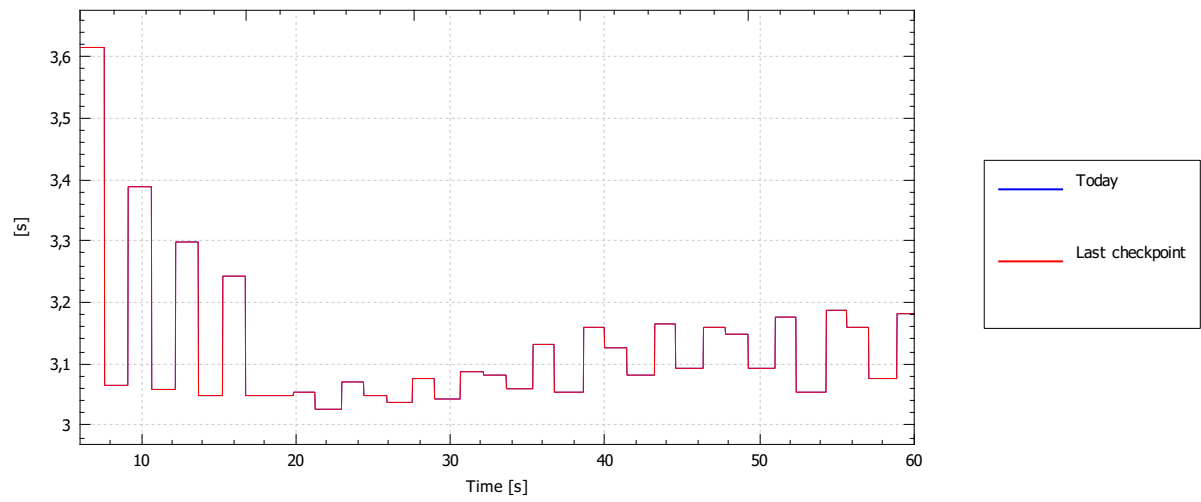
Rotational speed



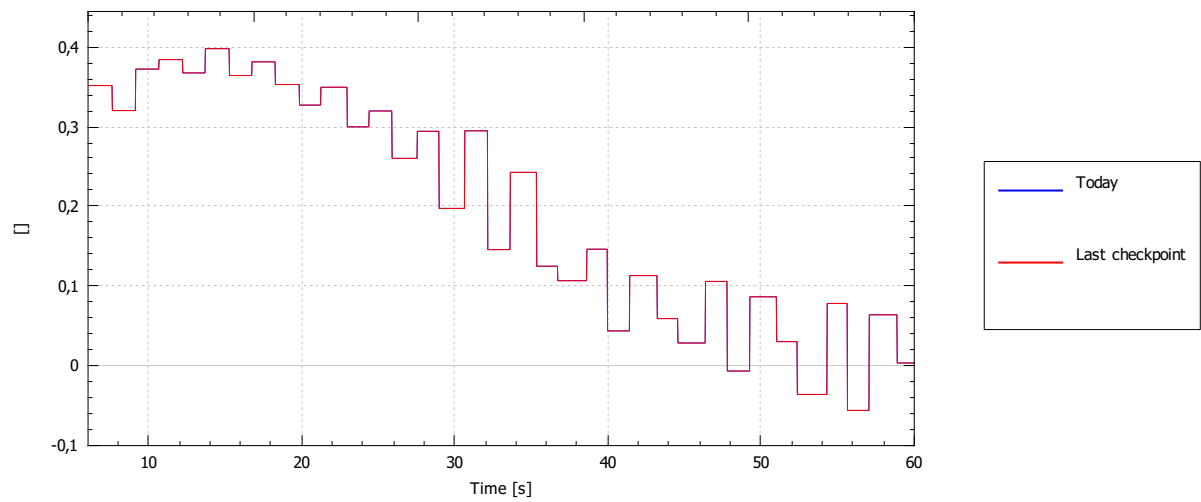
Rotational acceleration mag



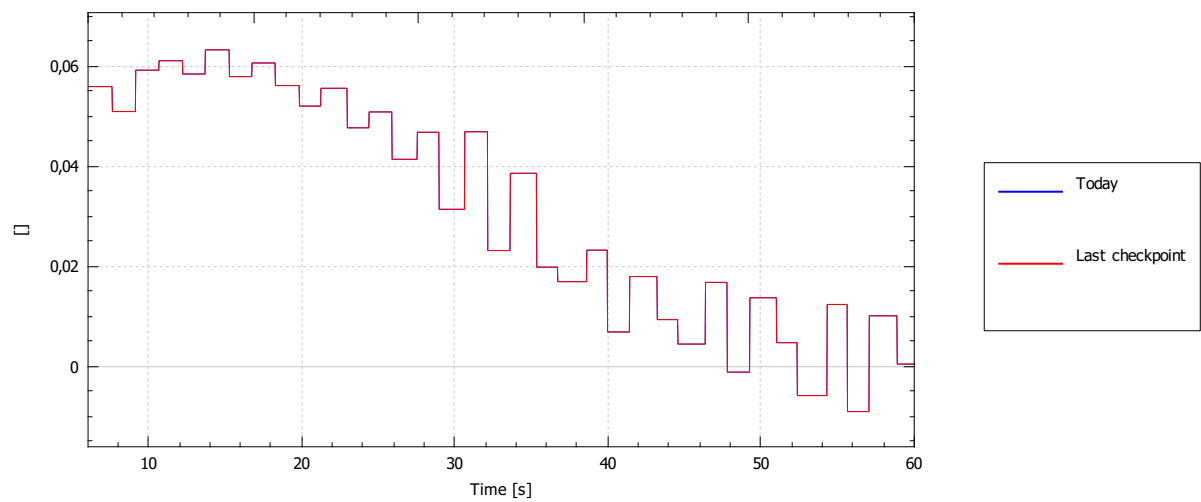
Displacement period



Displacement logarithmic decrement

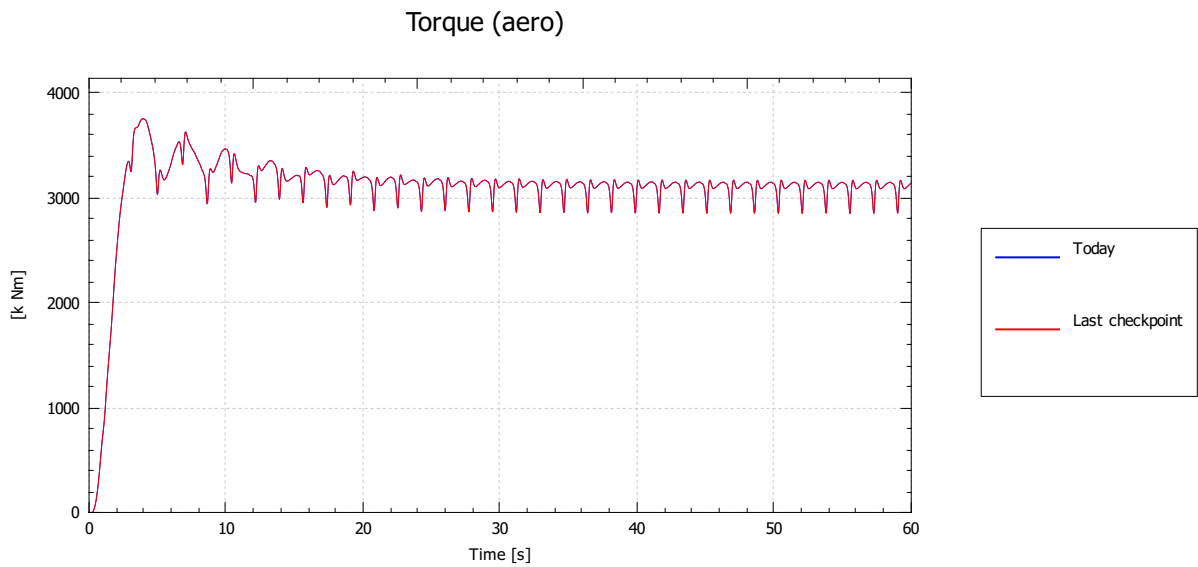
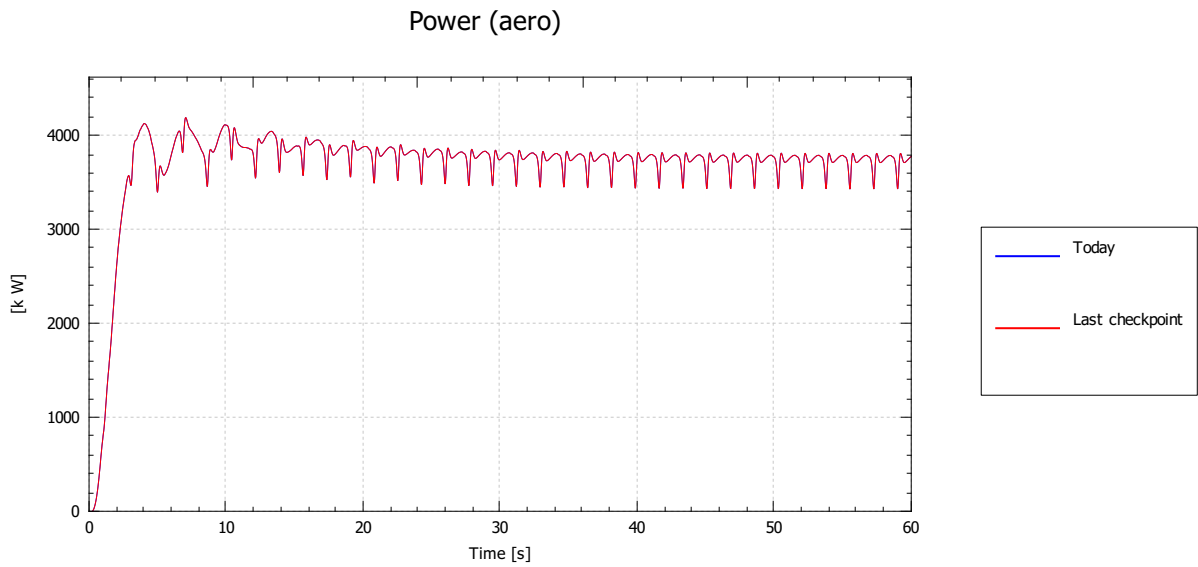


Displacement damping ratio

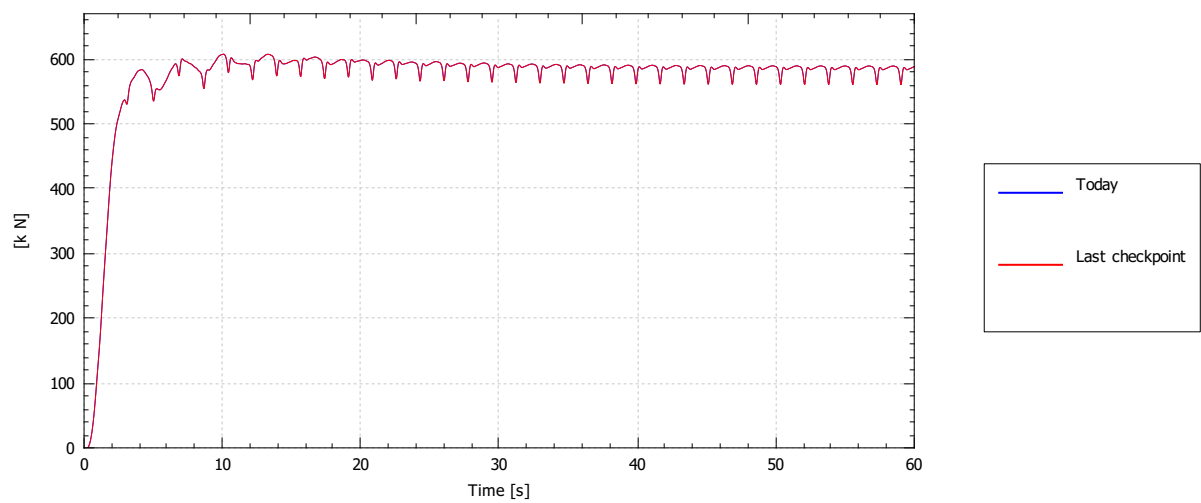


Load case: Reduction factor for structural data

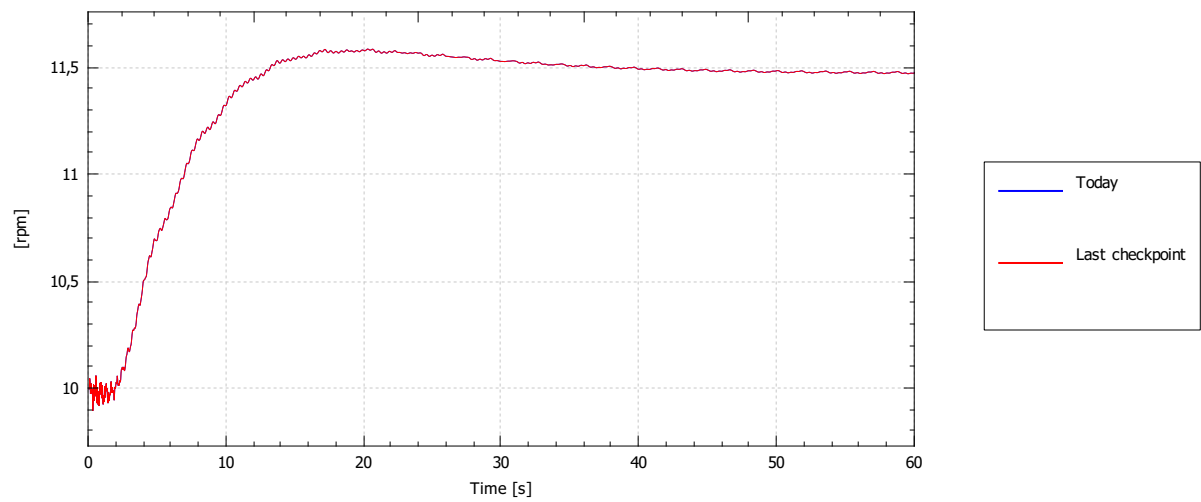
Rotor



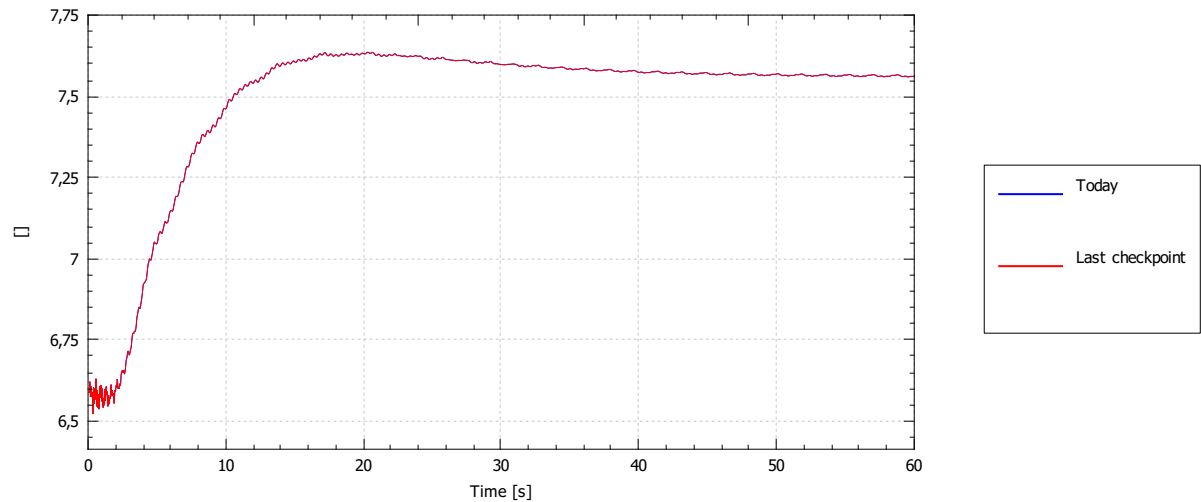
Thrust (aero)



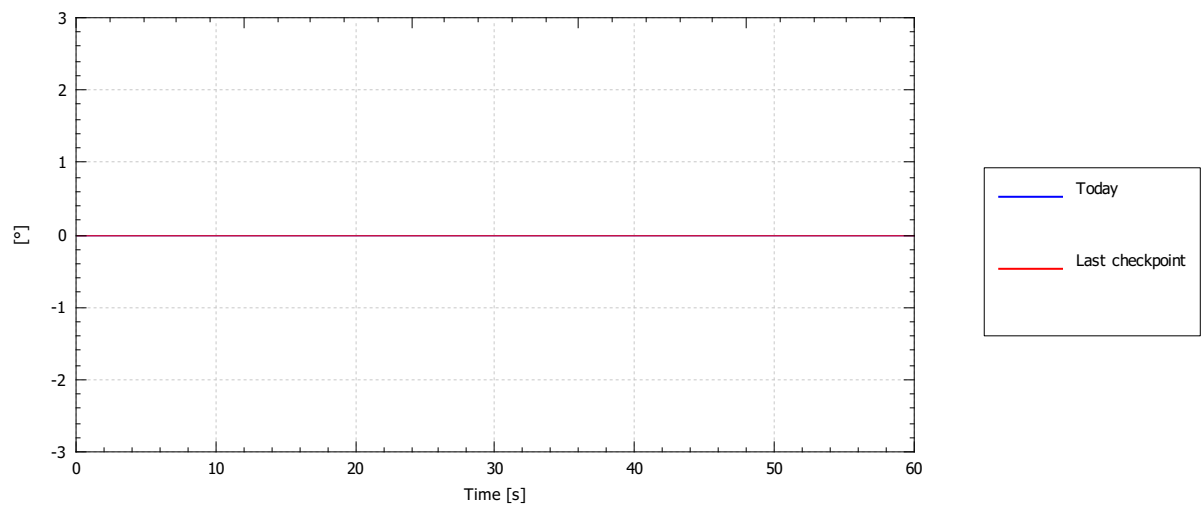
RPM



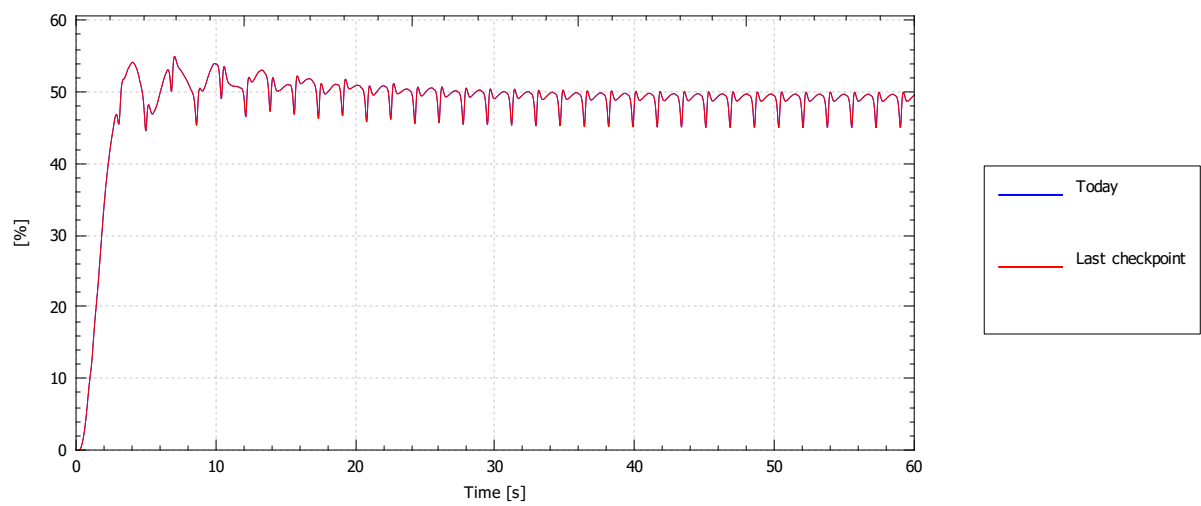
TSR



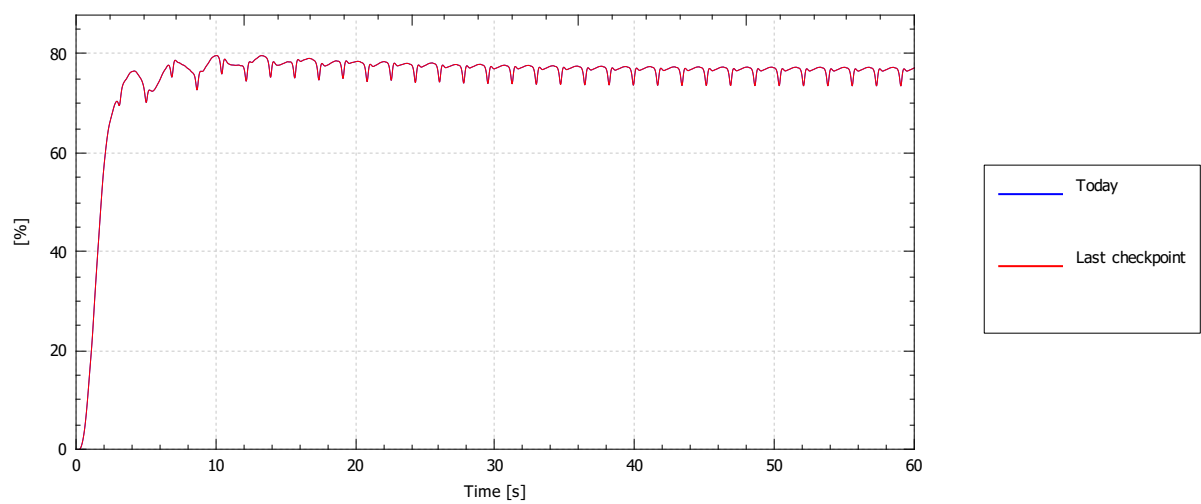
Representative demanded pitch angle



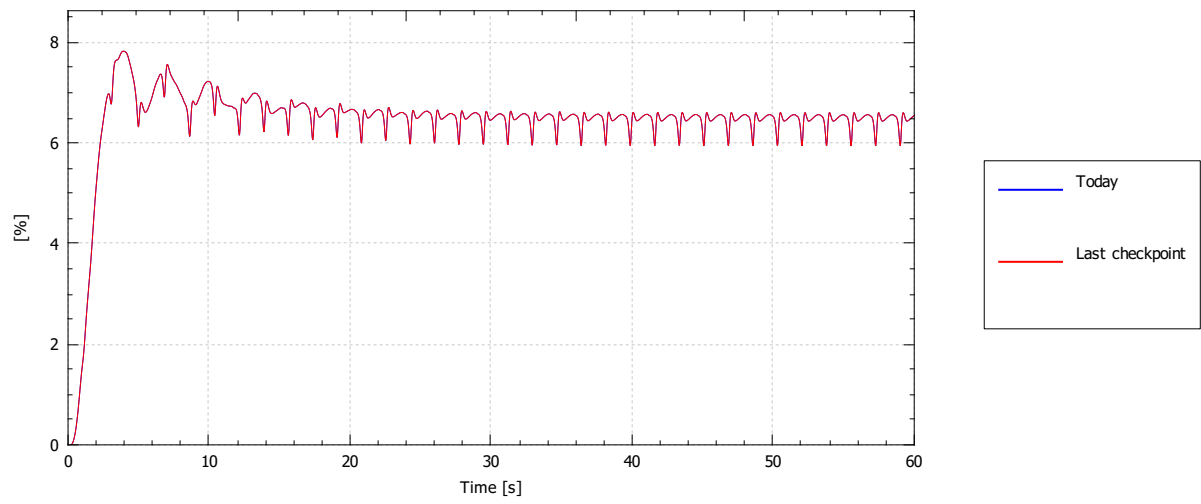
Power coef. (CP)



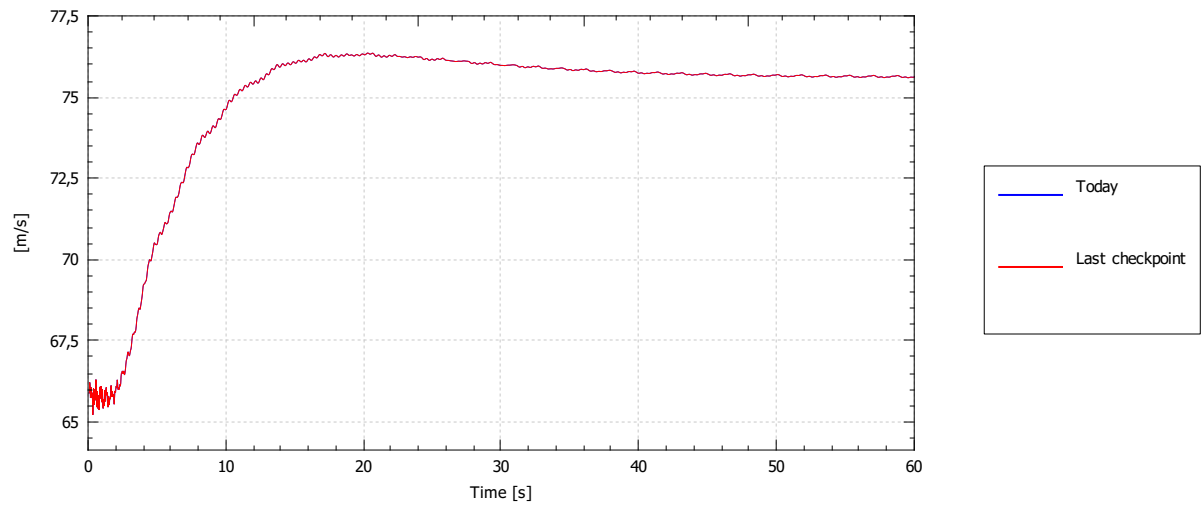
Thrust coef. (CT)



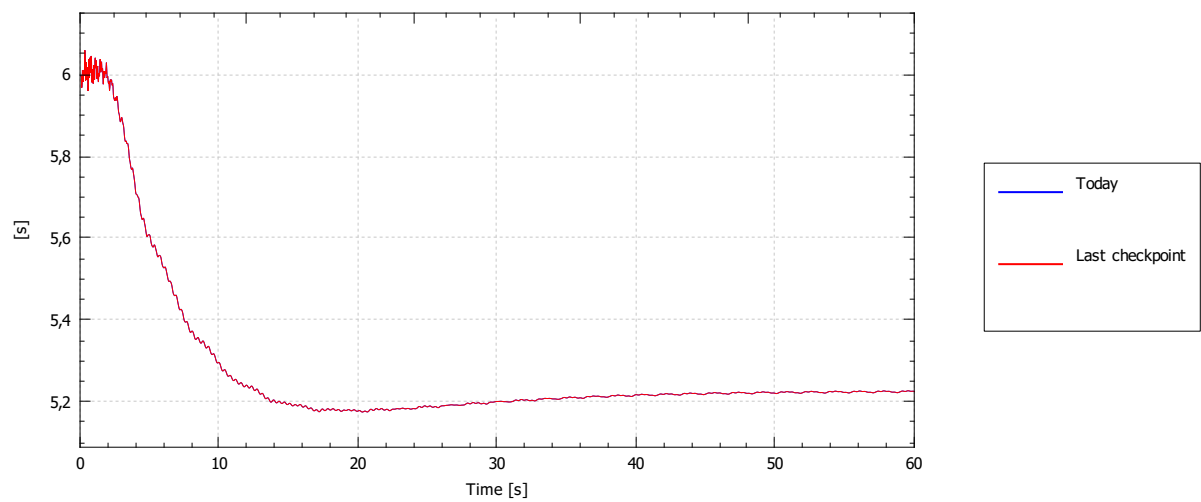
Torque coef. (CQ)



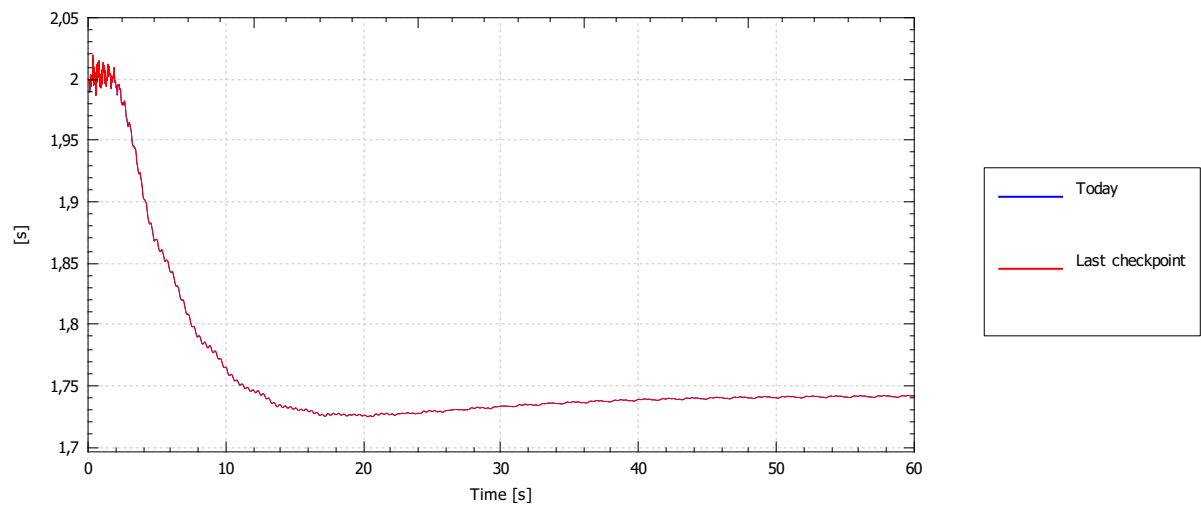
Tip speed



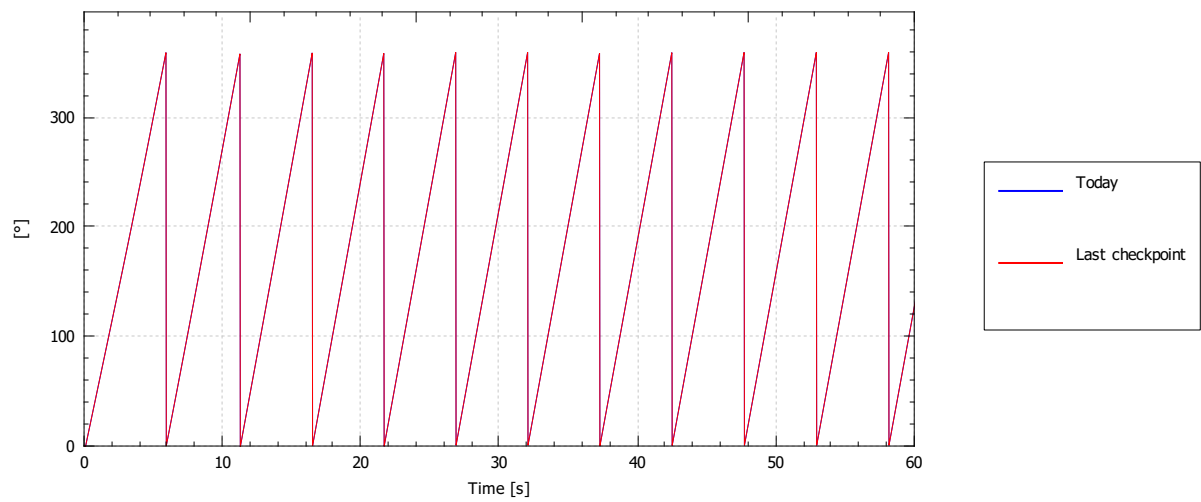
1P (one revolution)



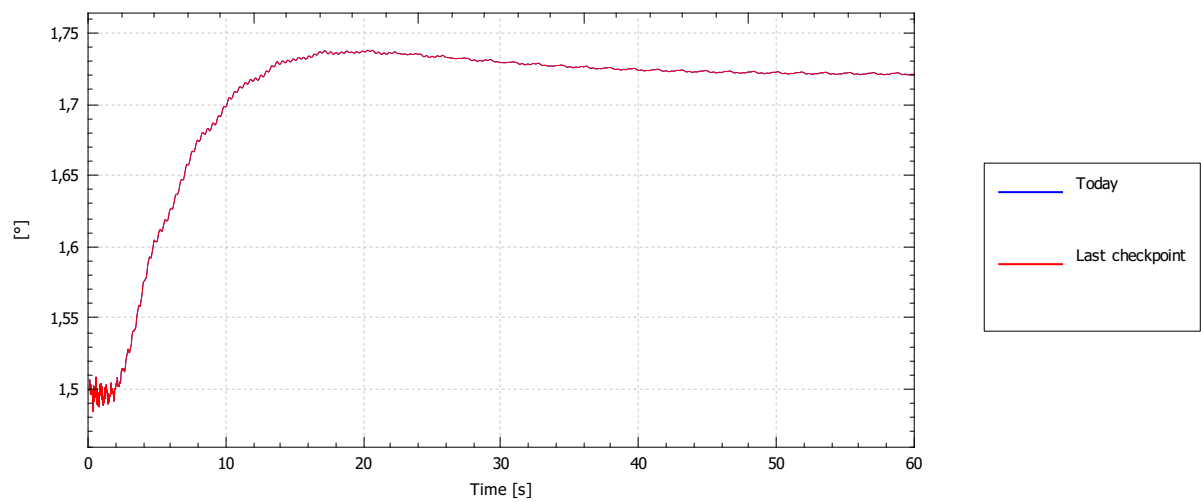
nP (blade passing)



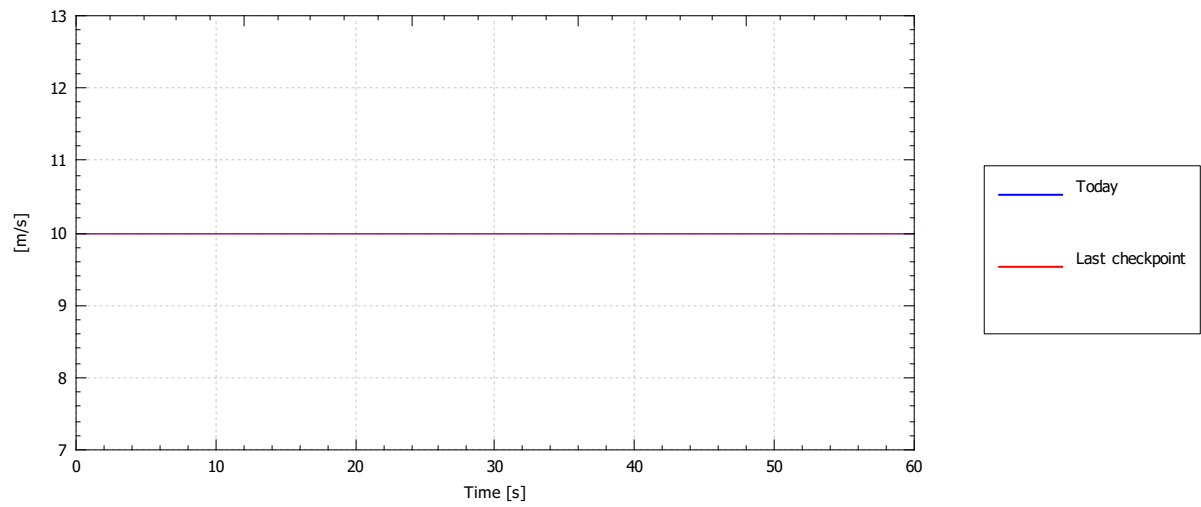
Azimuth angle



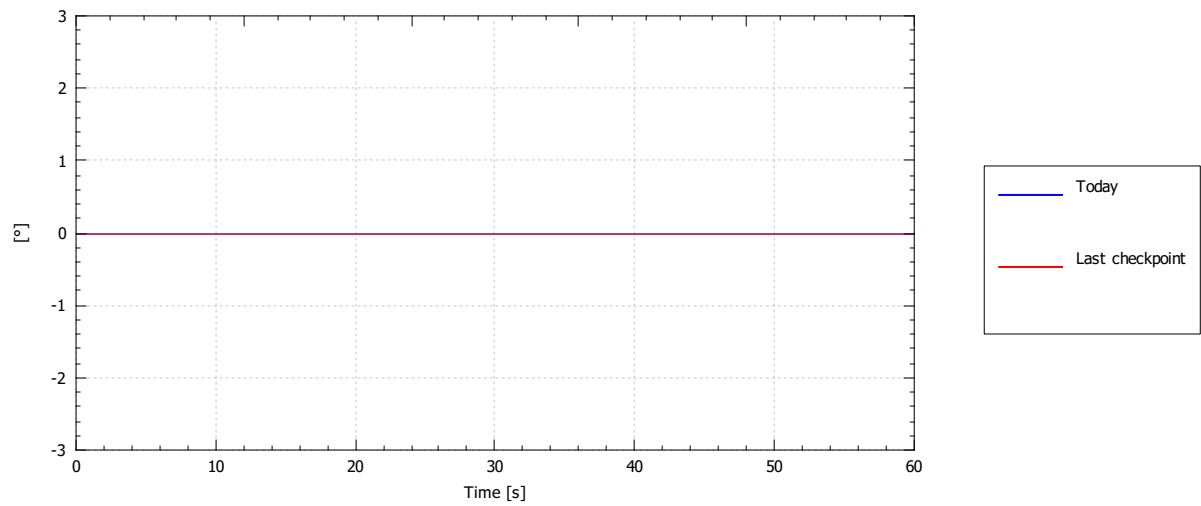
Rotation per timestep



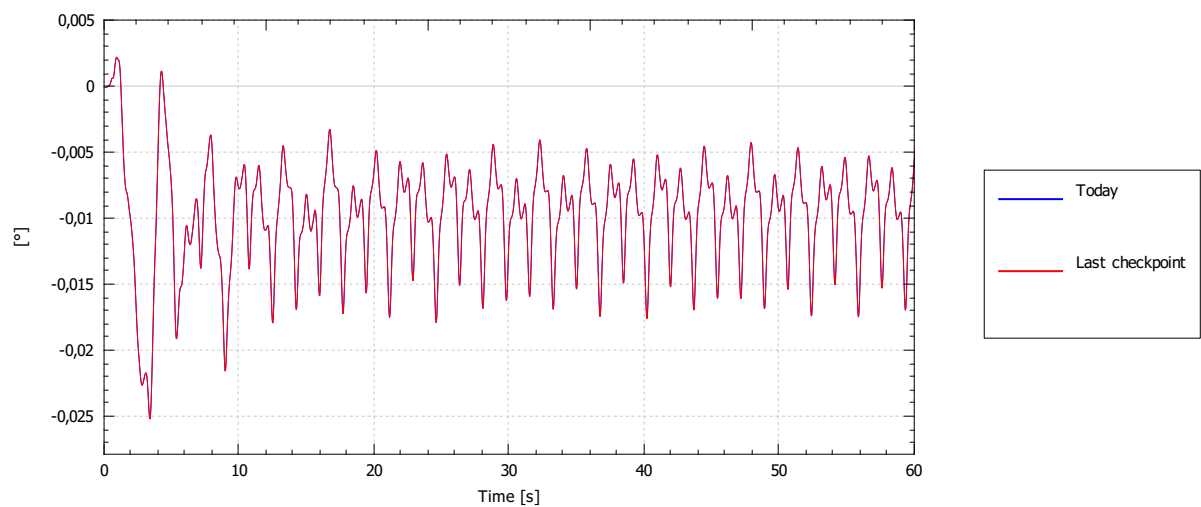
Wind speed at hub, magnitude



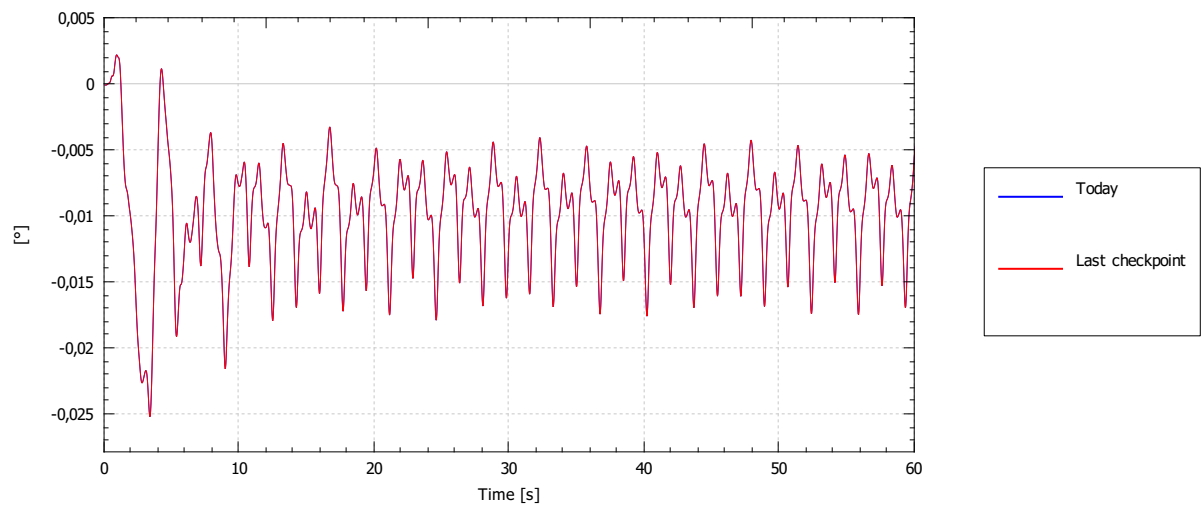
Wind angle at hub



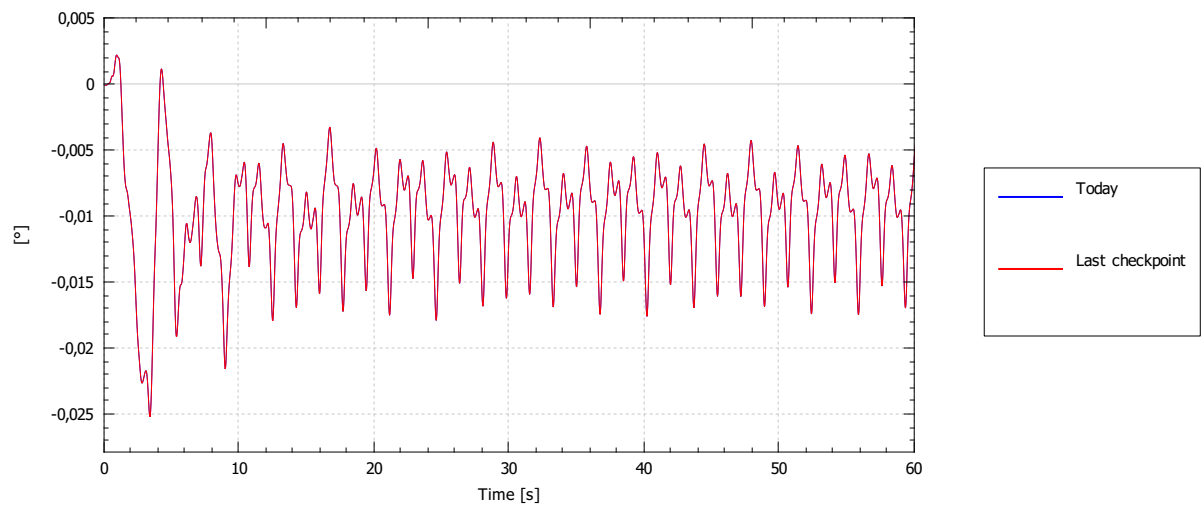
Yaw angle relative to forward



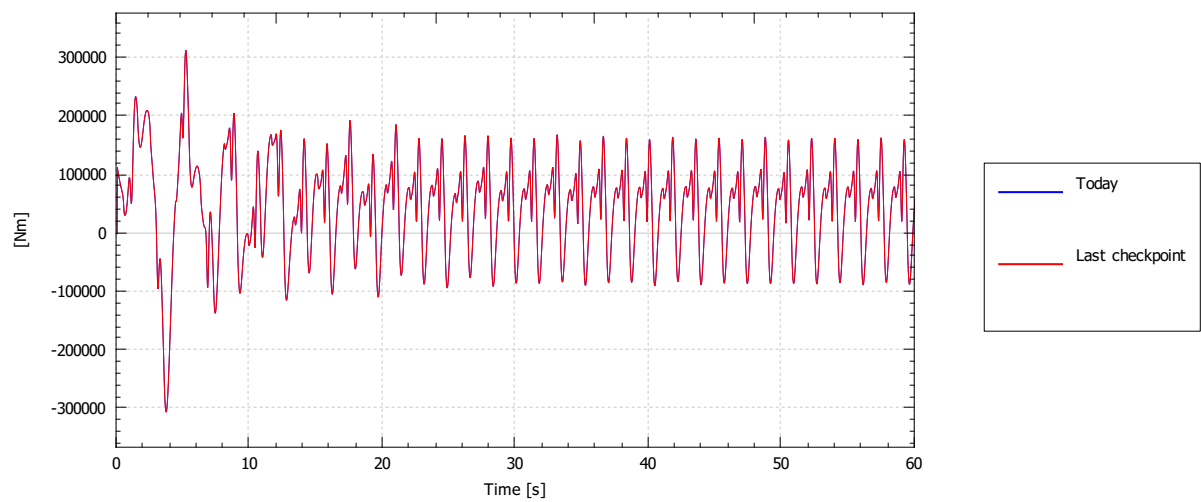
Yaw angle to reference direction



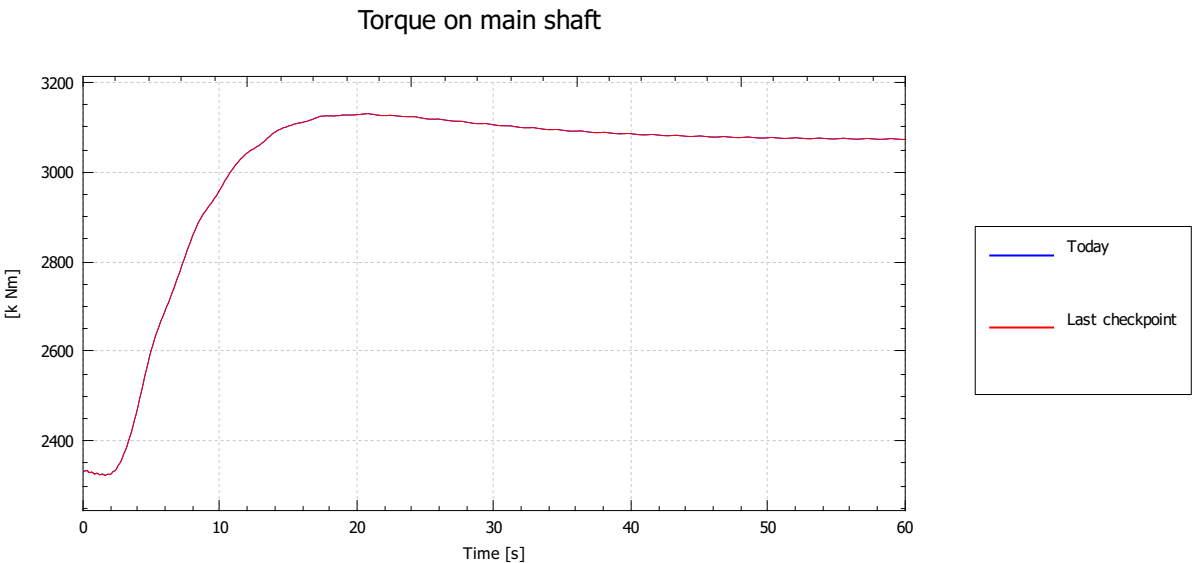
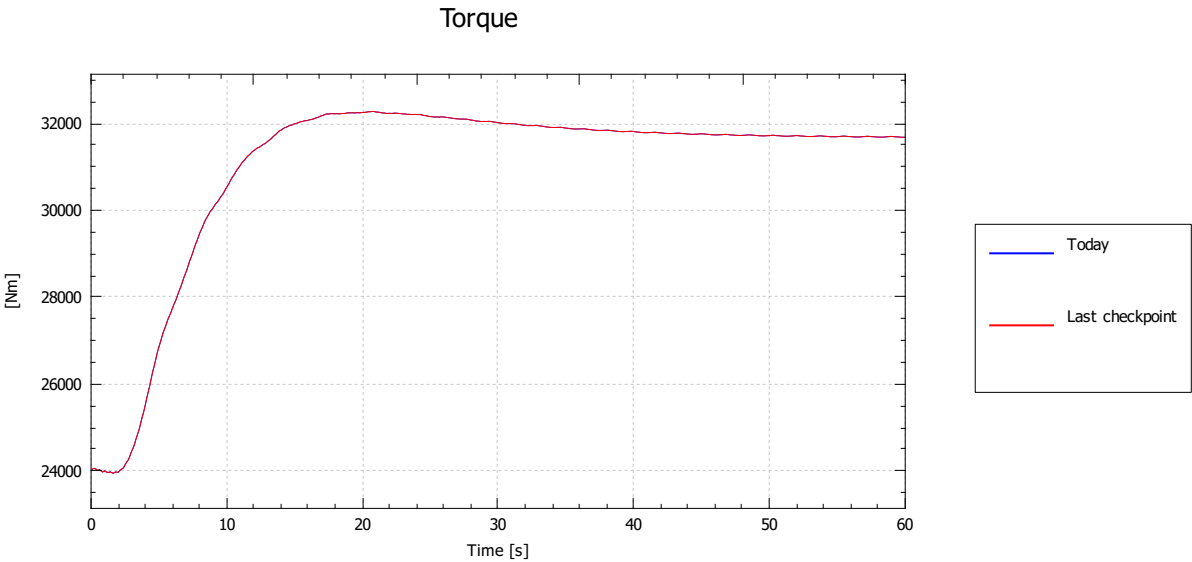
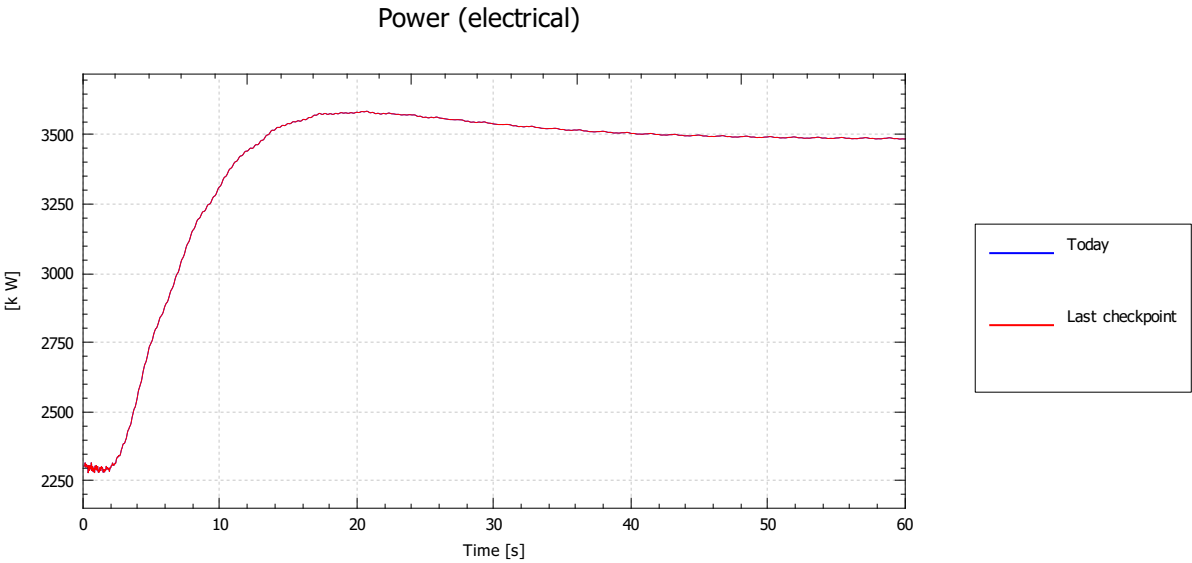
Yaw error



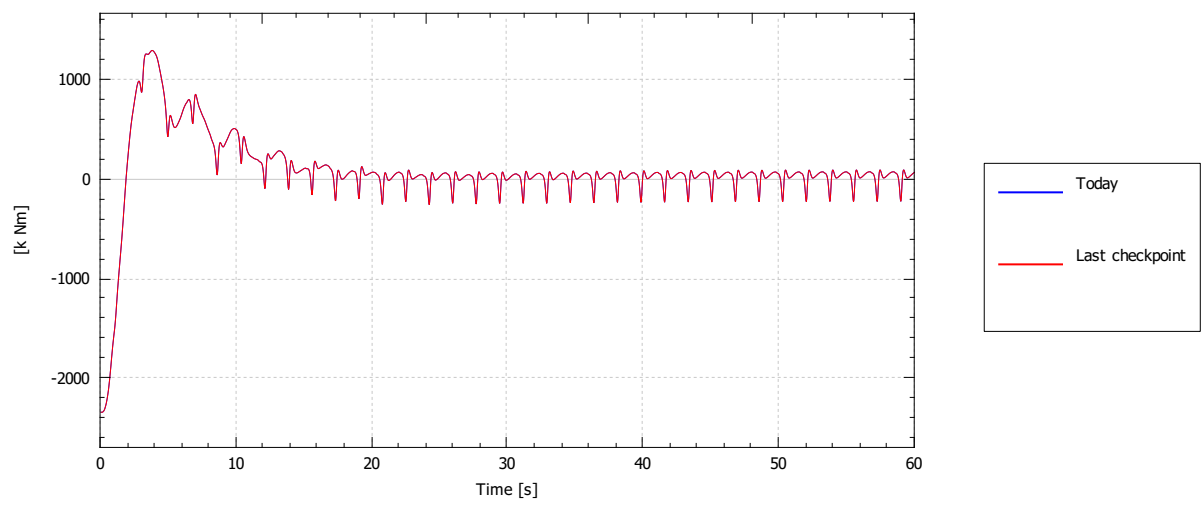
Torque about yaw axis



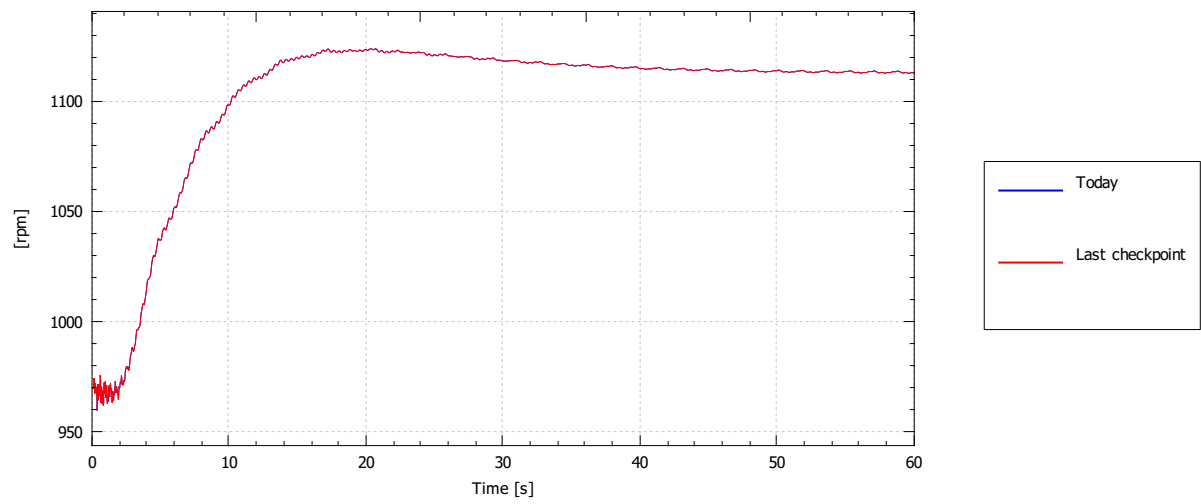
Generator



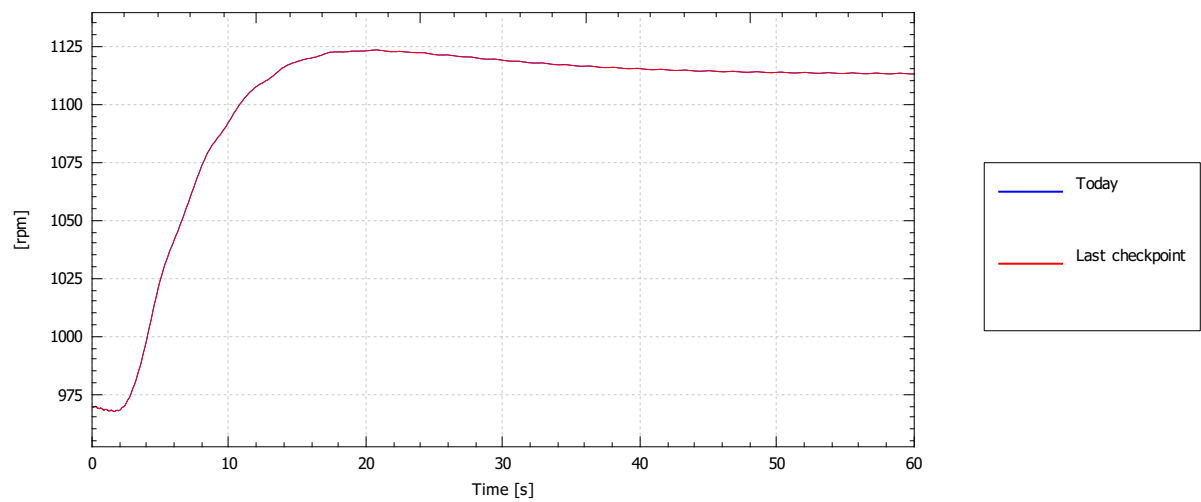
Torque diff. on main shaft



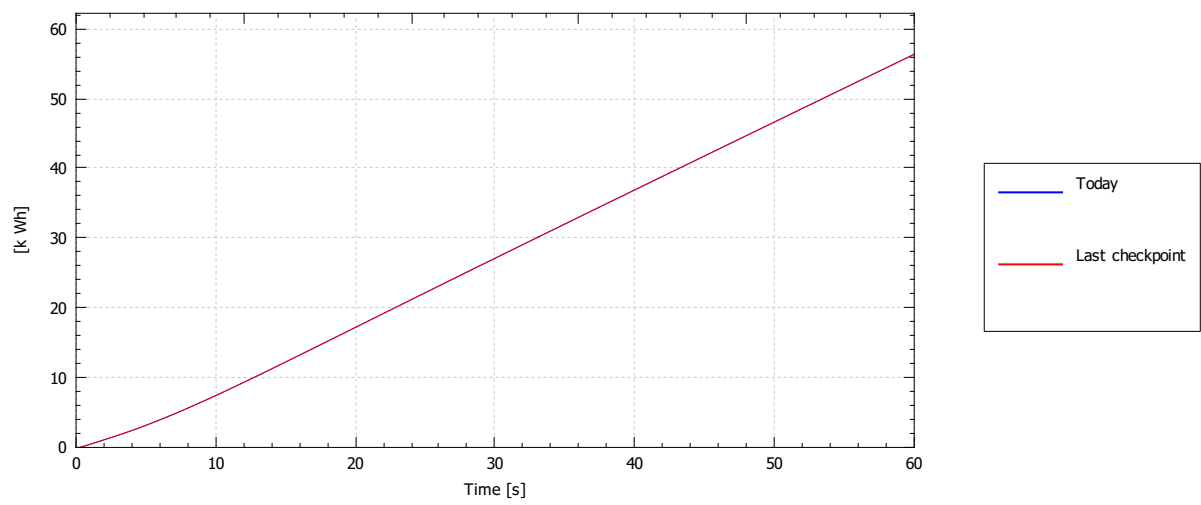
RPM



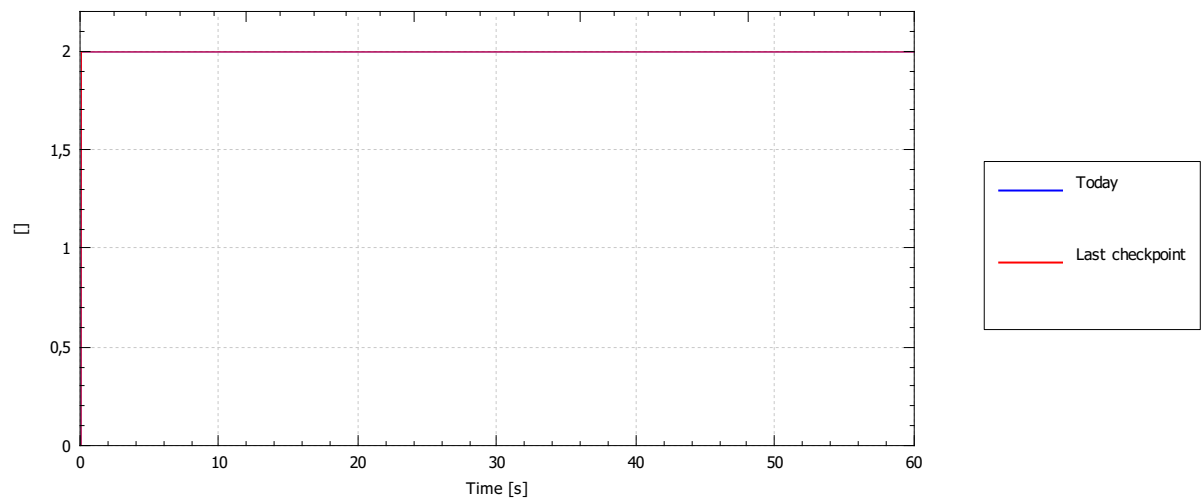
Filtered RPM



Electricity production

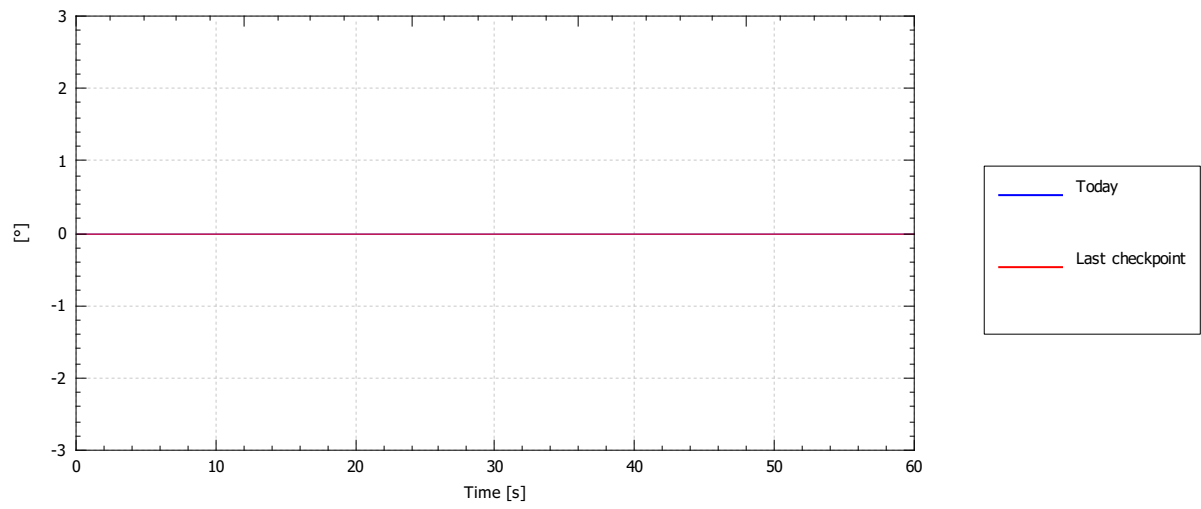


Region

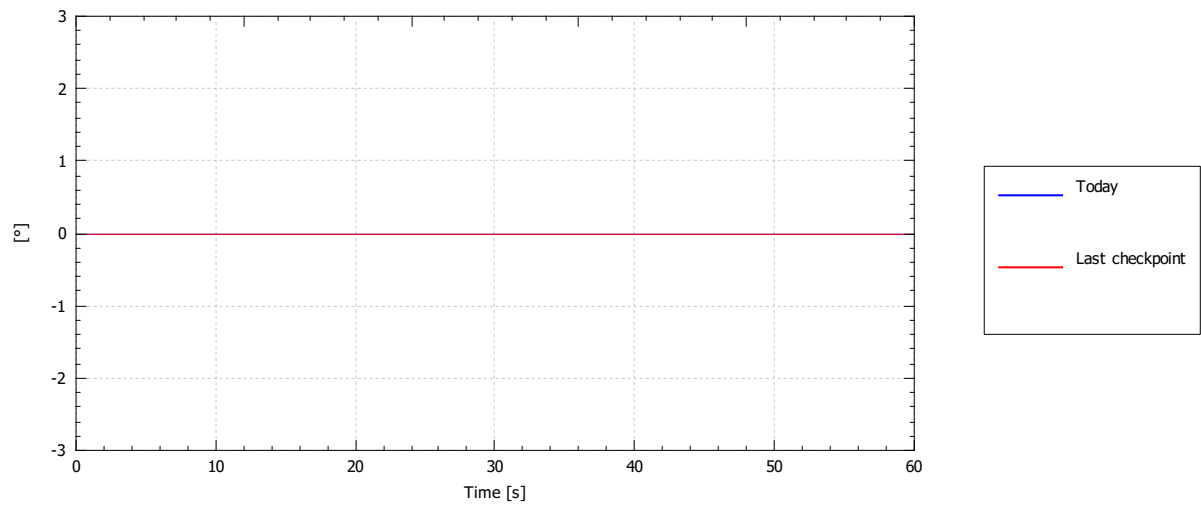


Demanded pitch controller

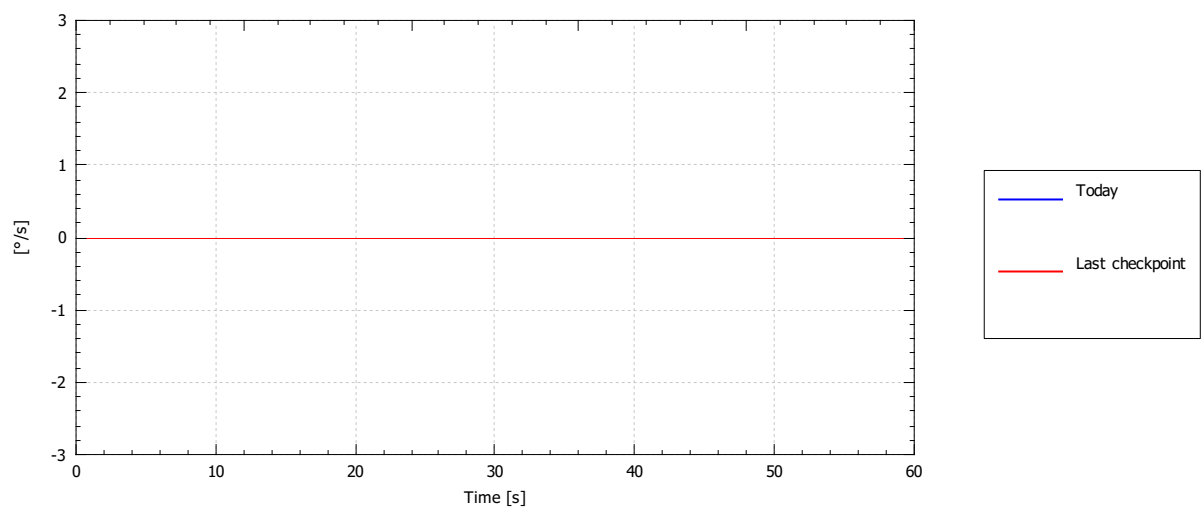
Demanded collective pitch angle



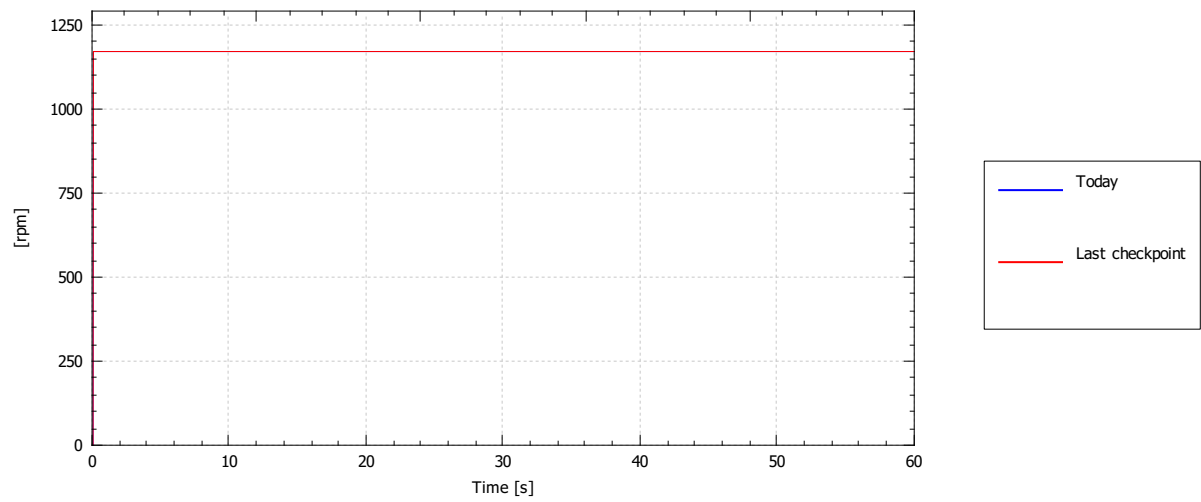
Cumulative demanded collective pitch angle



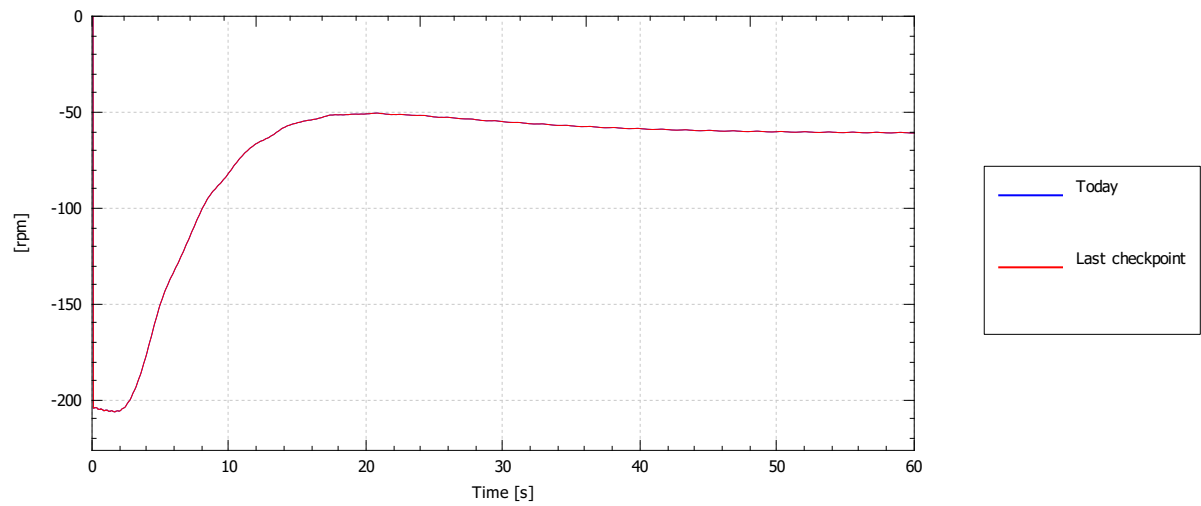
Demanded collective pitch angle rate



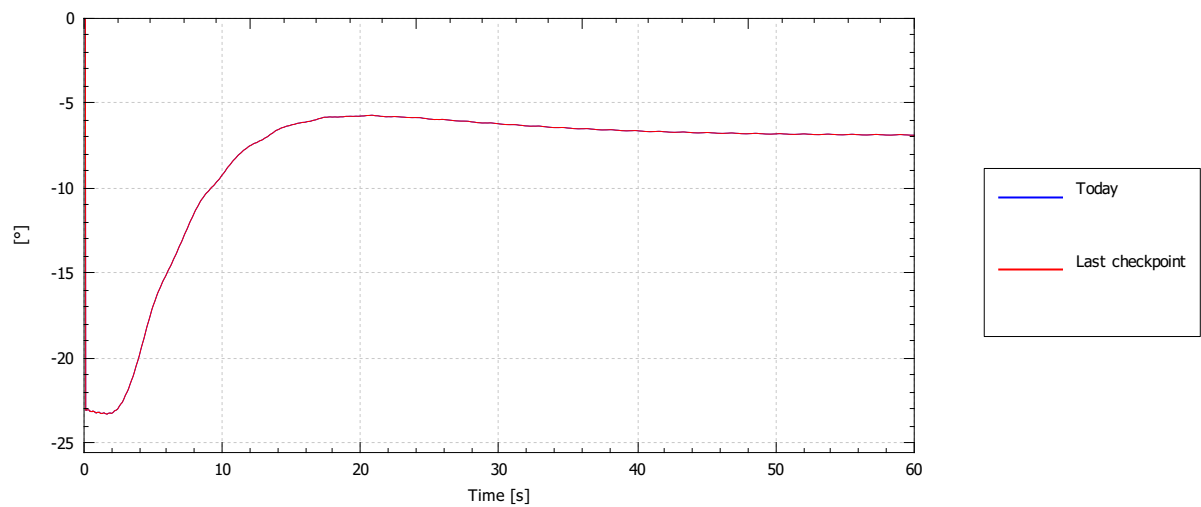
Set point



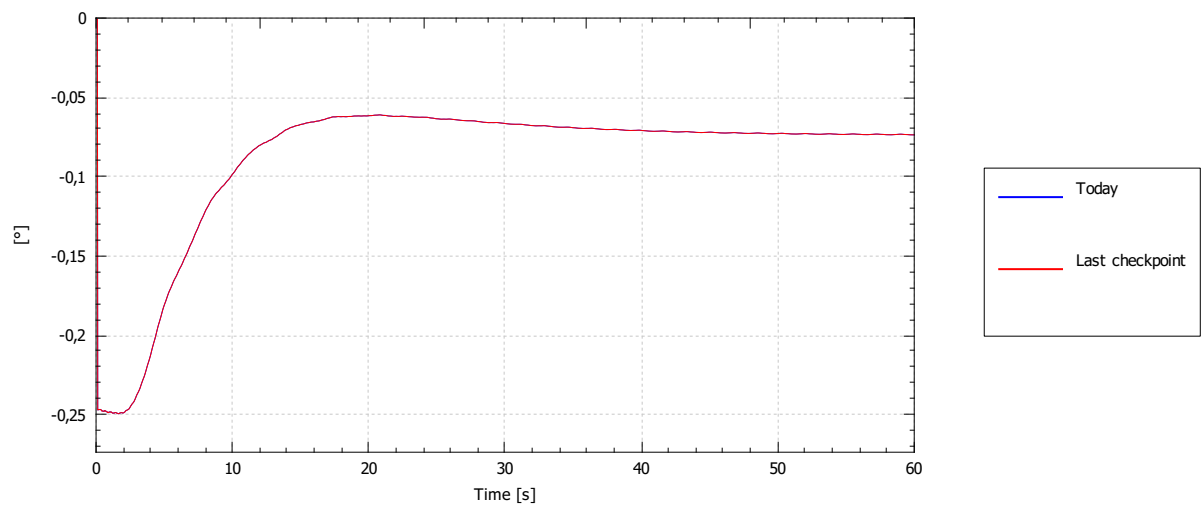
RPM error



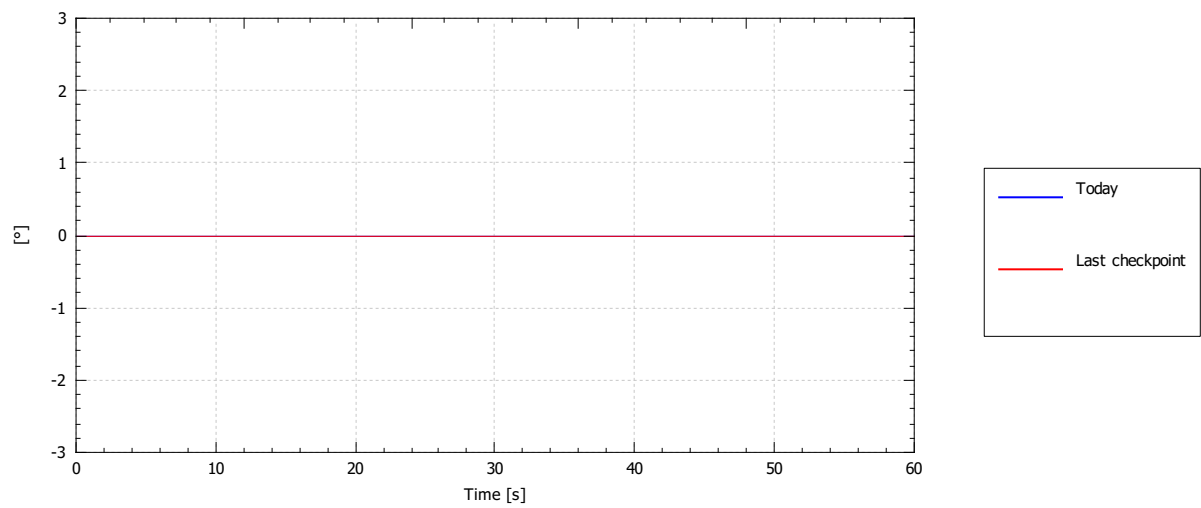
P term



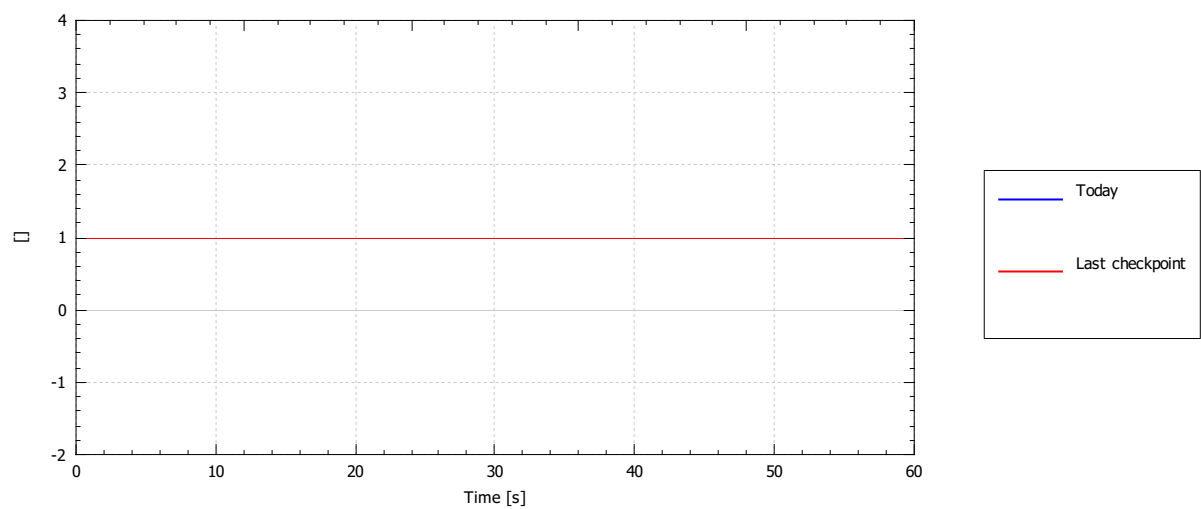
I term

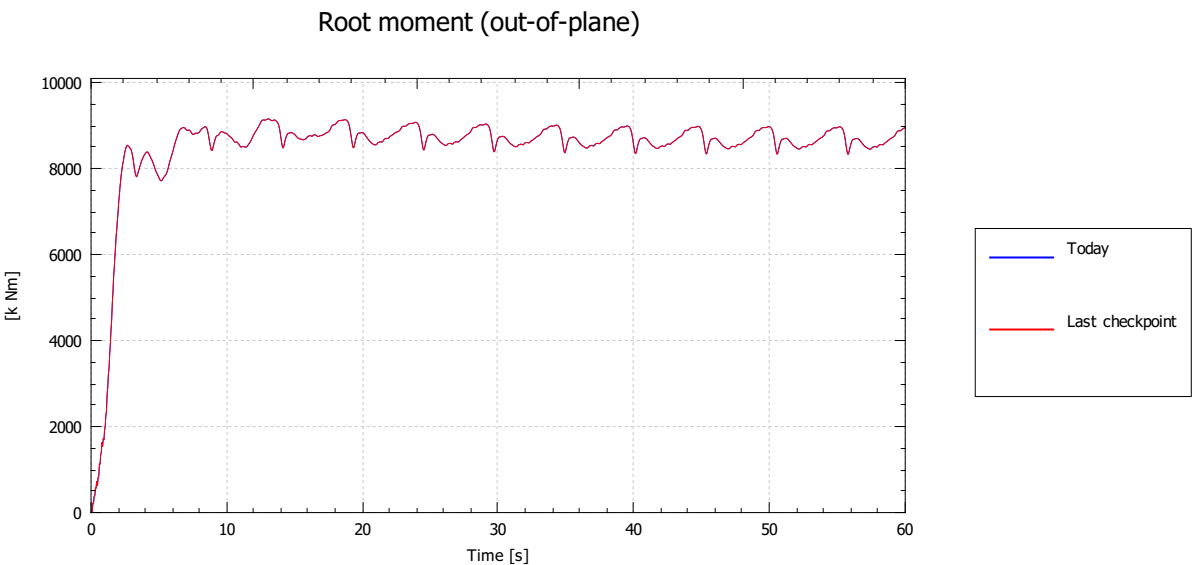
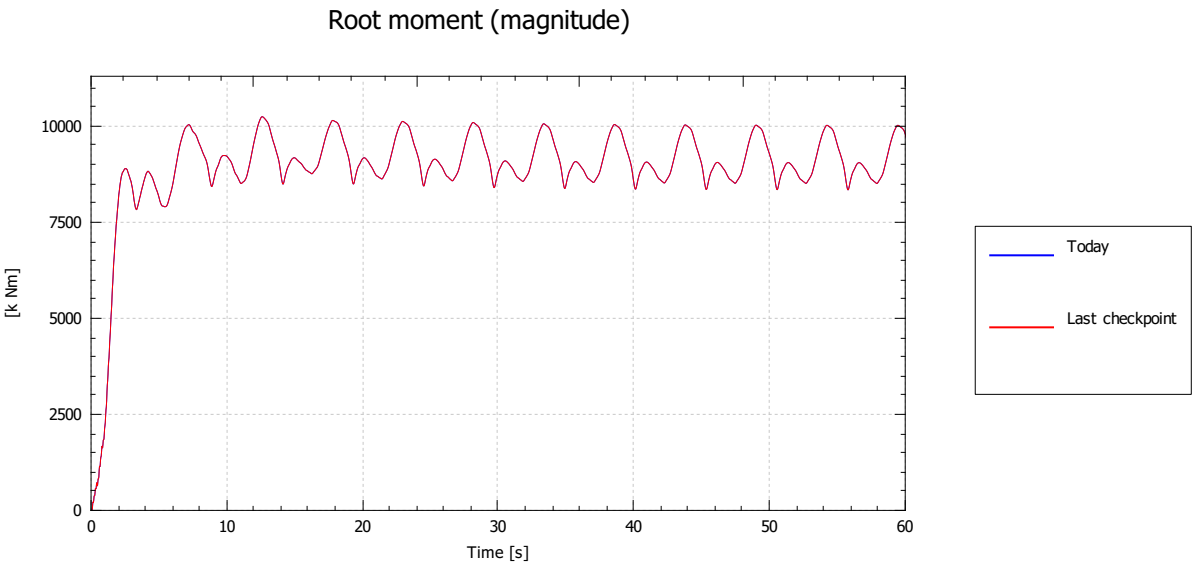
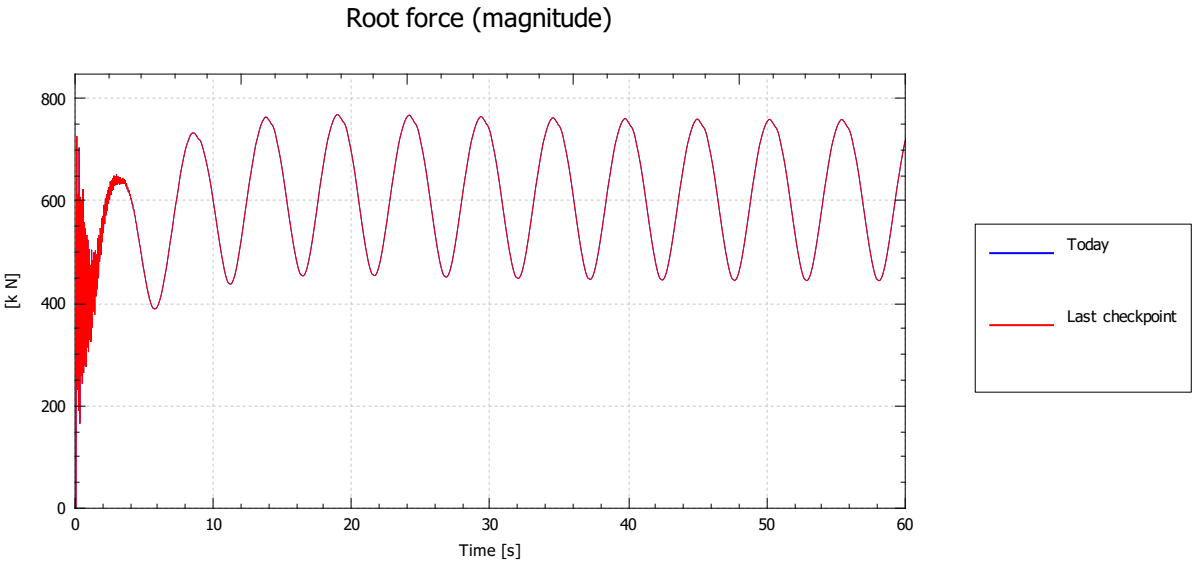


D term

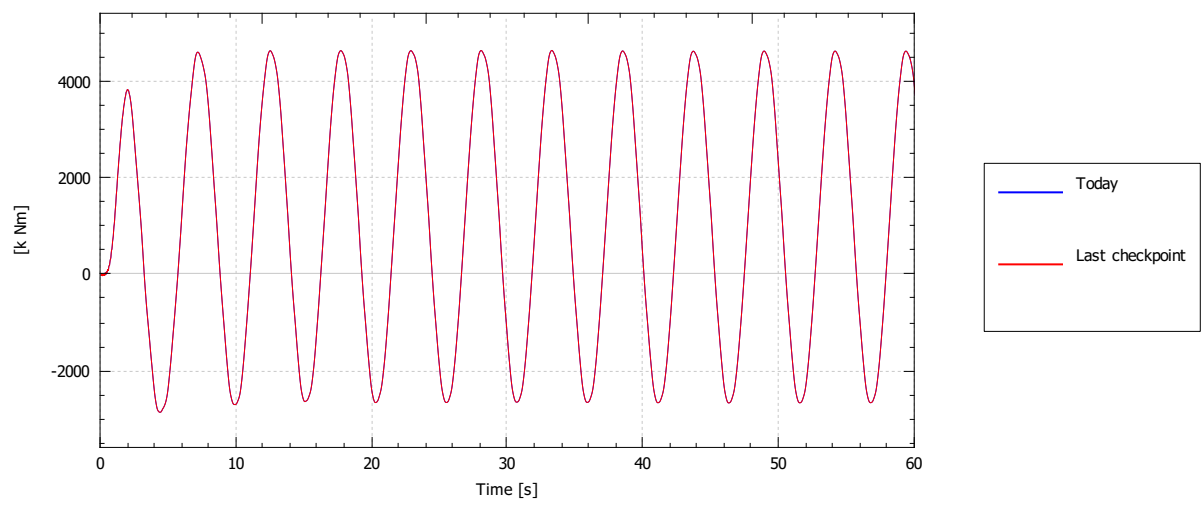


Gain scheduling factor

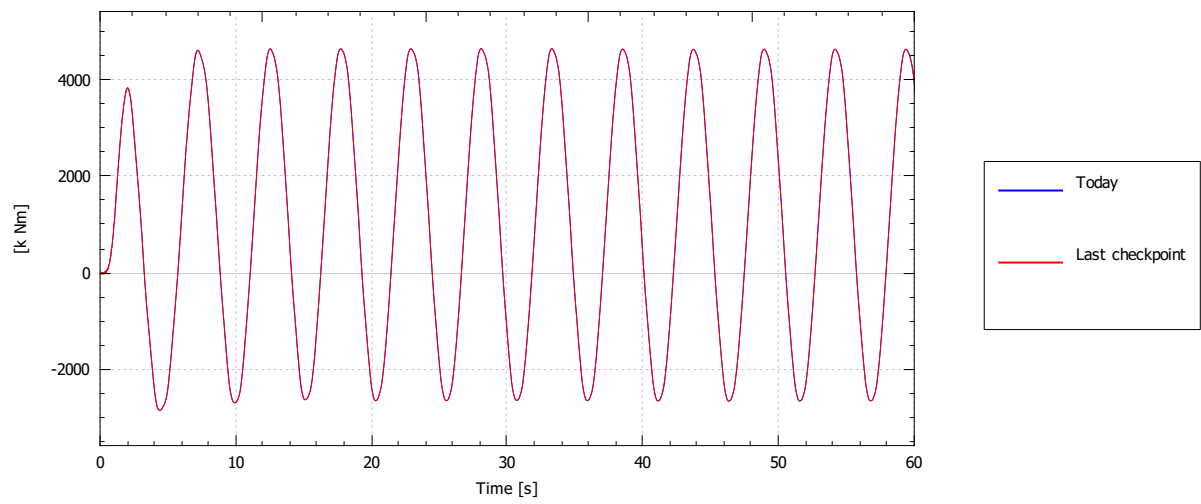




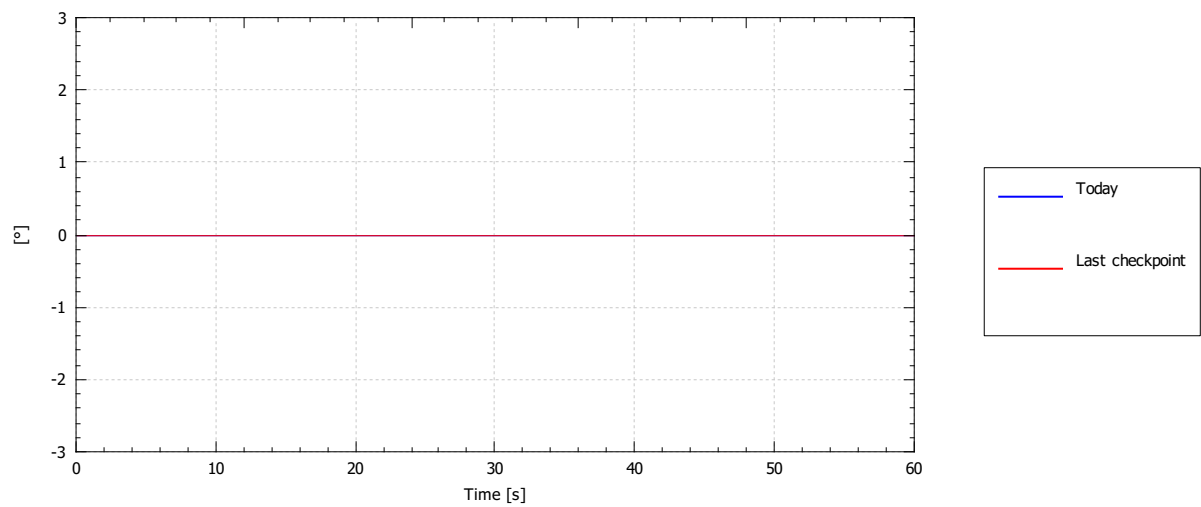
Root moment (in-plane)



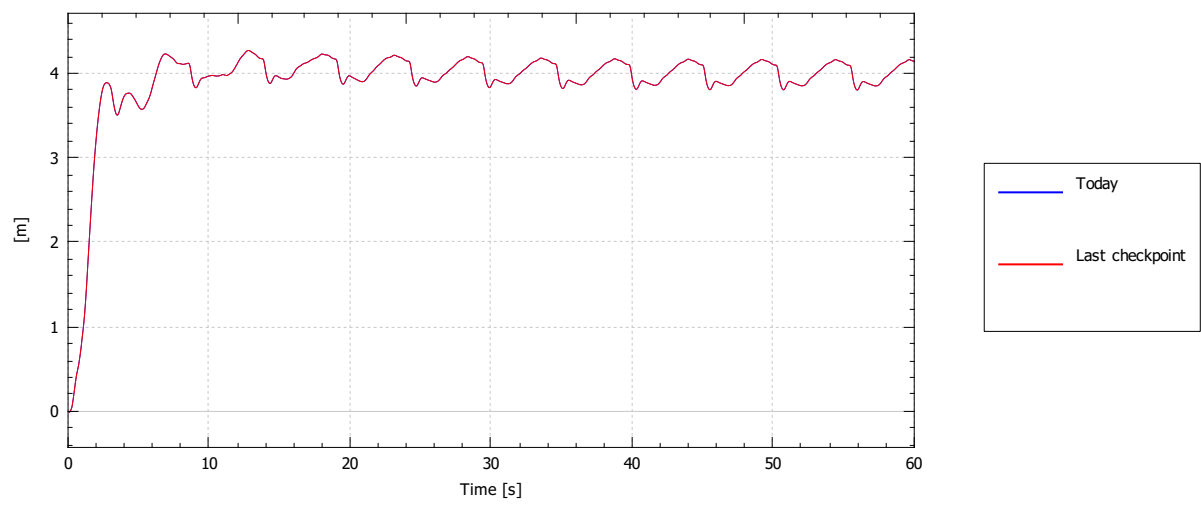
Root moment about shaft



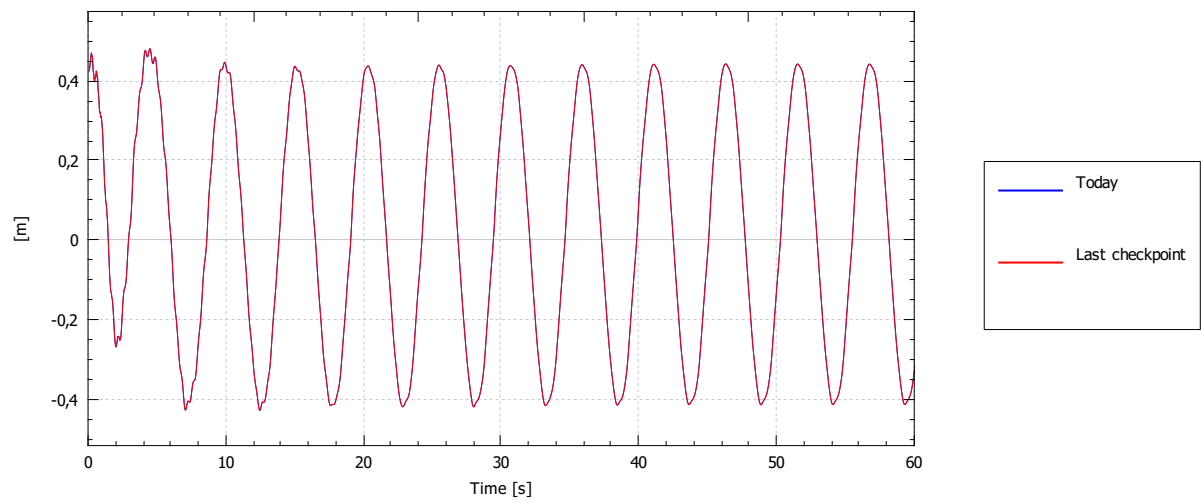
Pitch angle



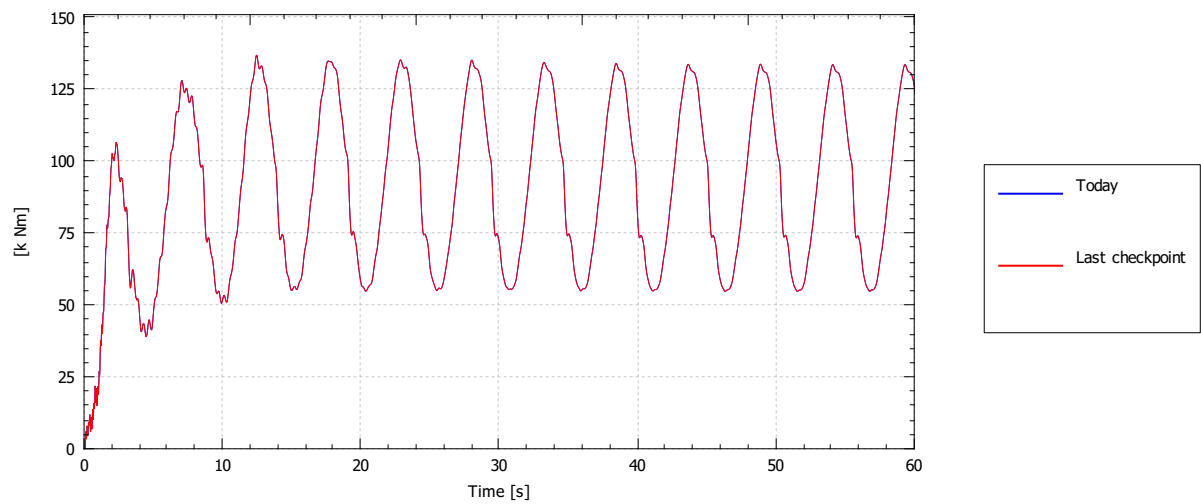
Tip deflection (out-of-plane)

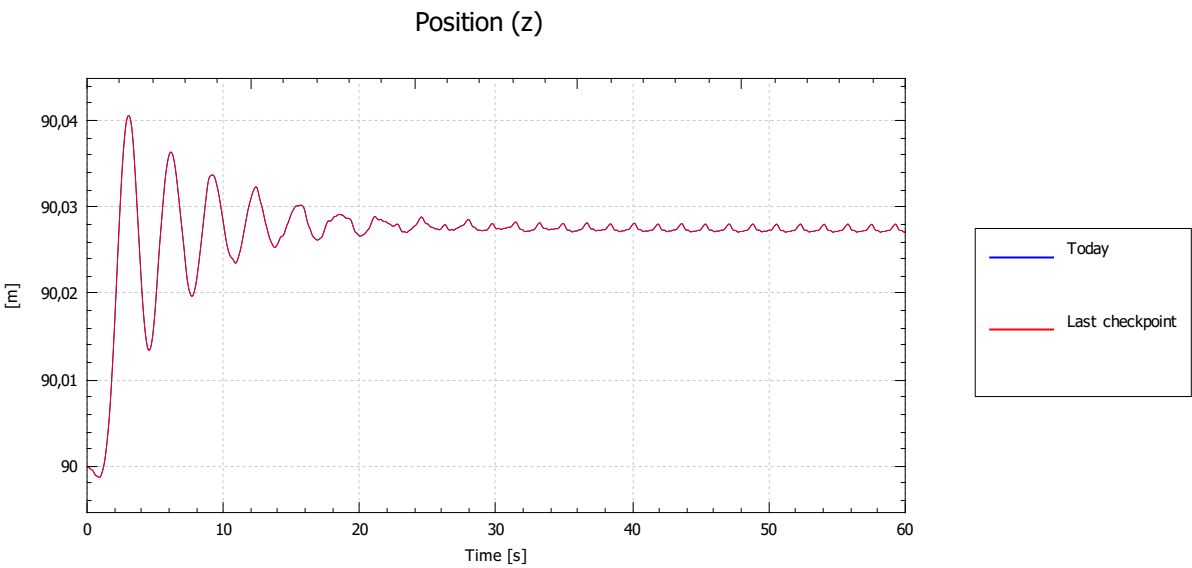
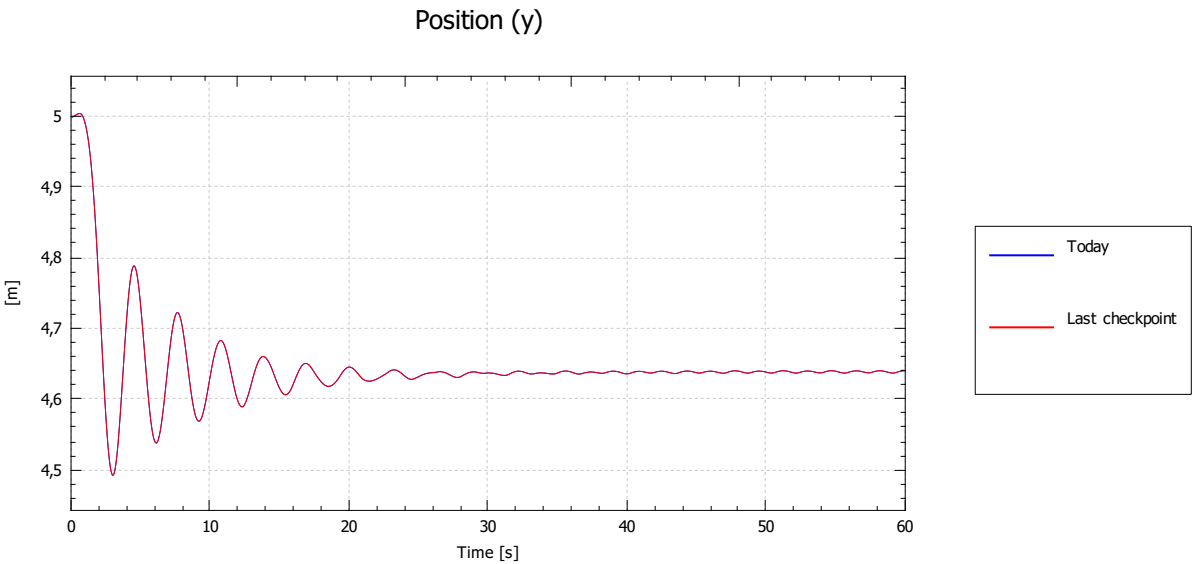
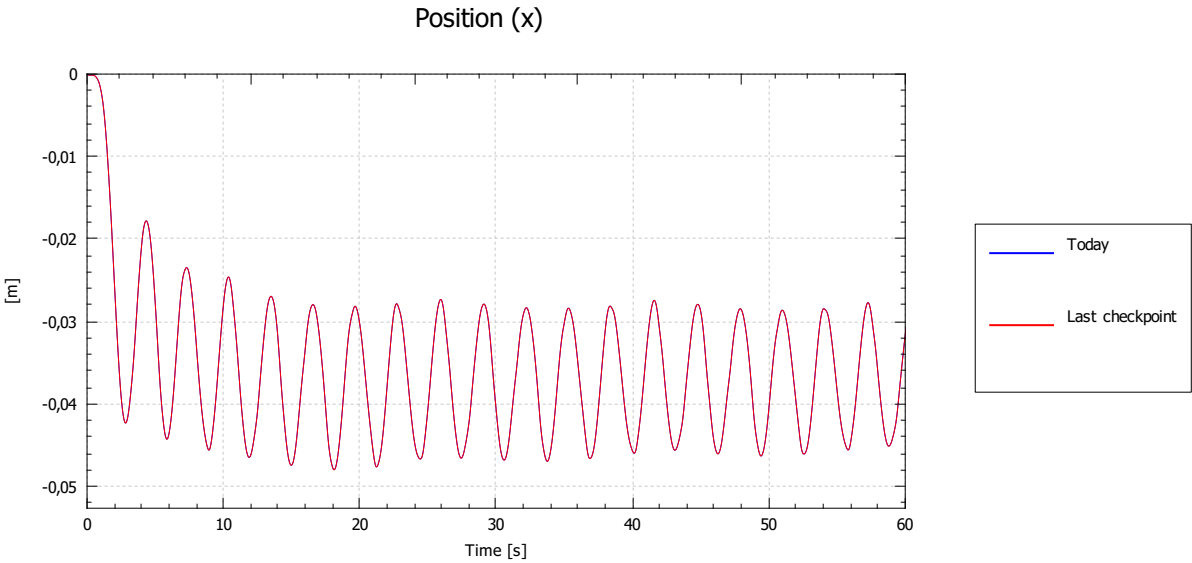


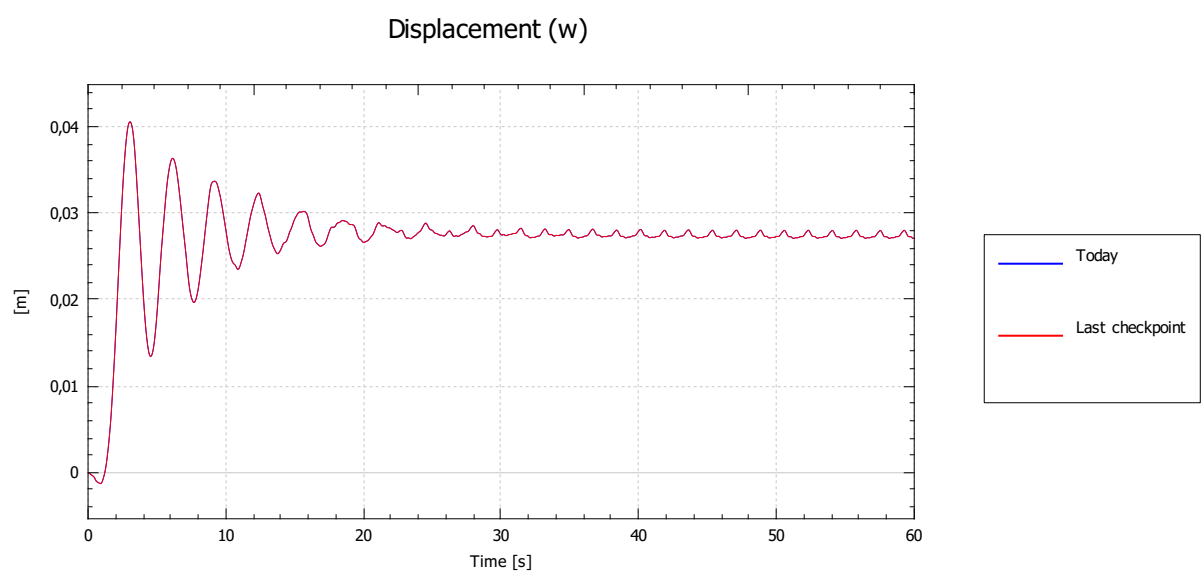
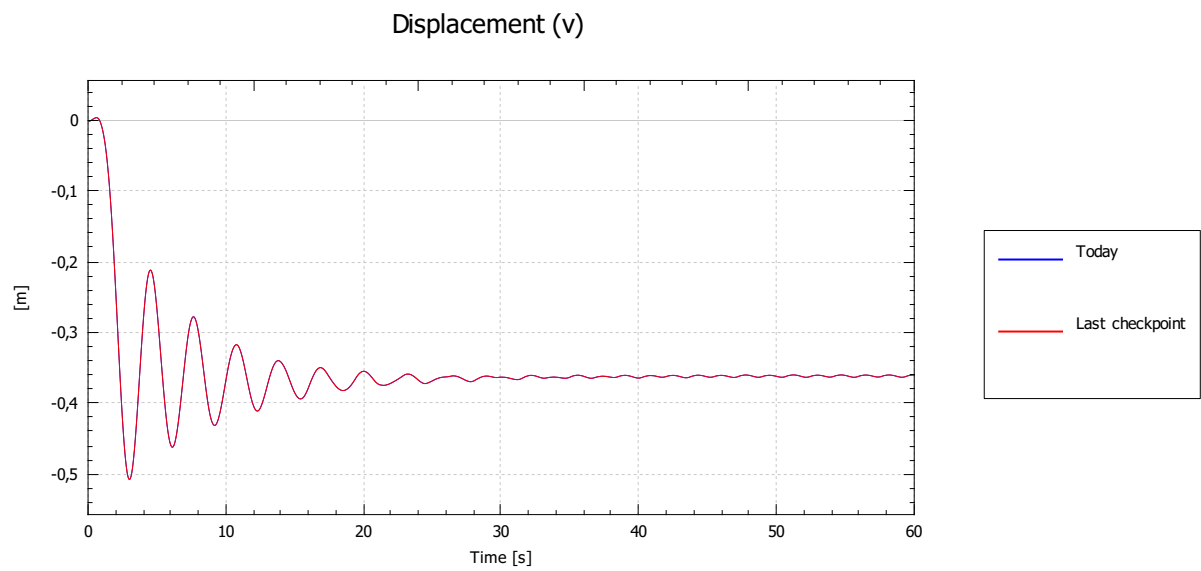
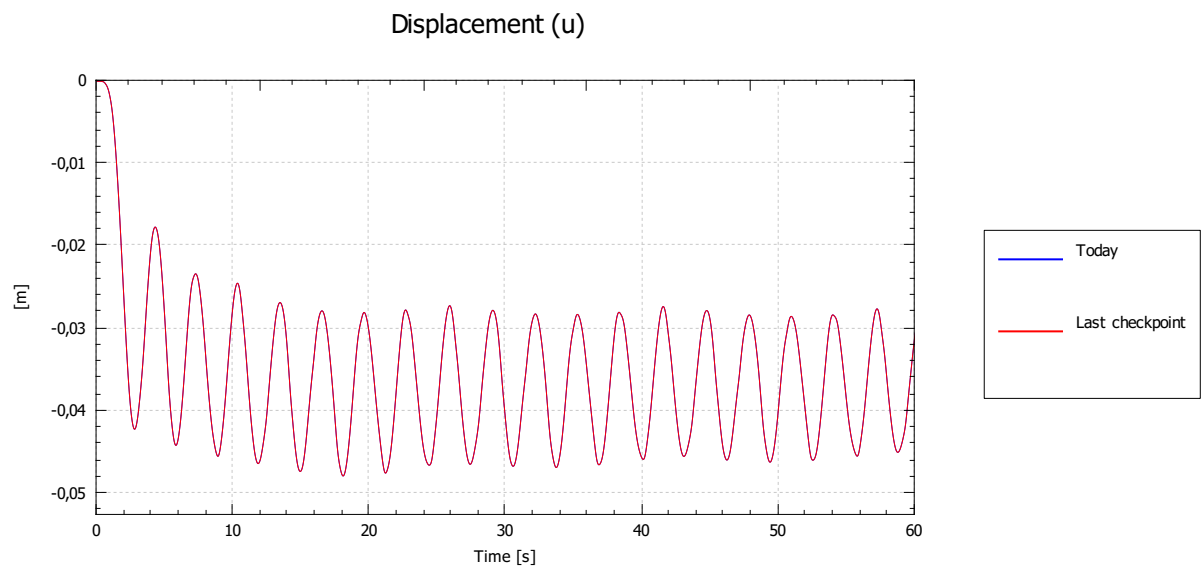
Tip deflection (in-plane)



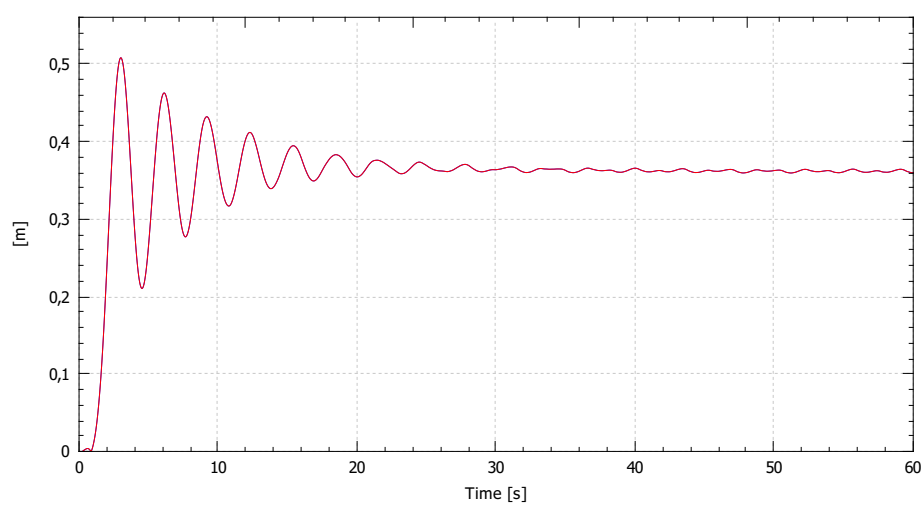
Root torque



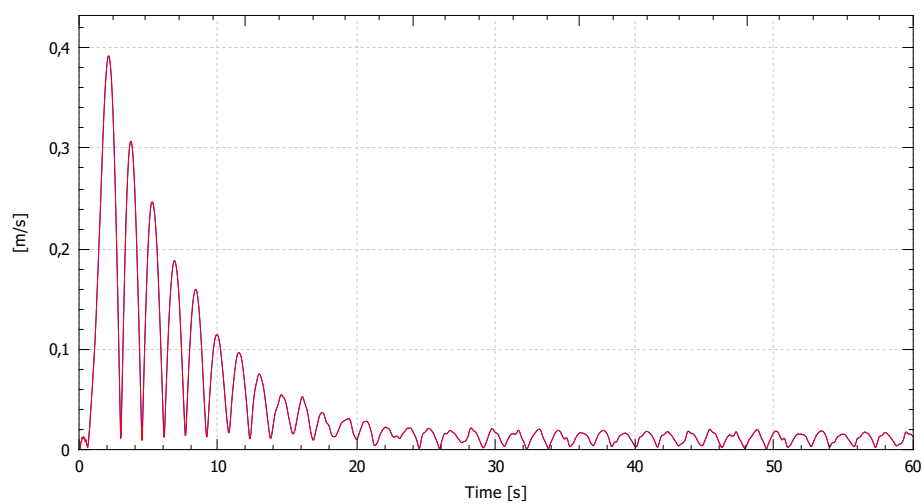




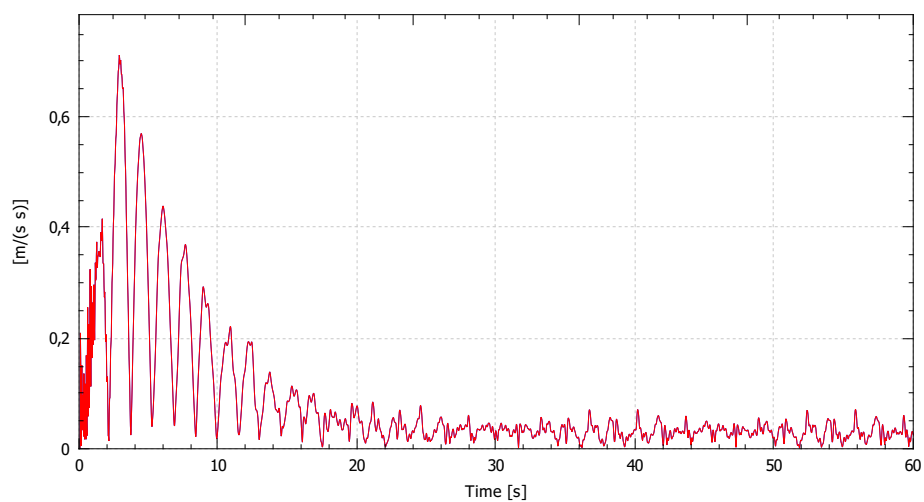
Displacement magnitude



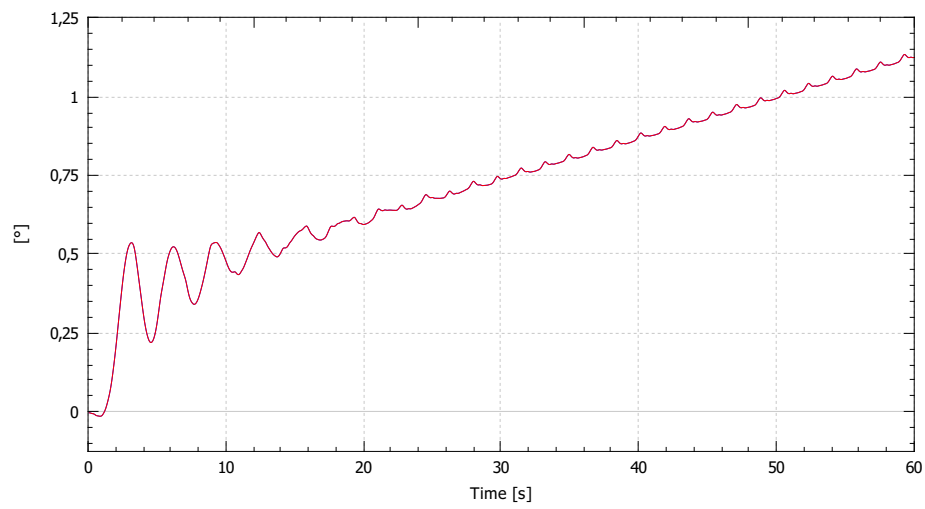
Speed



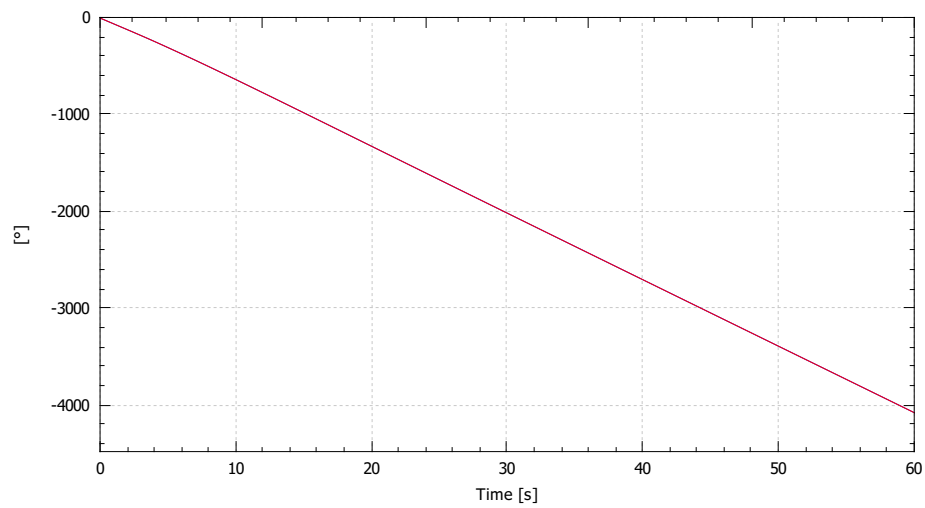
Acceleration, magnitude



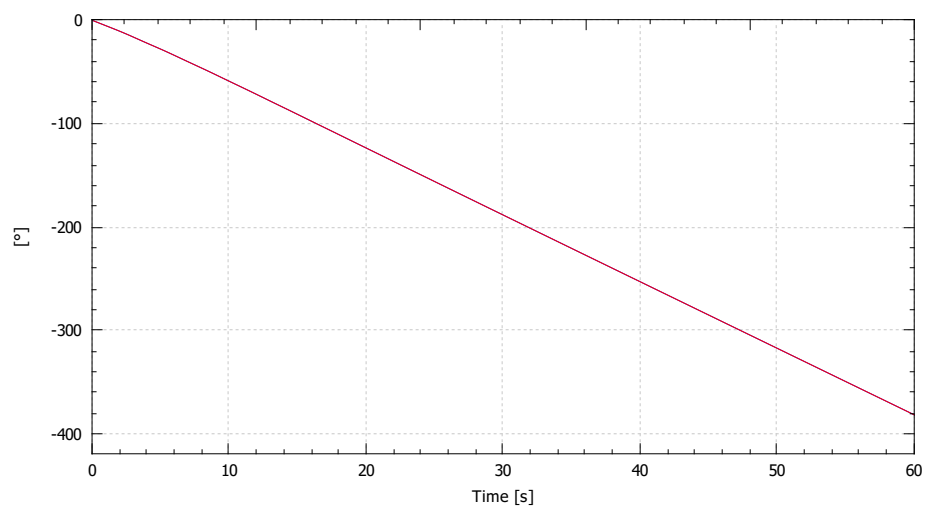
Rotational displacement (ru)



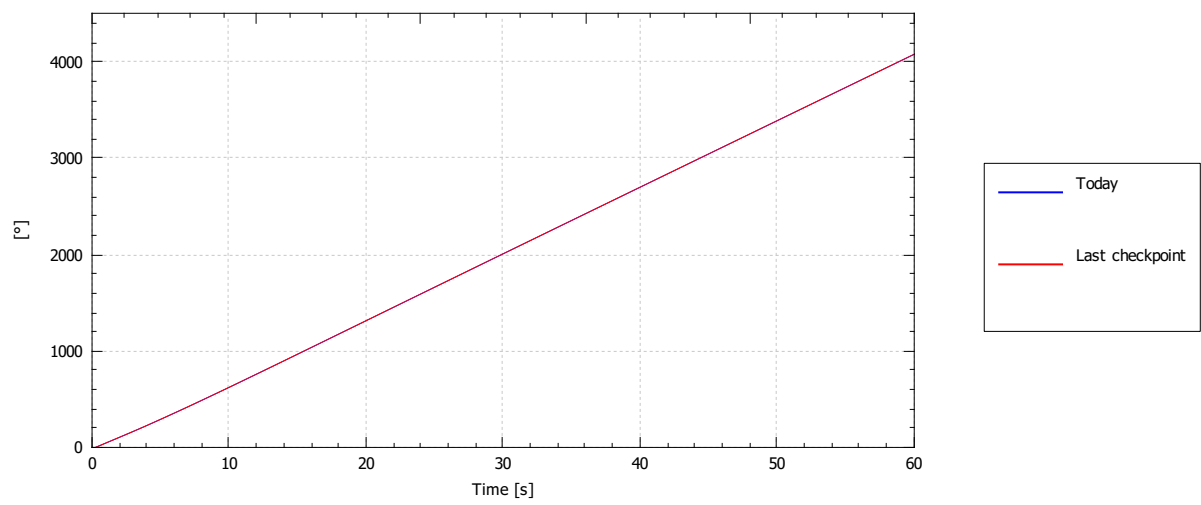
Rotational displacement (rv)



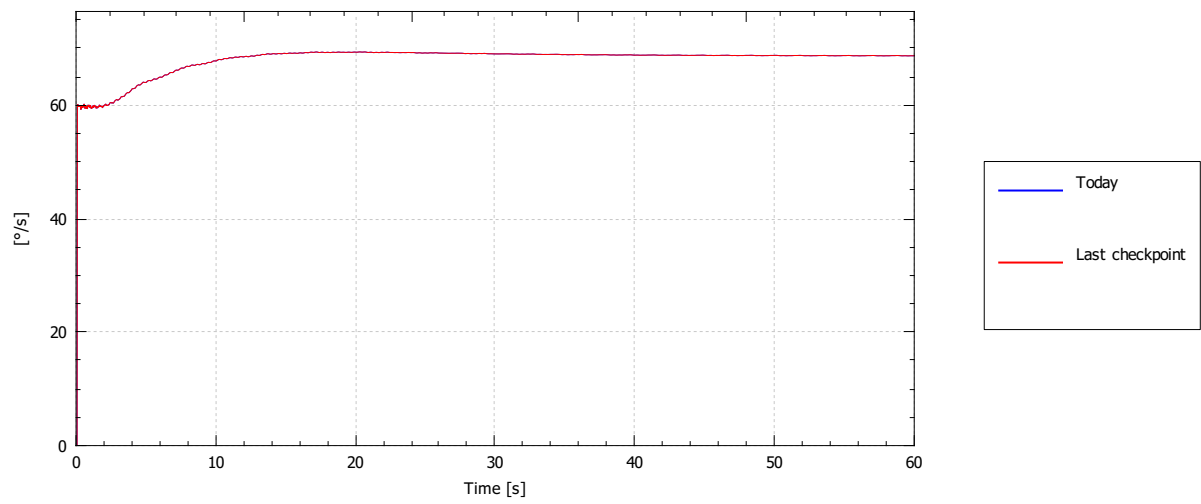
Rotational displacement (rw)



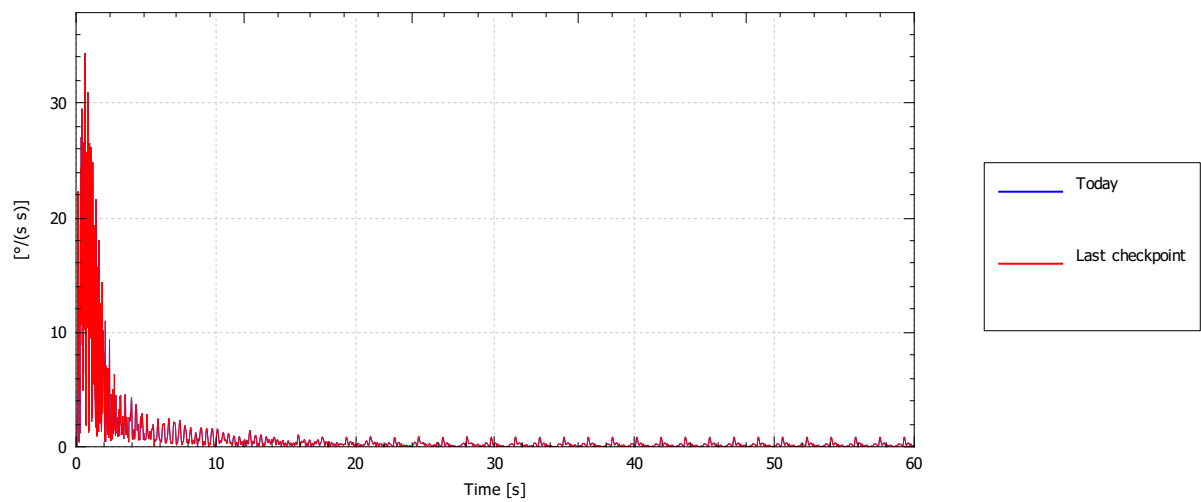
Rotational displacement magnitude



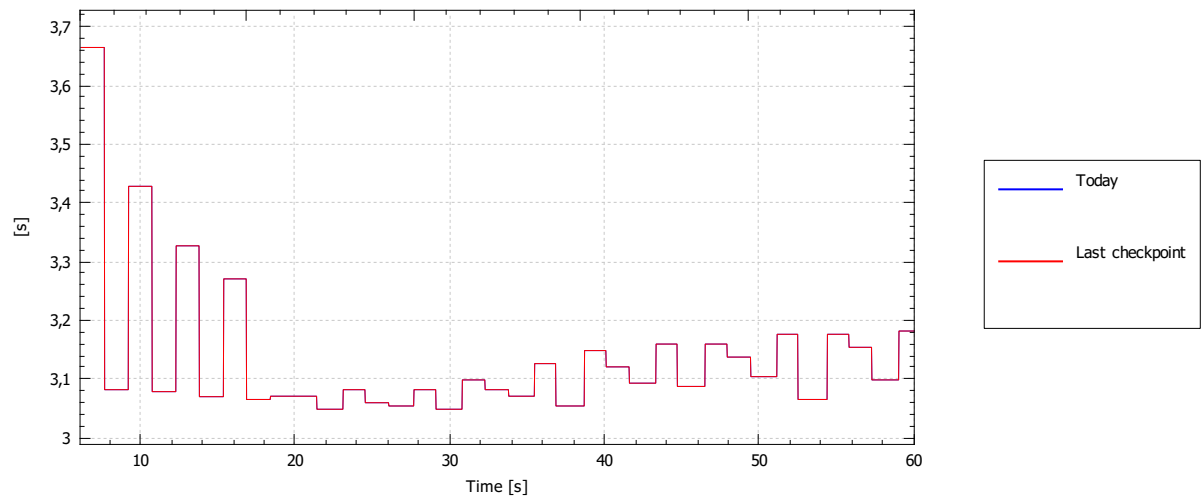
Rotational speed



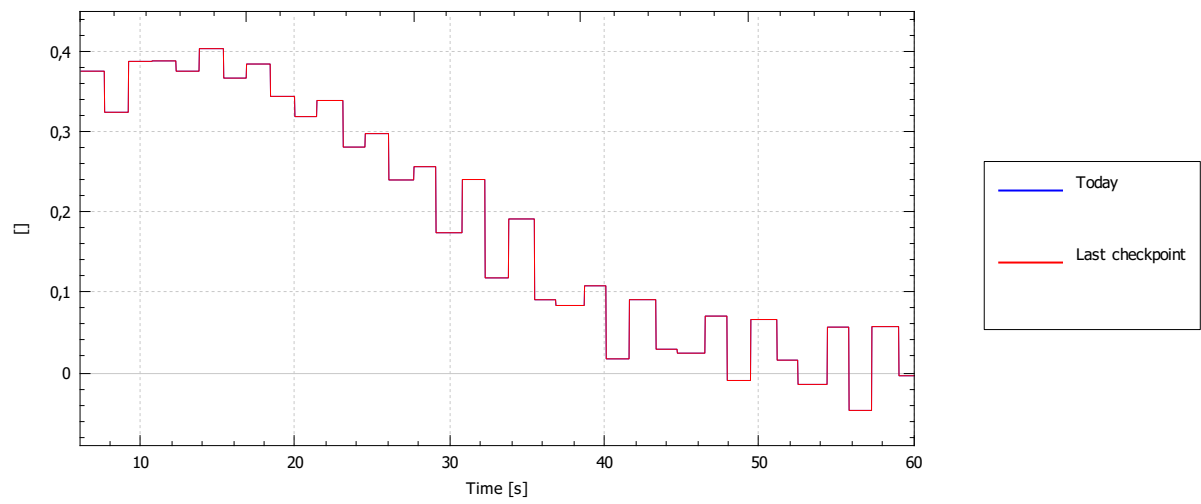
Rotational acceleration mag



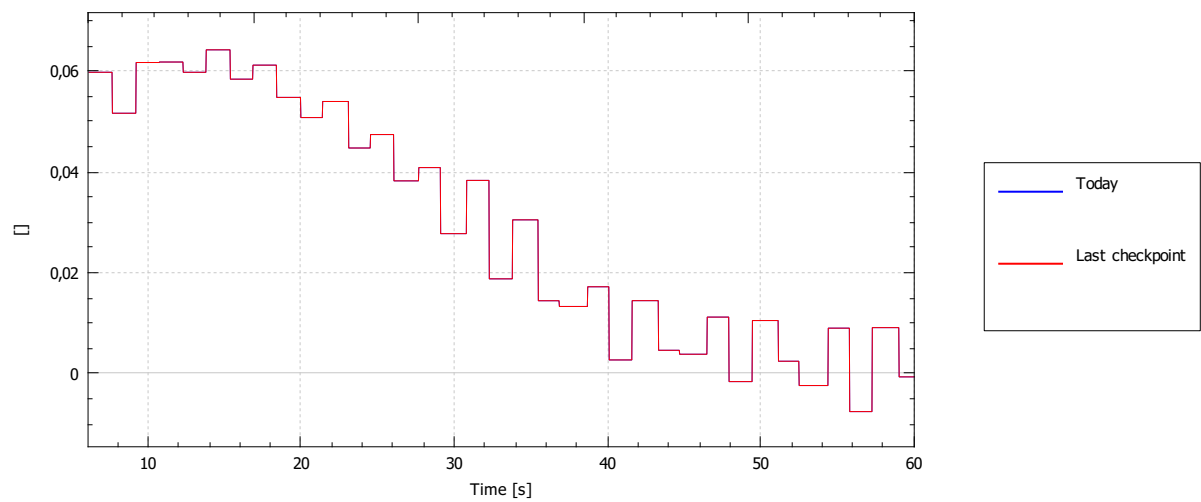
Displacement period



Displacement logarithmic decrement

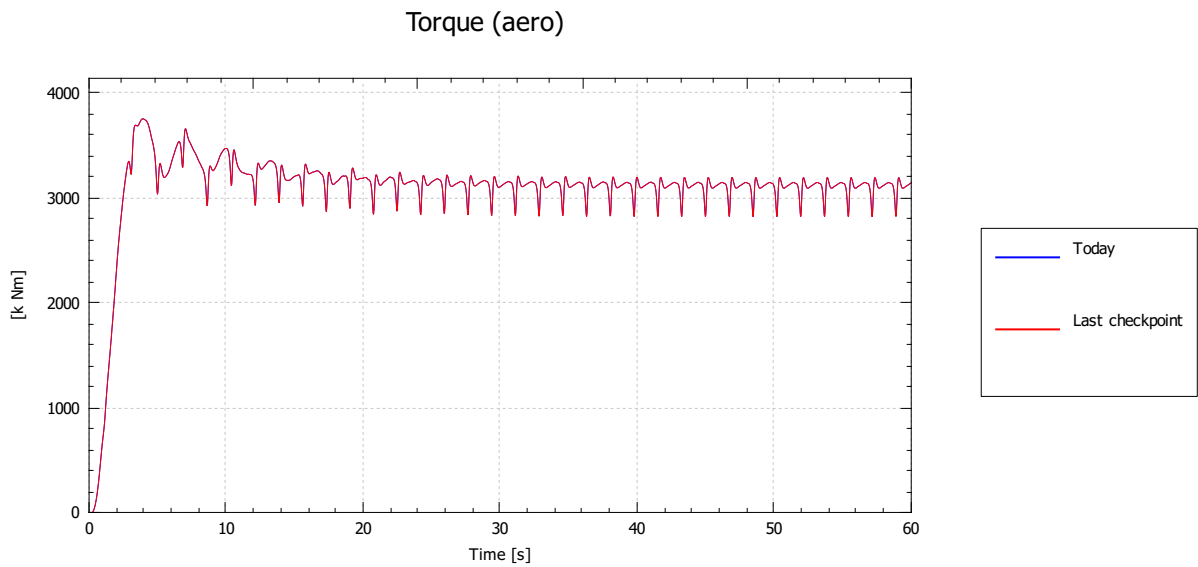
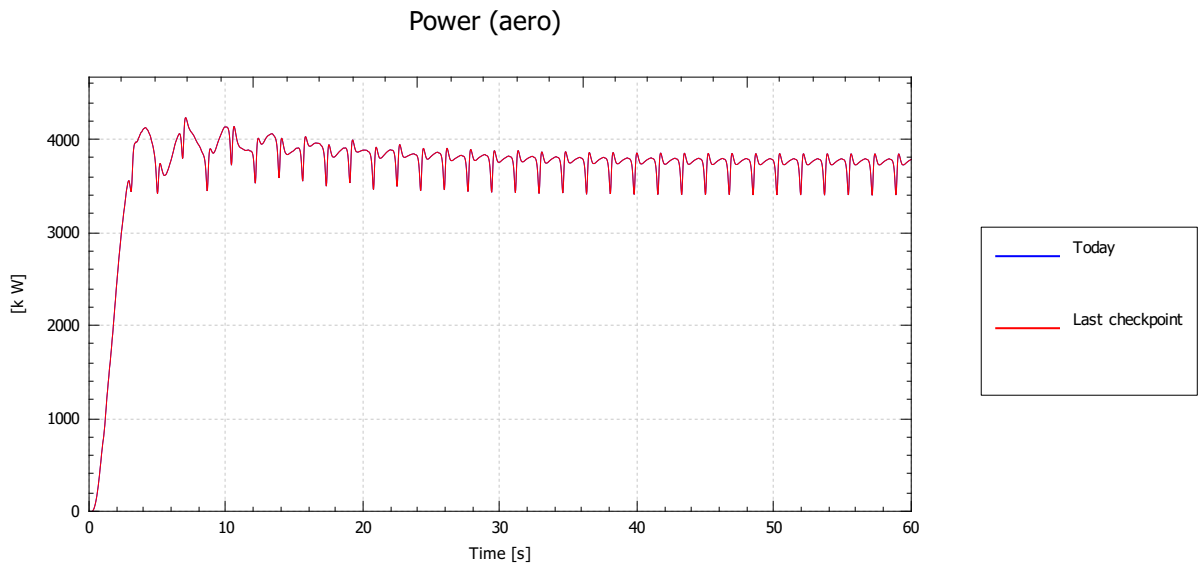


Displacement damping ratio

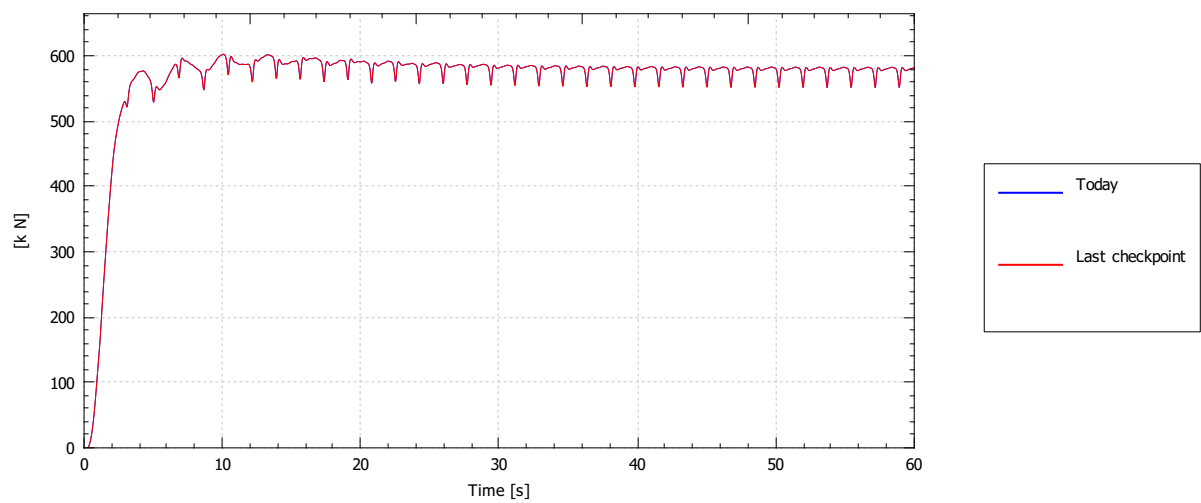


Load case: Structural scale factor

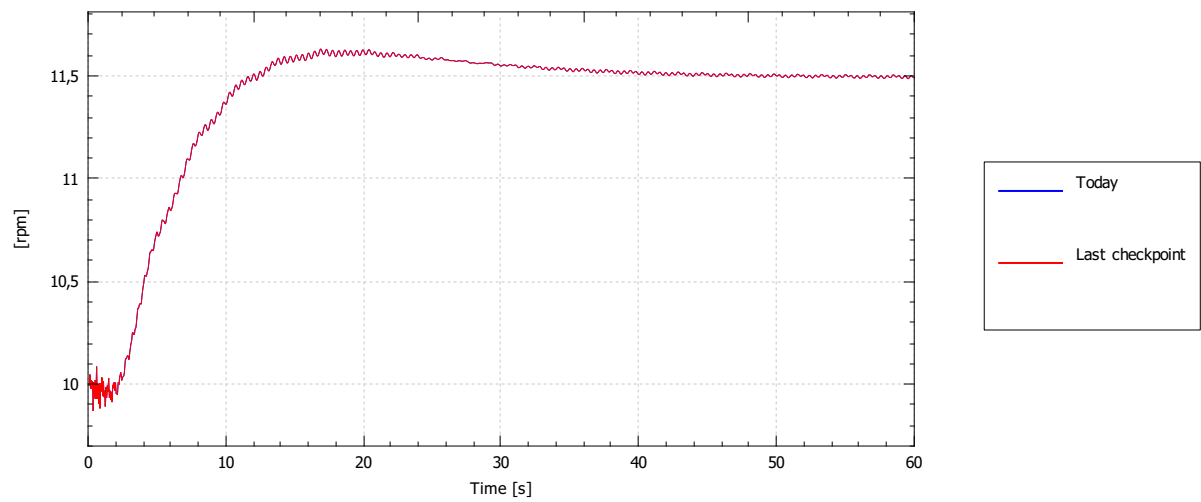
Rotor



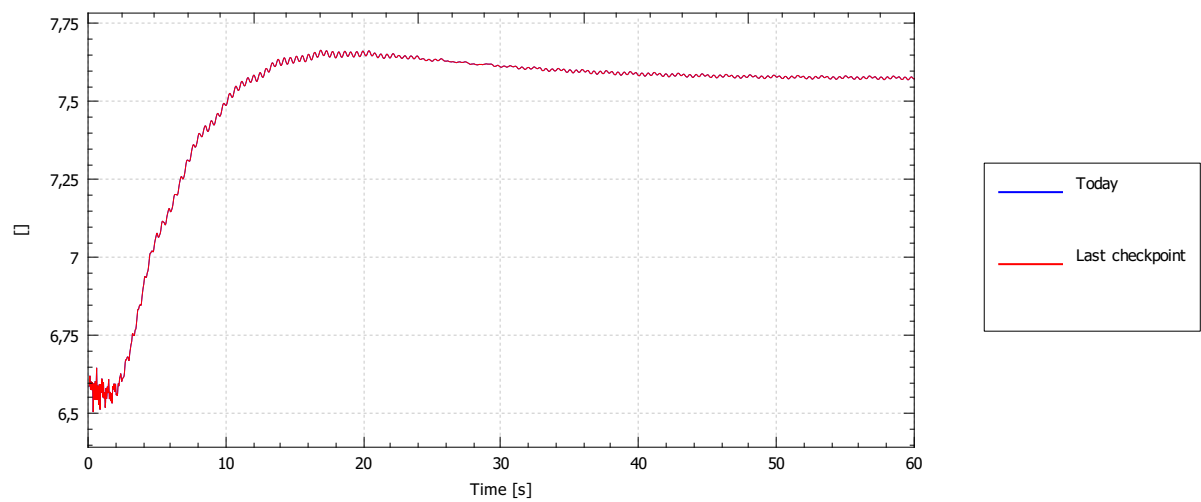
Thrust (aero)



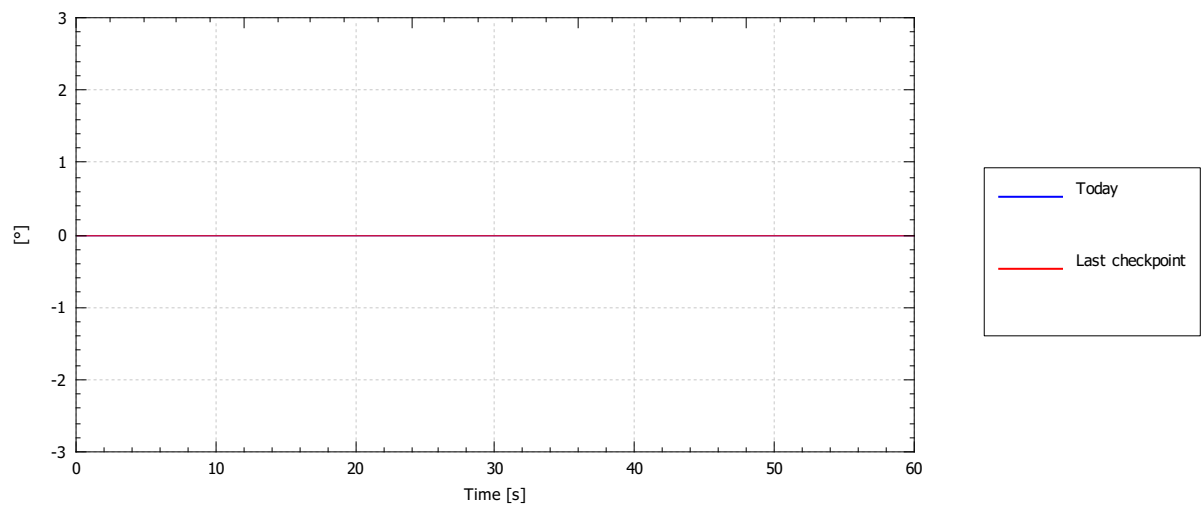
RPM



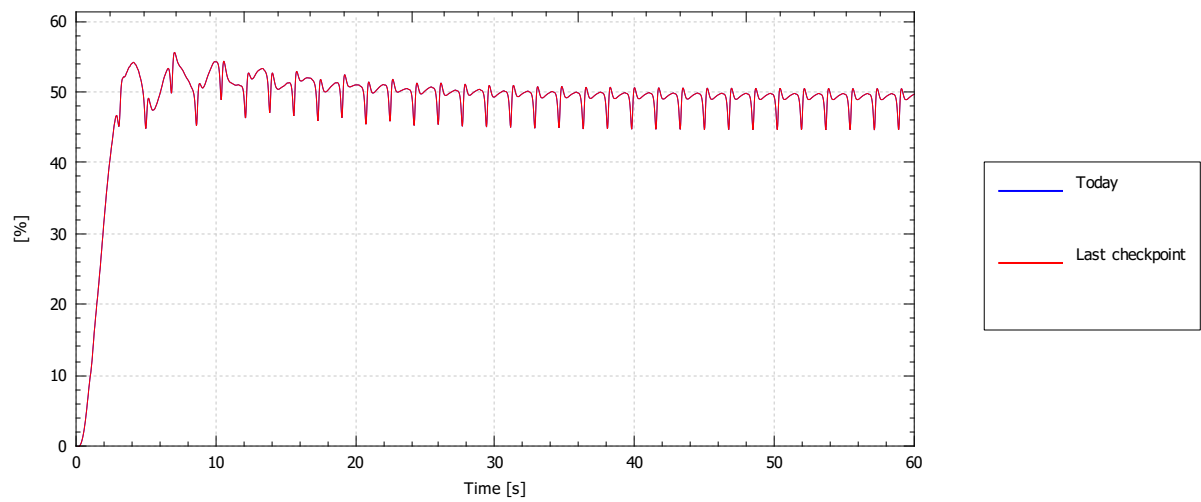
TSR



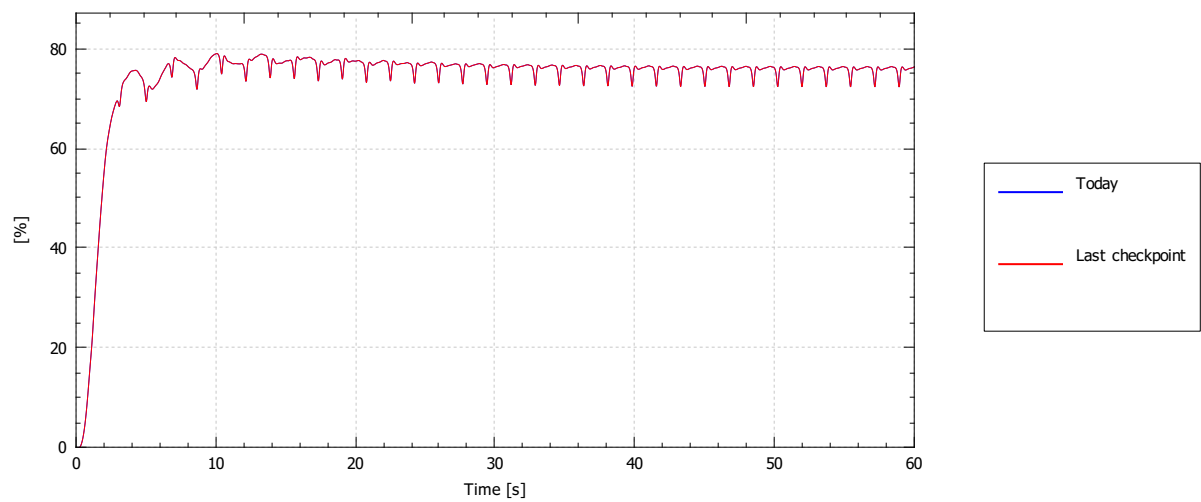
Representative demanded pitch angle



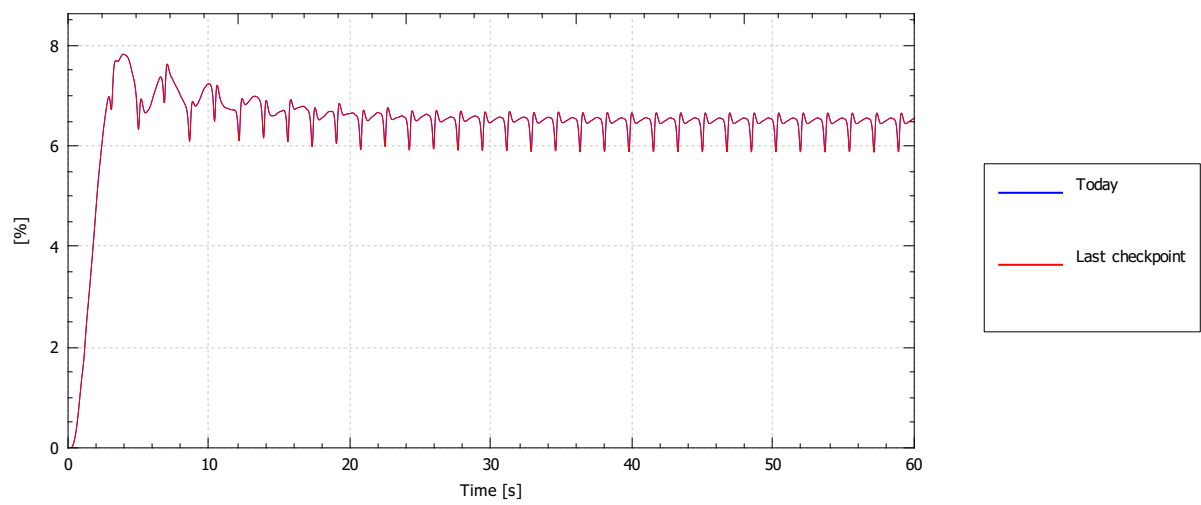
Power coef. (CP)



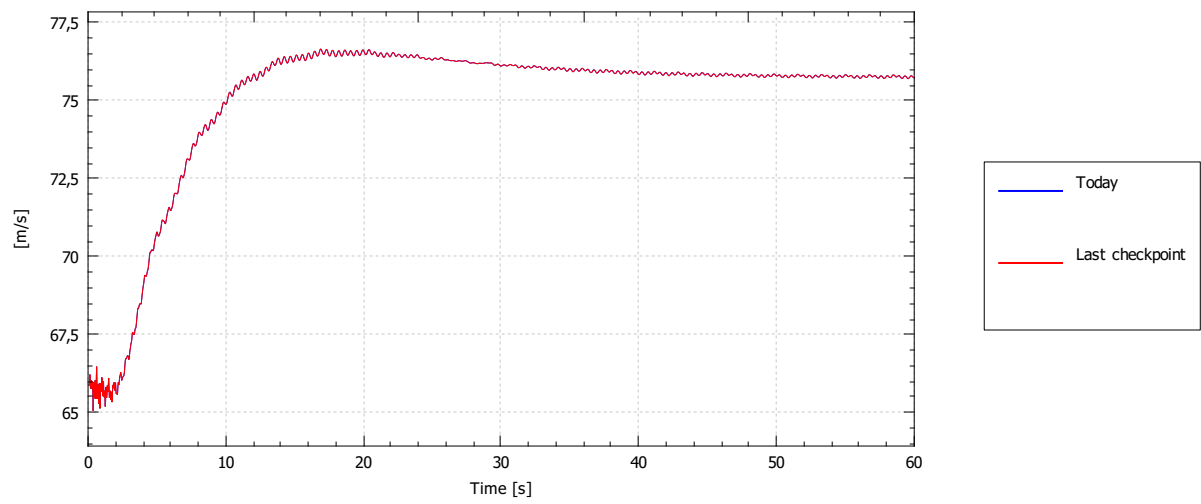
Thrust coef. (CT)



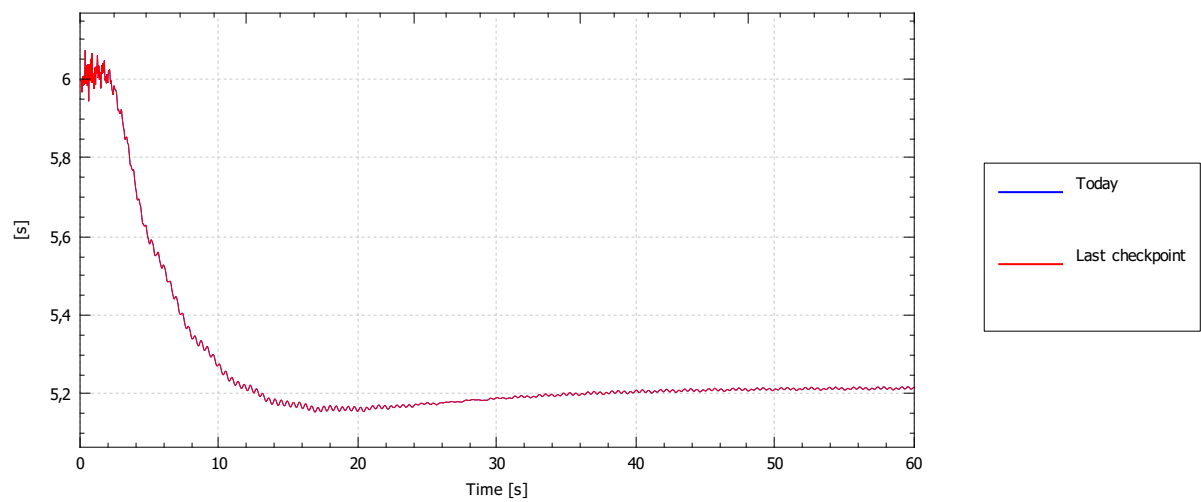
Torque coef. (CQ)



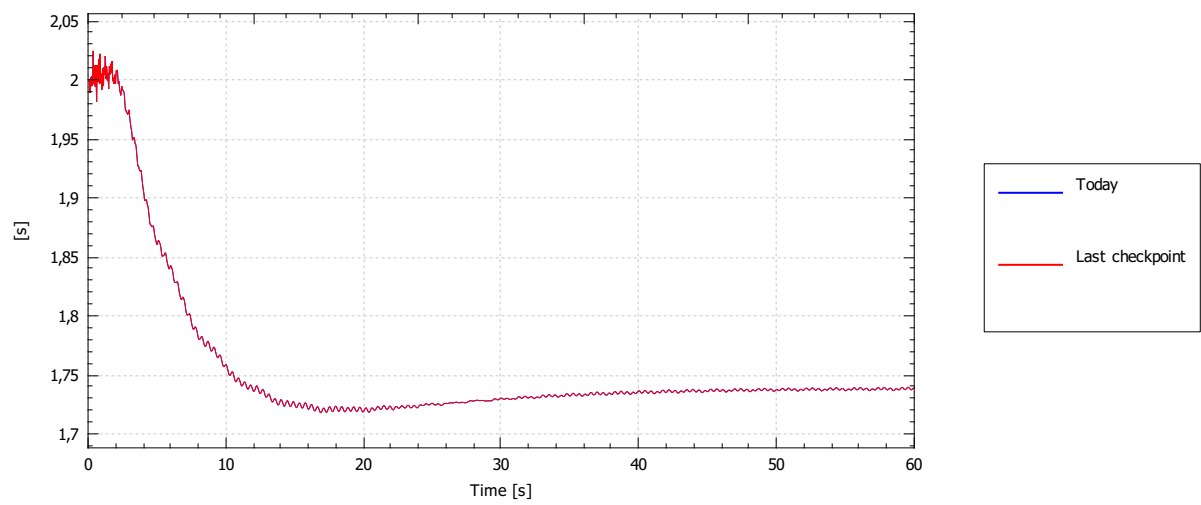
Tip speed



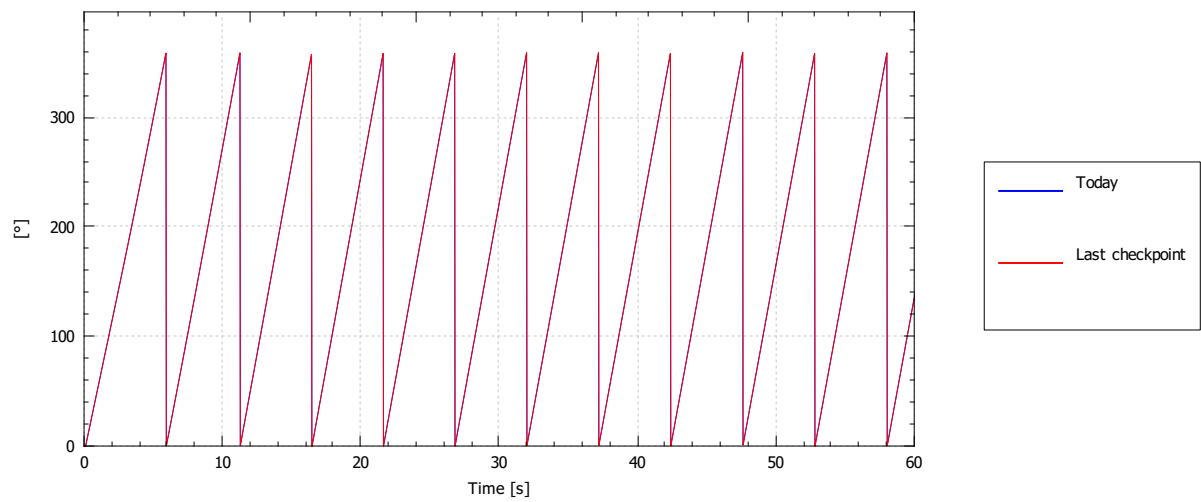
1P (one revolution)



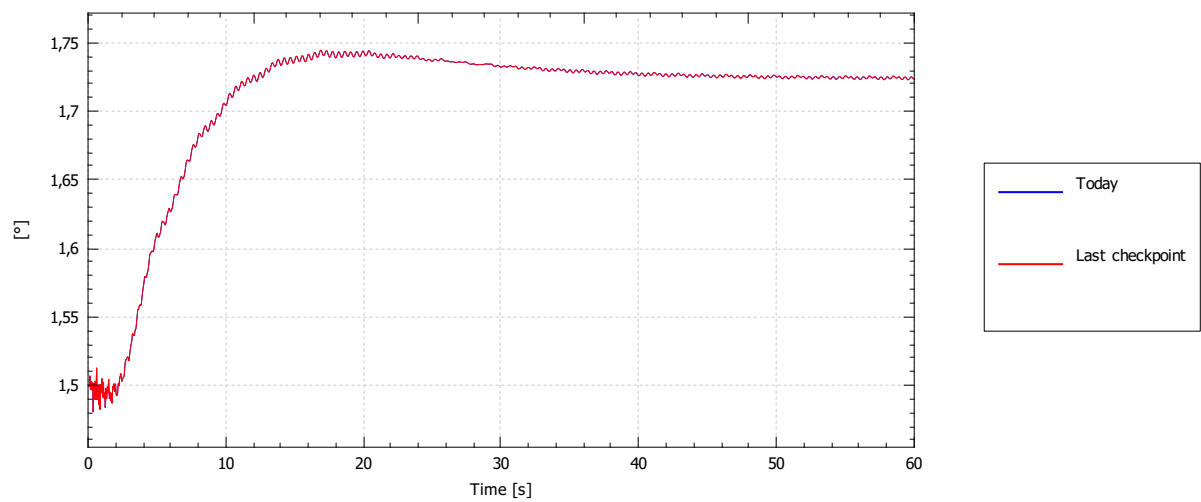
nP (blade passing)



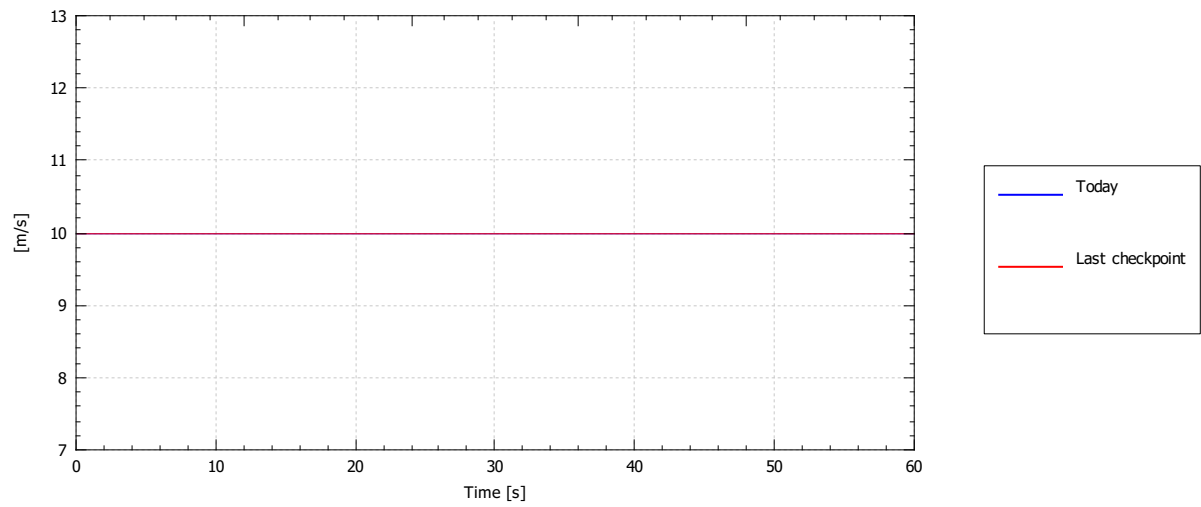
Azimuth angle



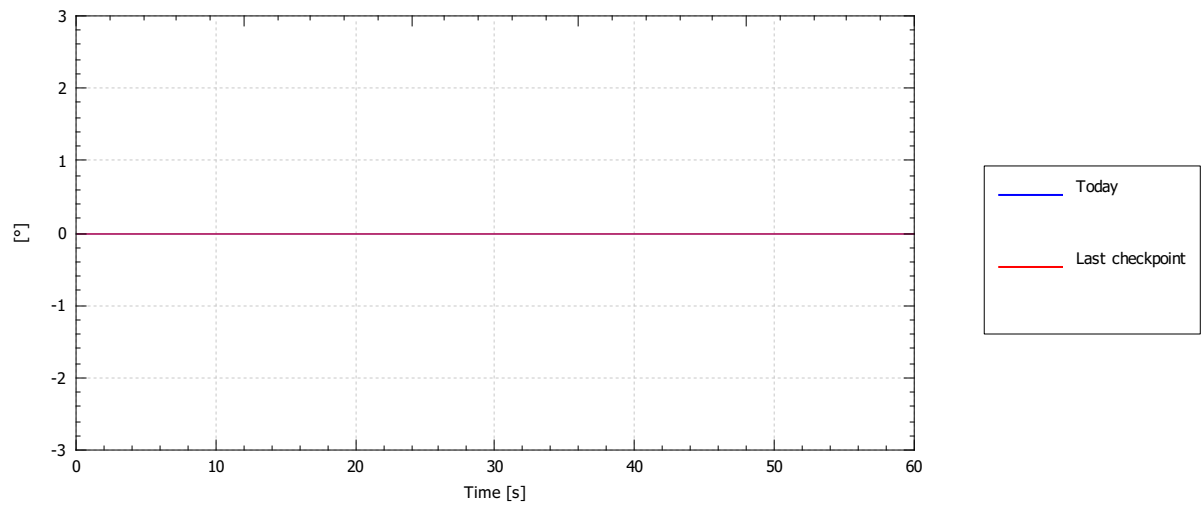
Rotation per timestep



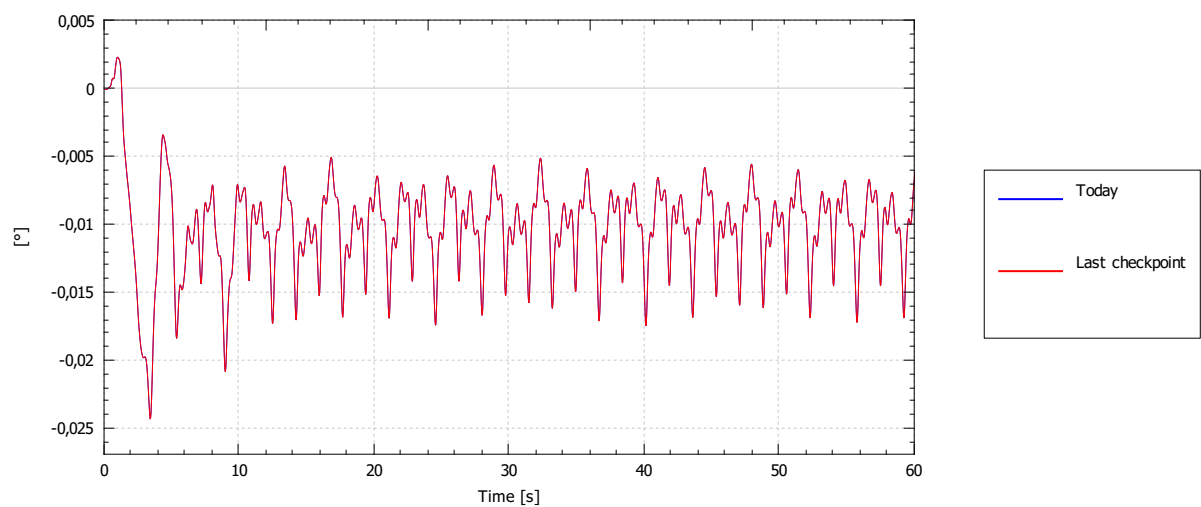
Wind speed at hub, magnitude



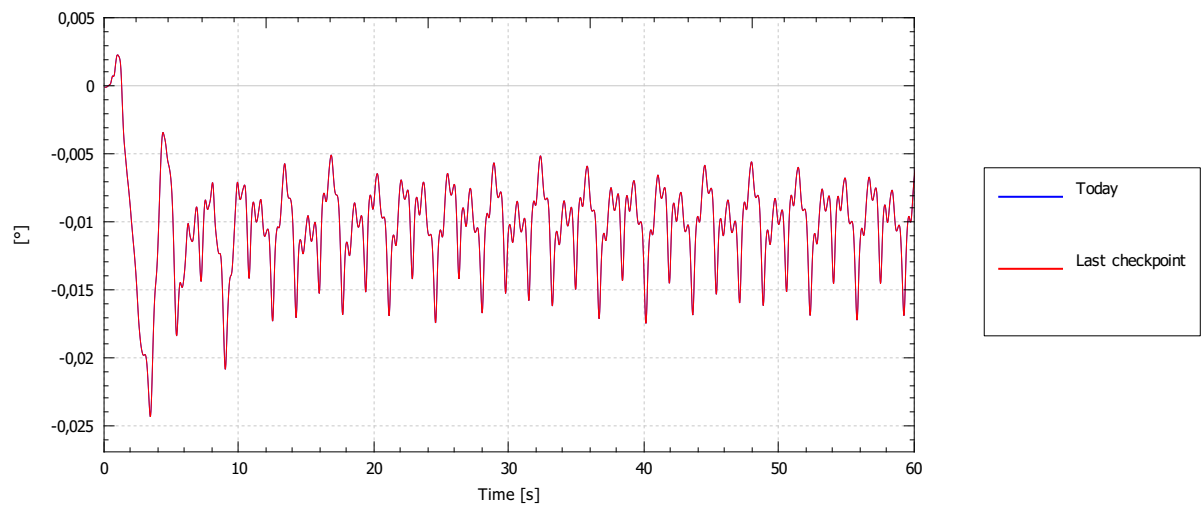
Wind angle at hub



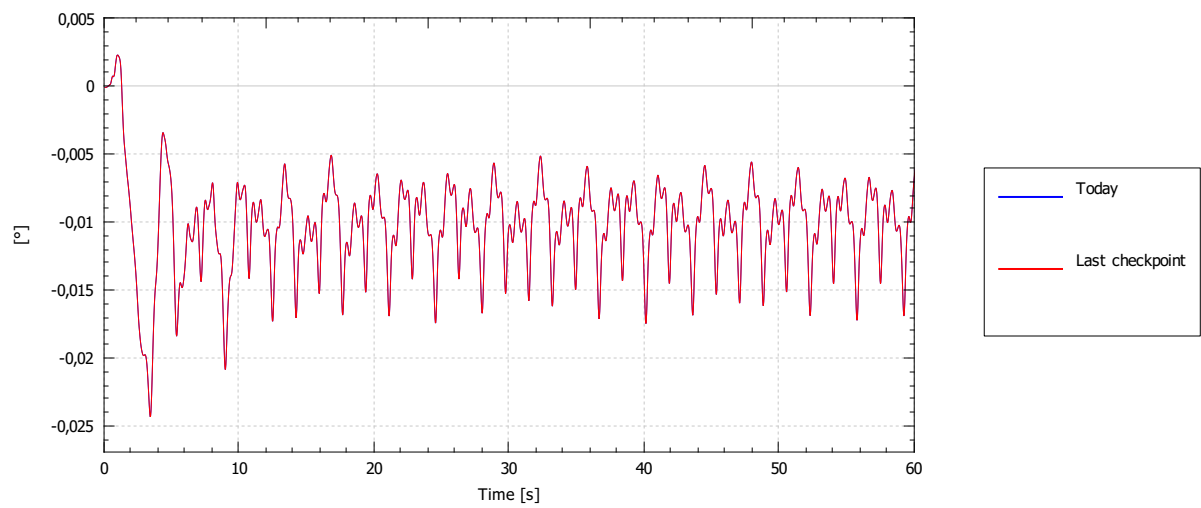
Yaw angle relative to forward



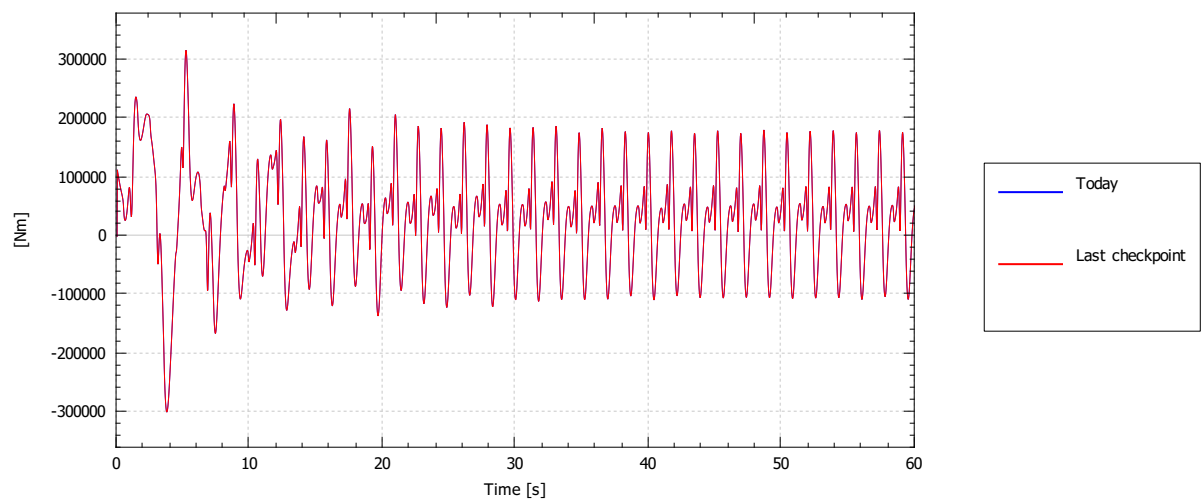
Yaw angle to reference direction



Yaw error

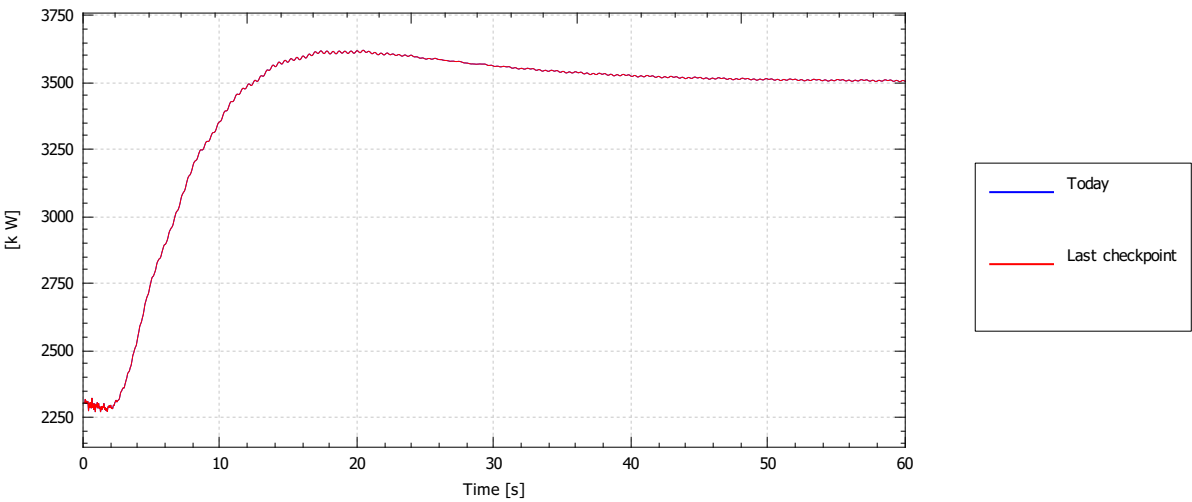


Torque about yaw axis

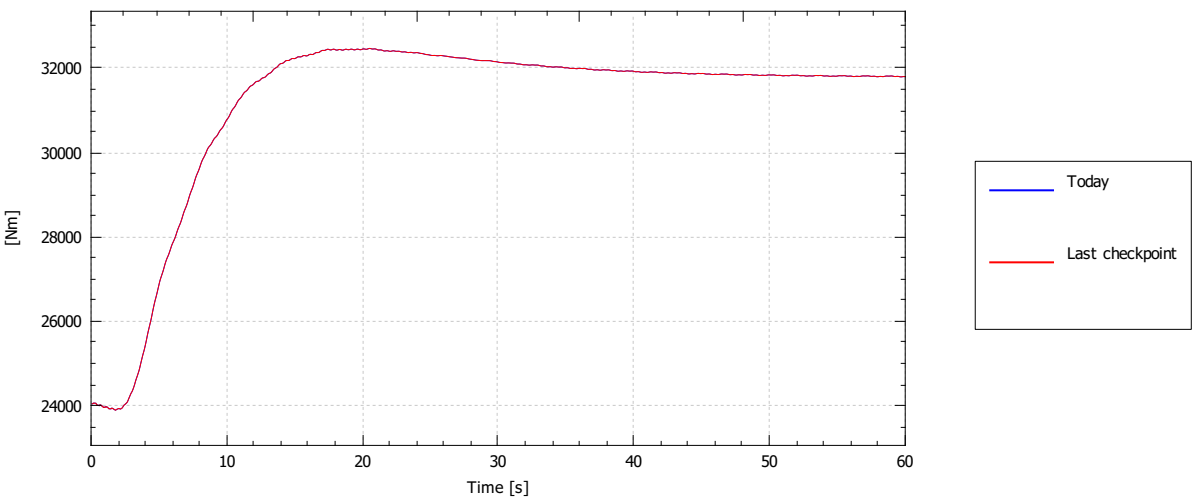


Generator

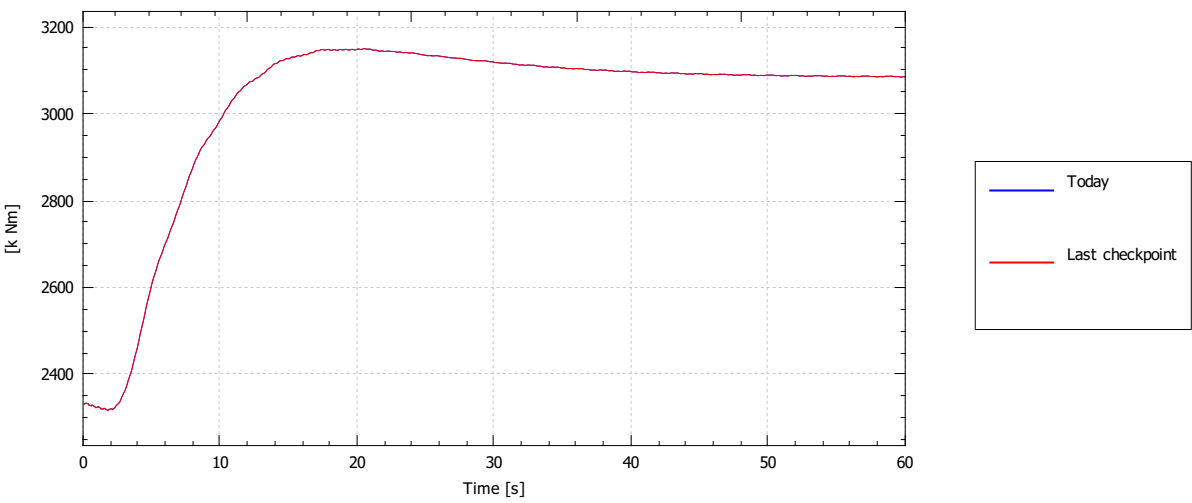
Power (electrical)



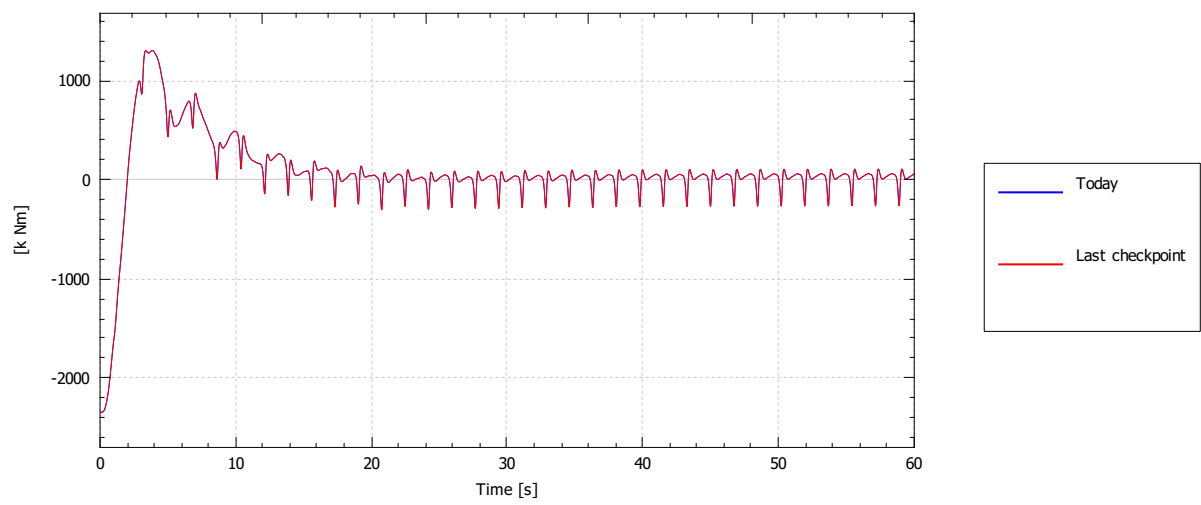
Torque



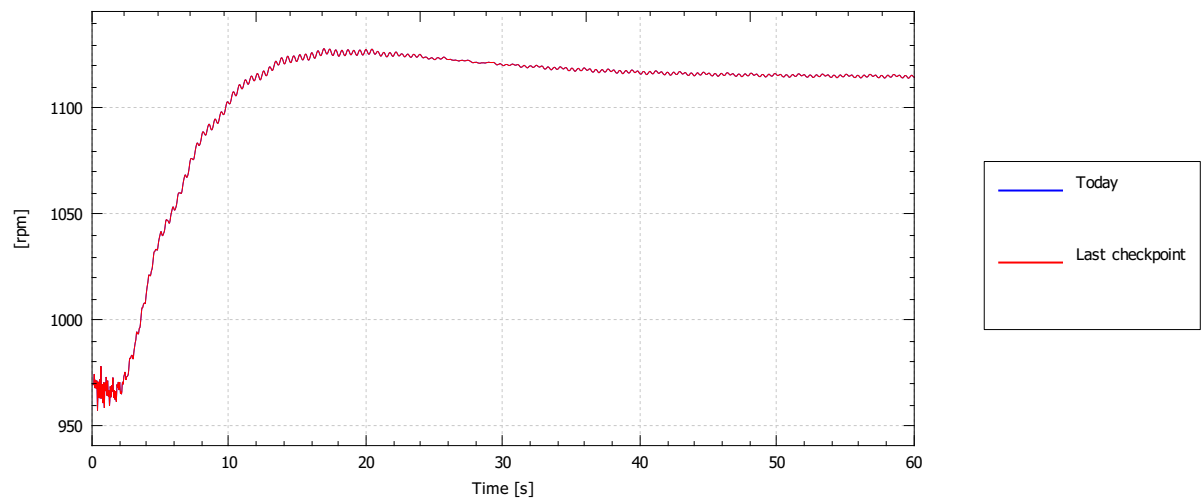
Torque on main shaft



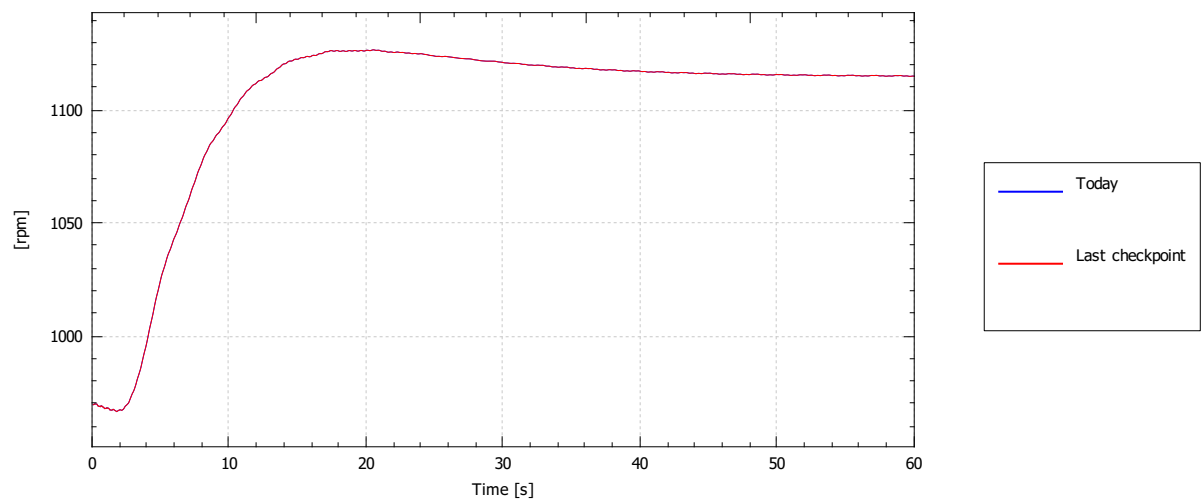
Torque diff. on main shaft



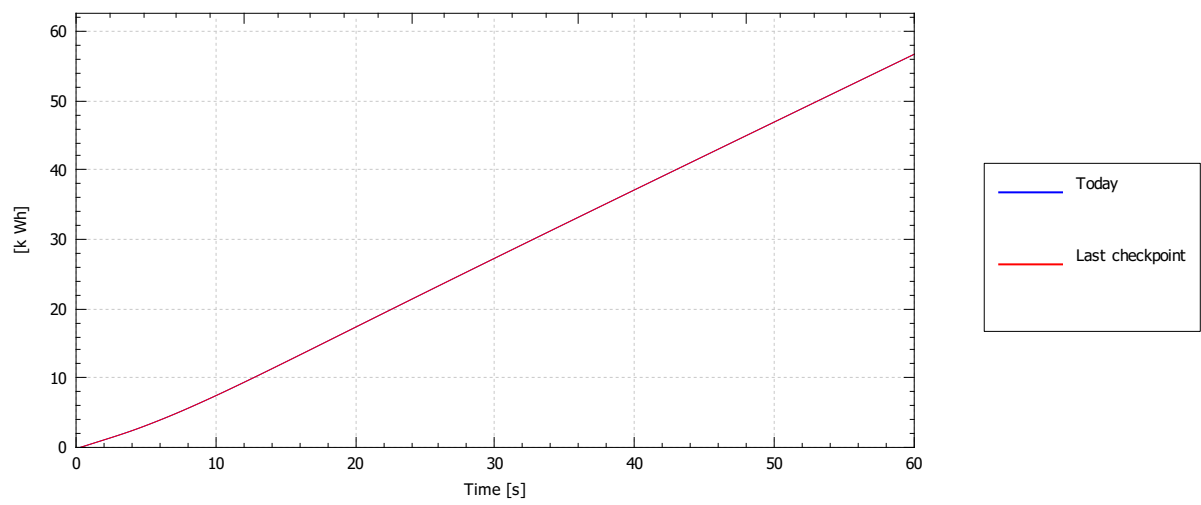
RPM



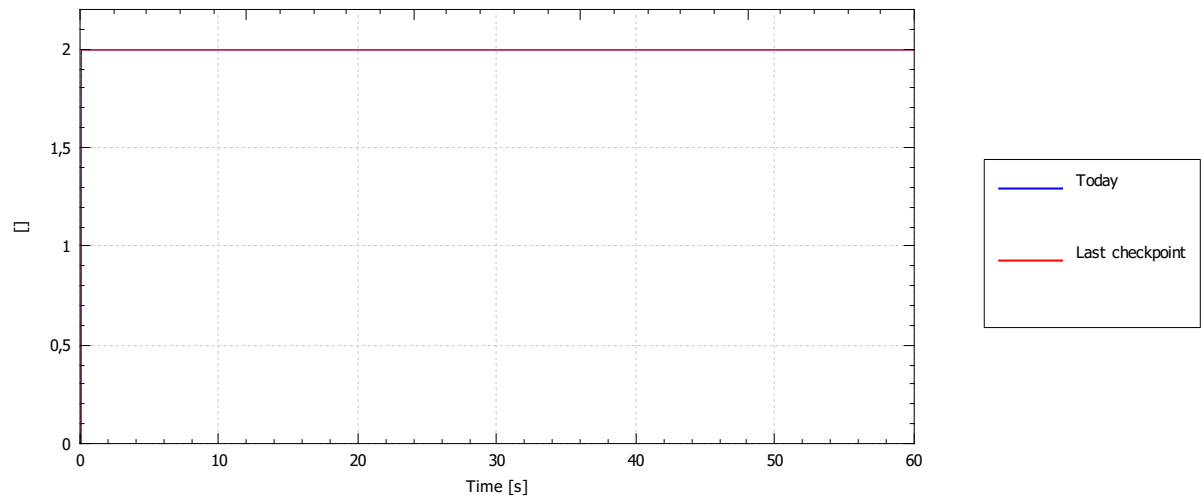
Filtered RPM



Electricity production

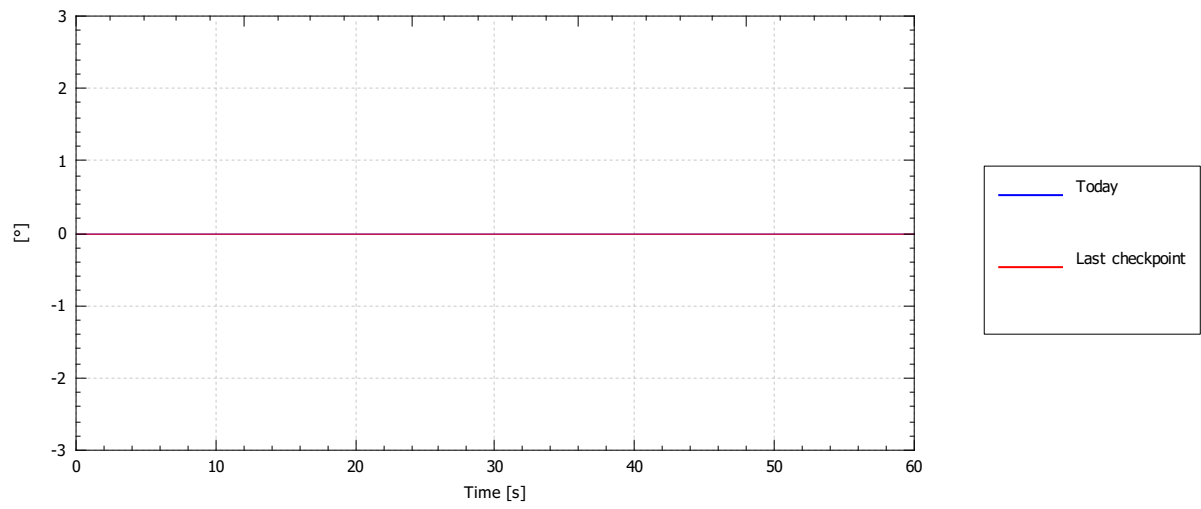


Region

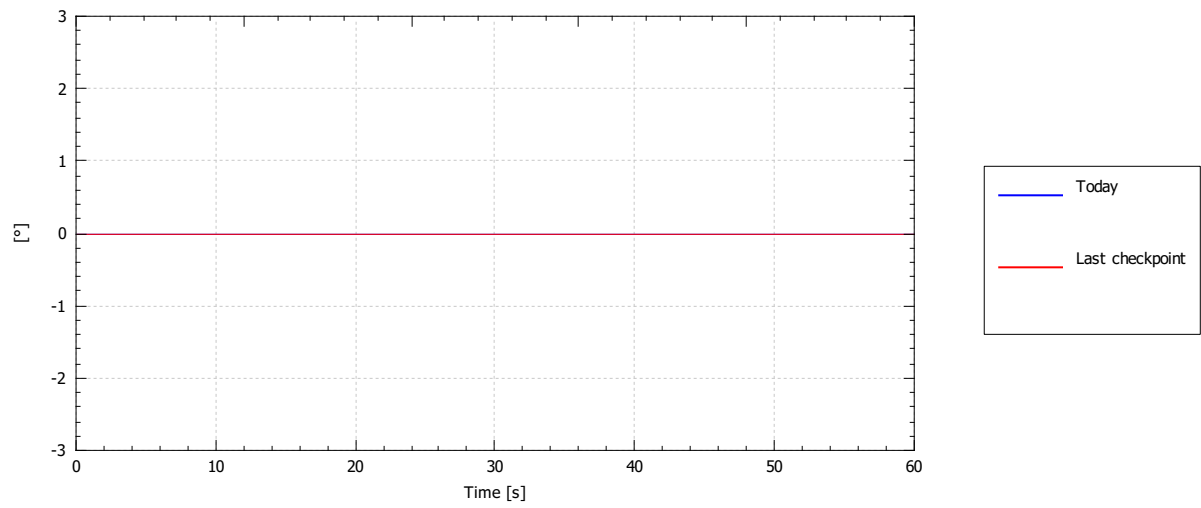


Demanded pitch controller

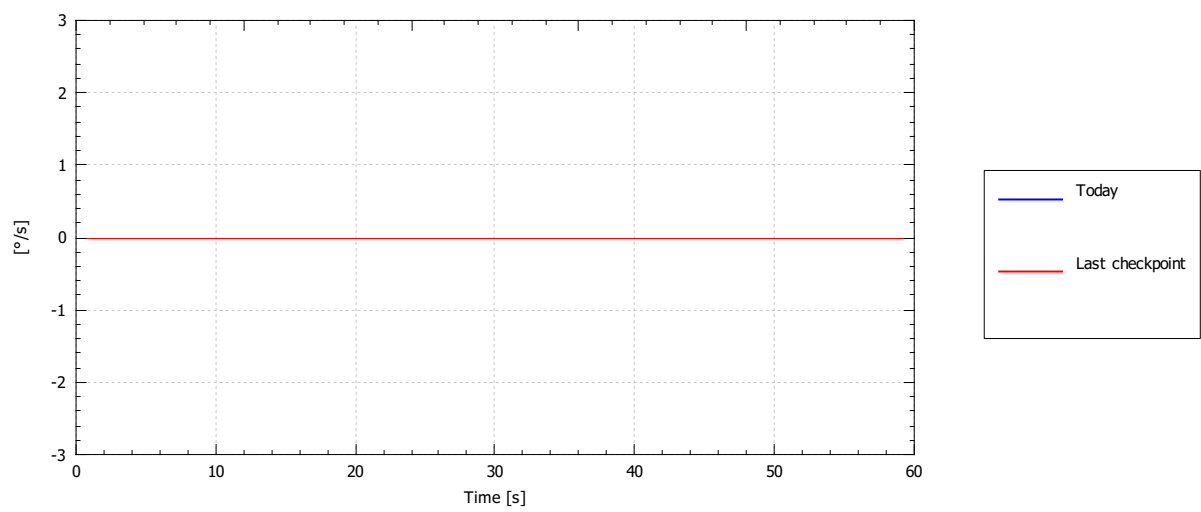
Demanded collective pitch angle



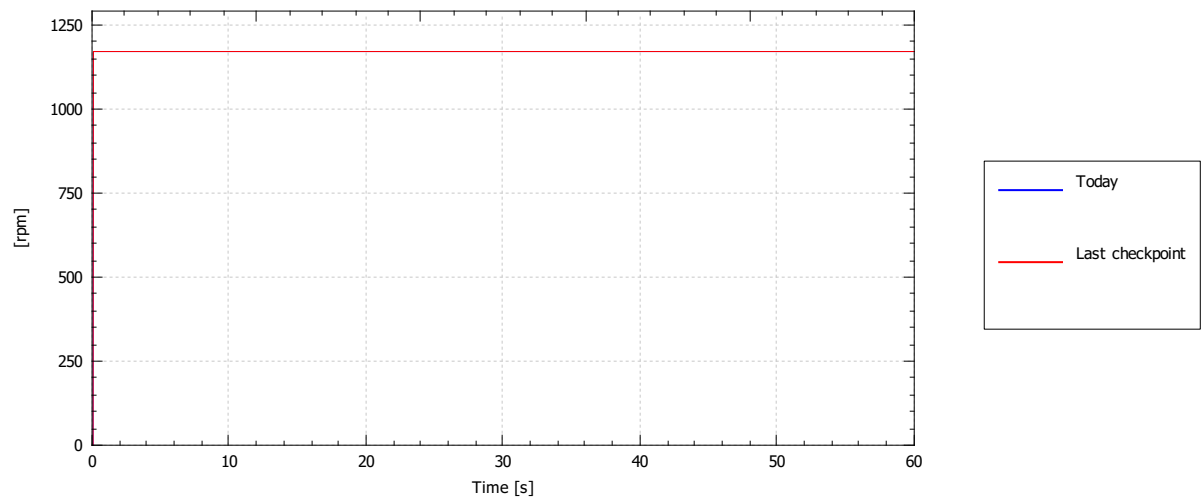
Cumulative demanded collective pitch angle



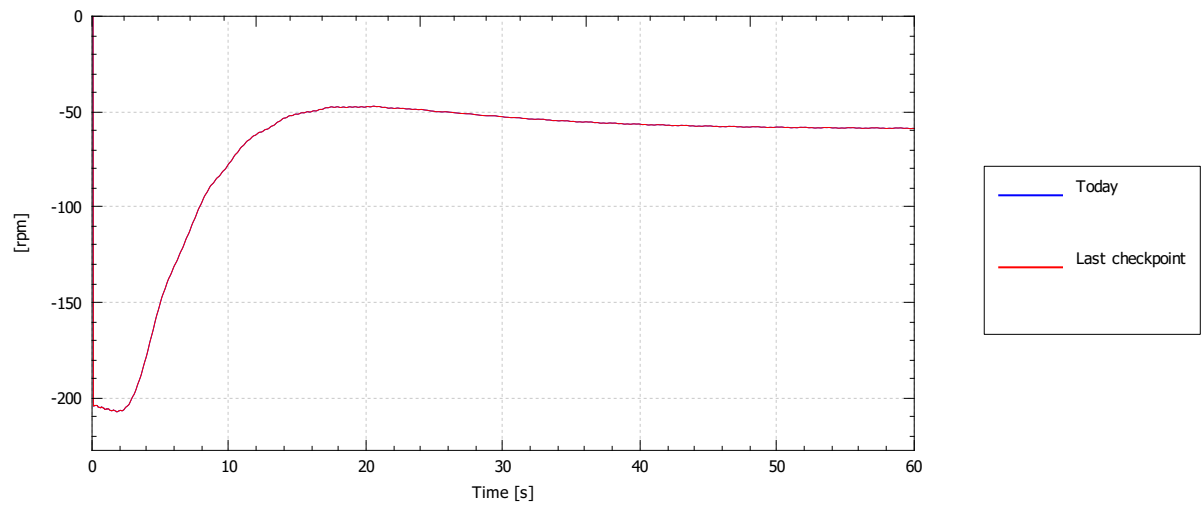
Demanded collective pitch angle rate



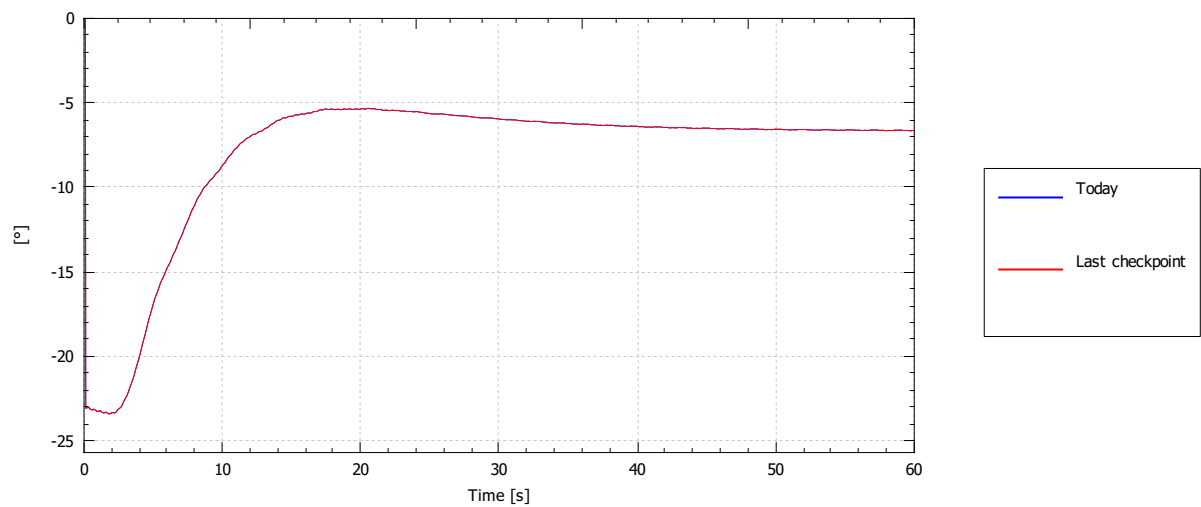
Set point



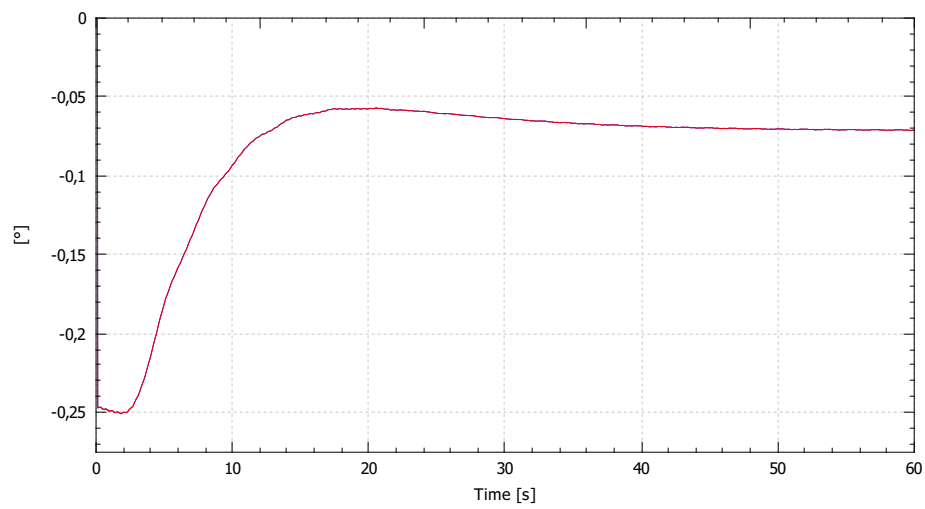
RPM error



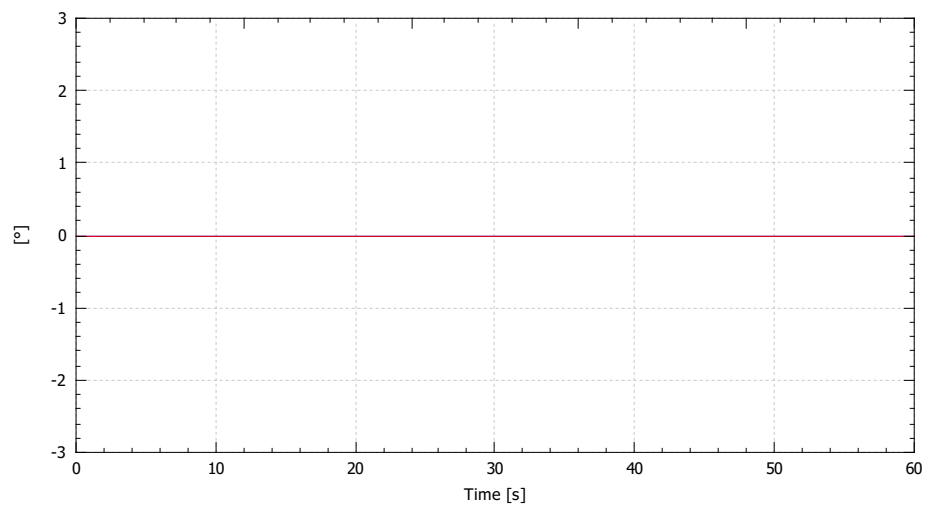
P term



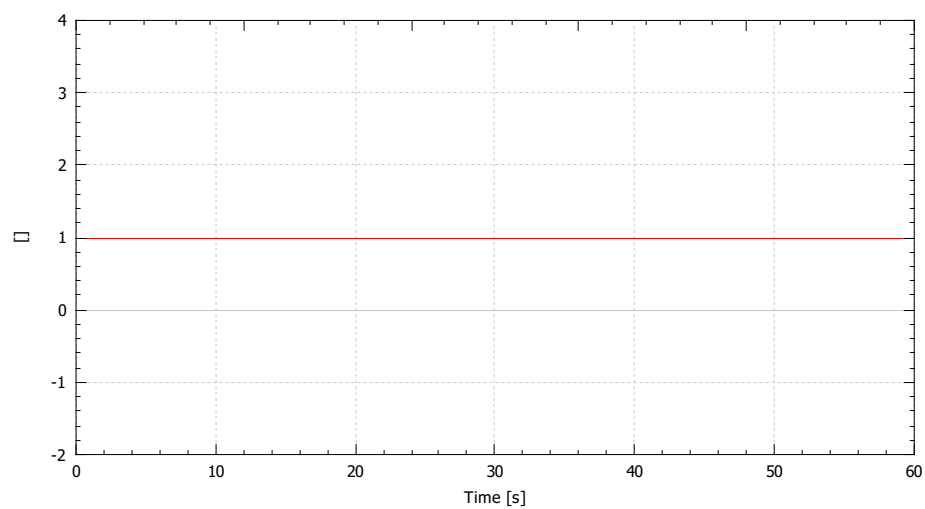
I term

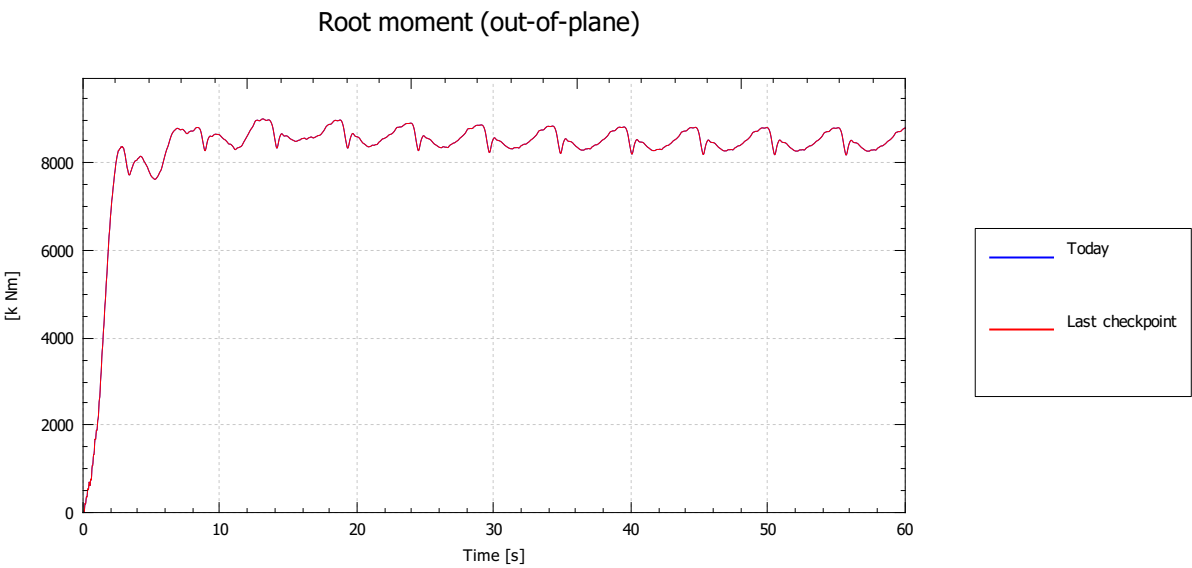
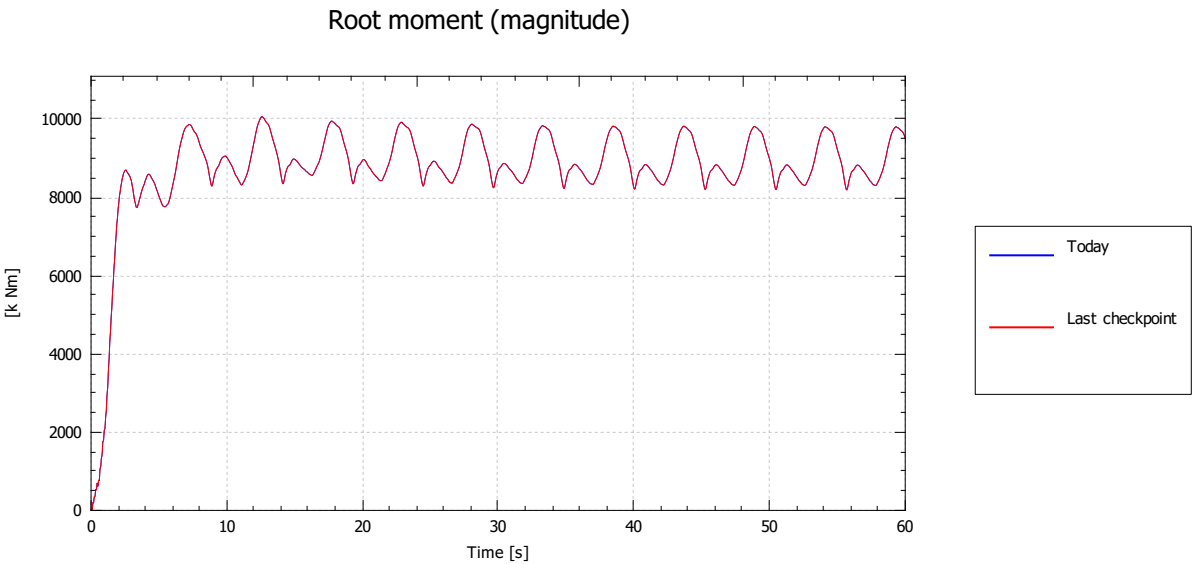
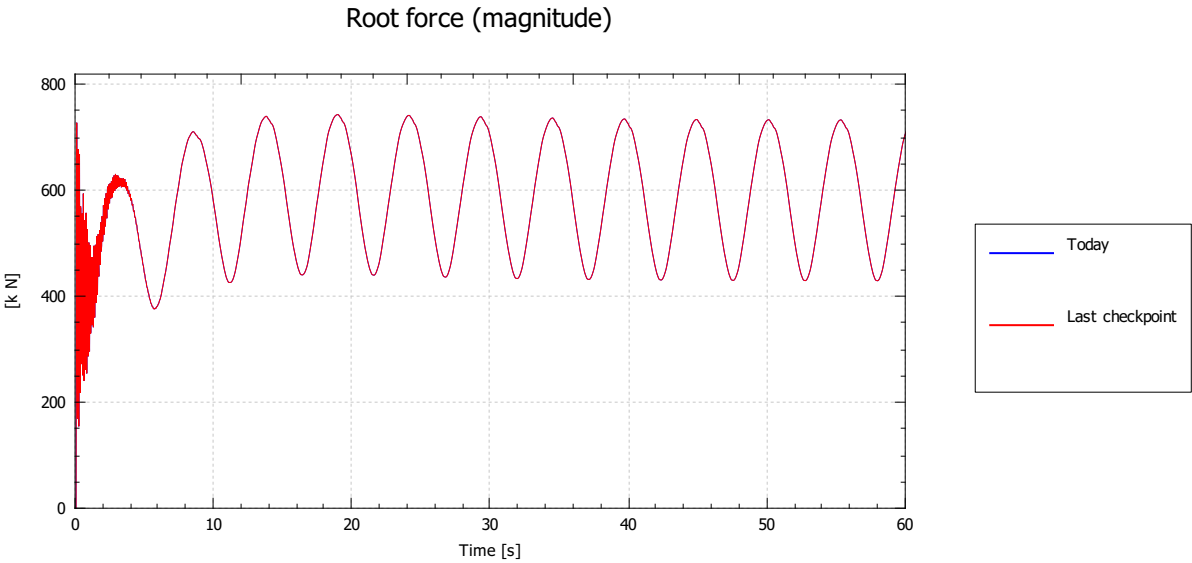


D term

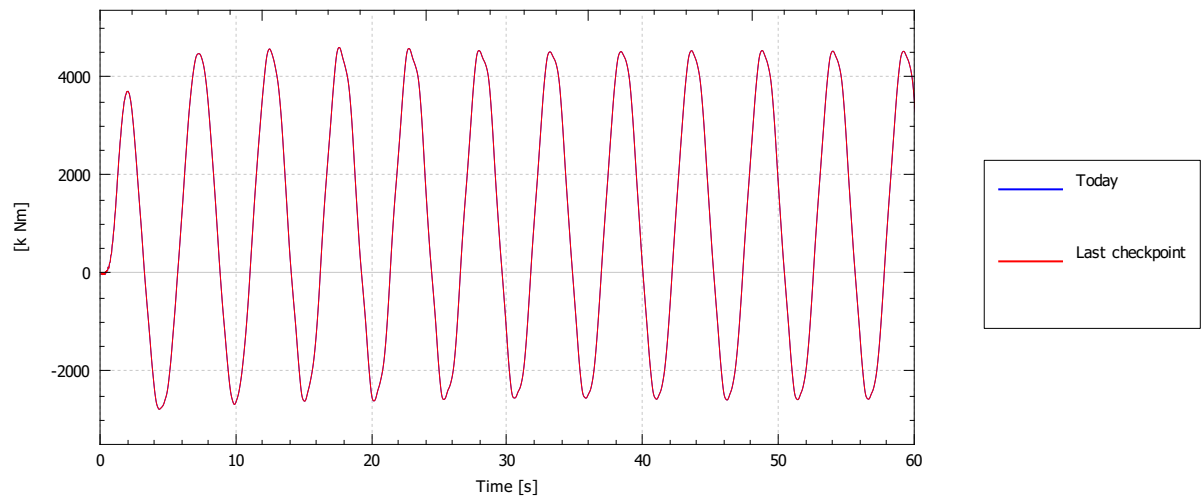


Gain scheduling factor

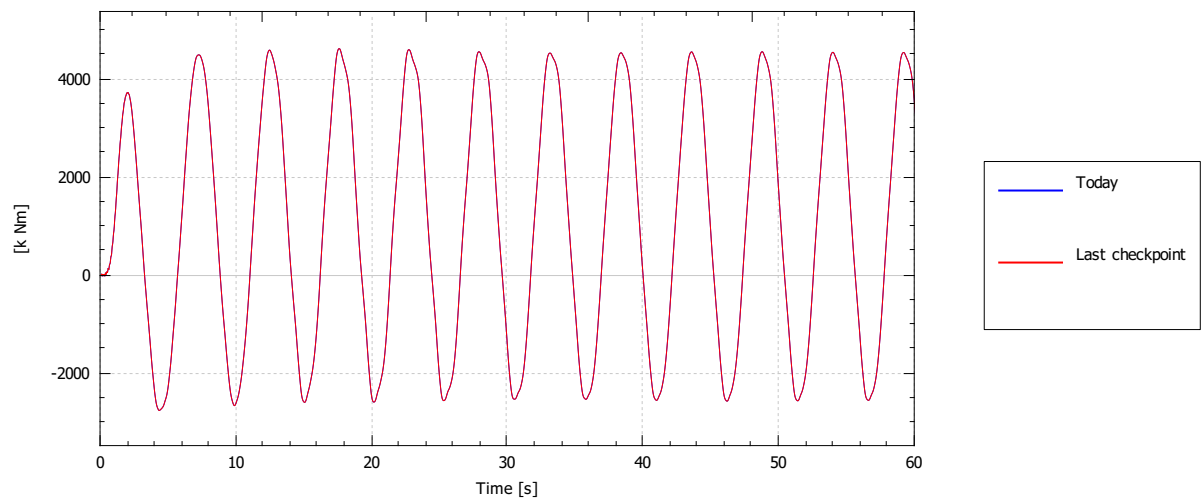




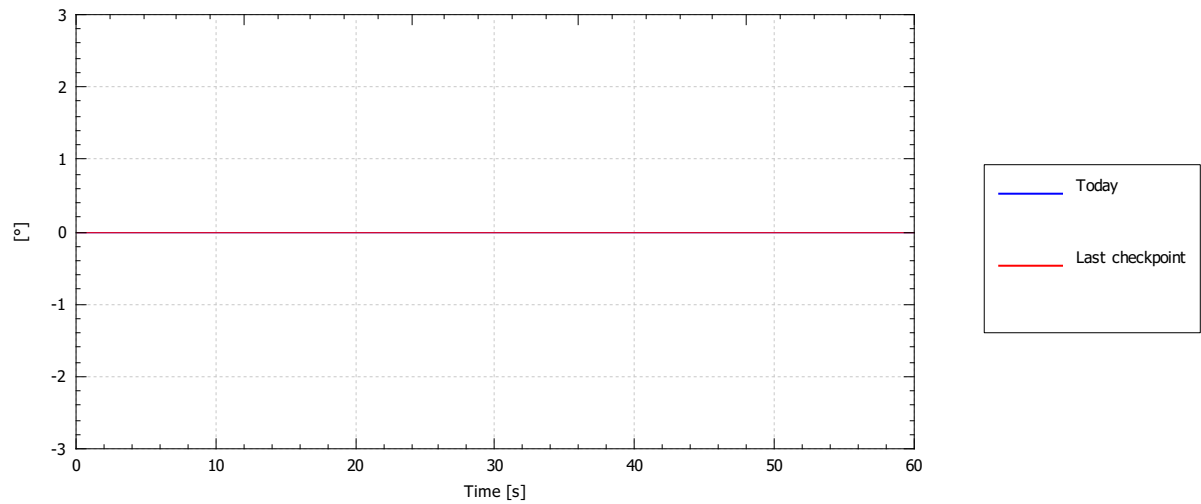
Root moment (in-plane)



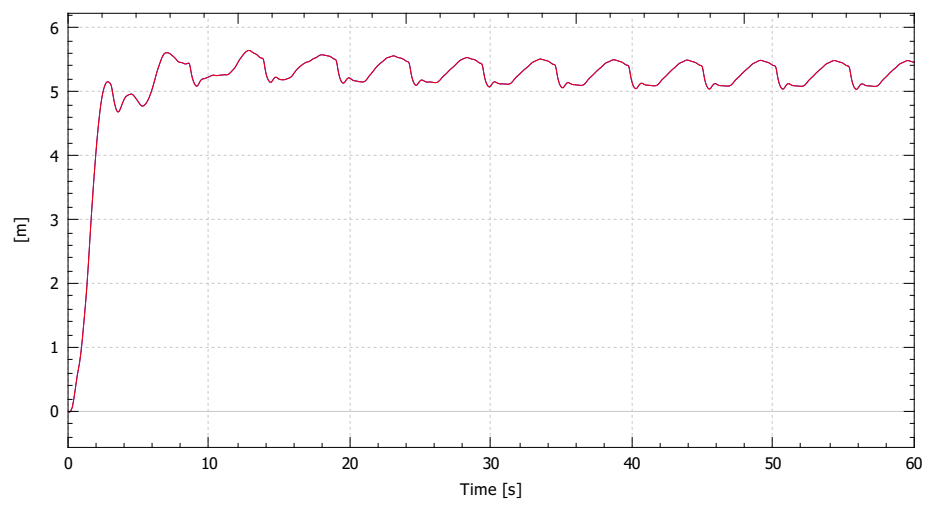
Root moment about shaft



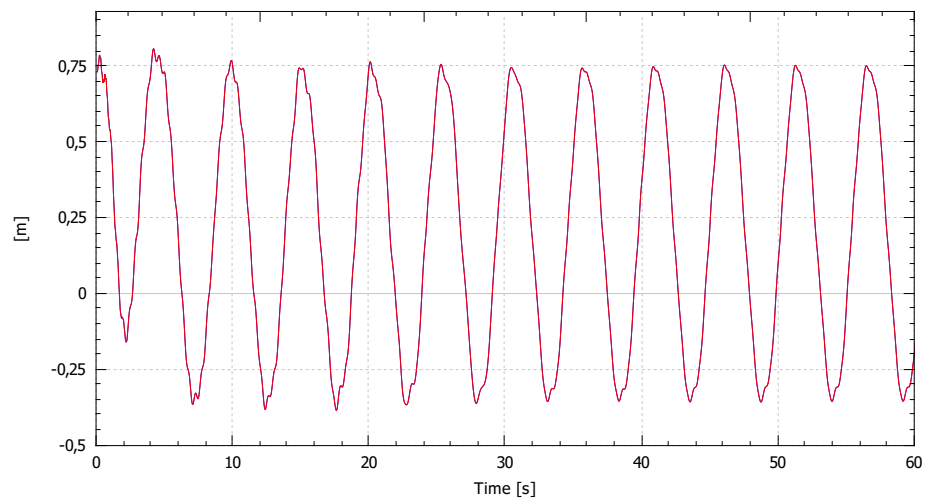
Pitch angle



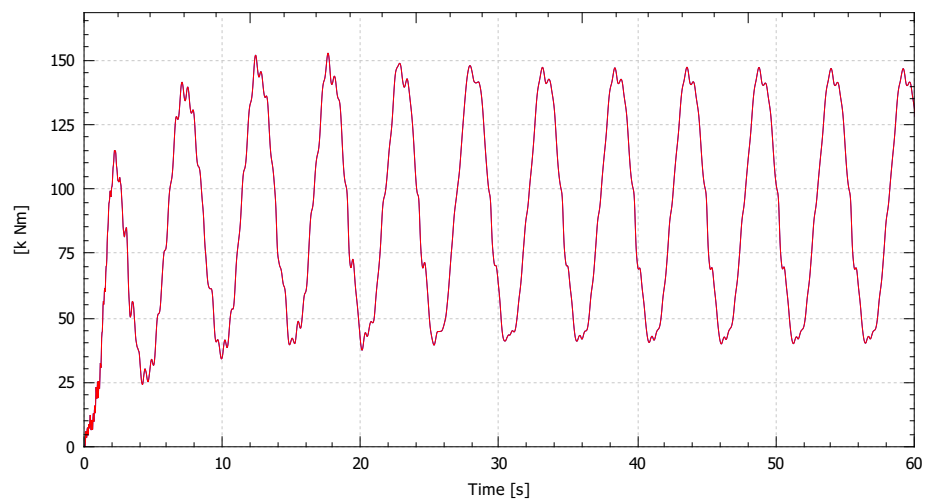
Tip deflection (out-of-plane)

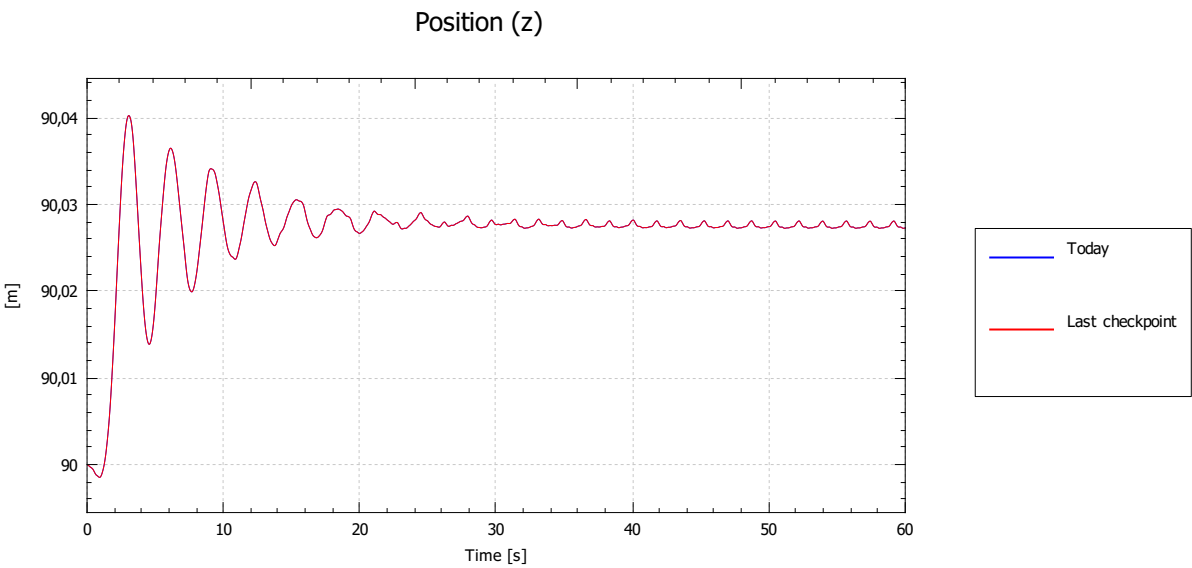
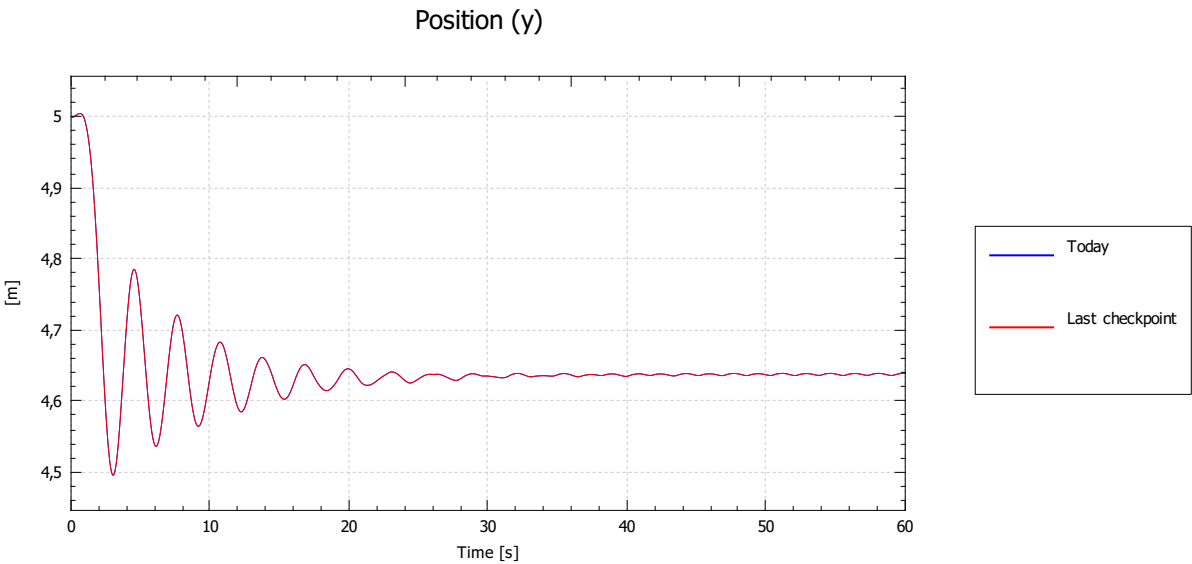
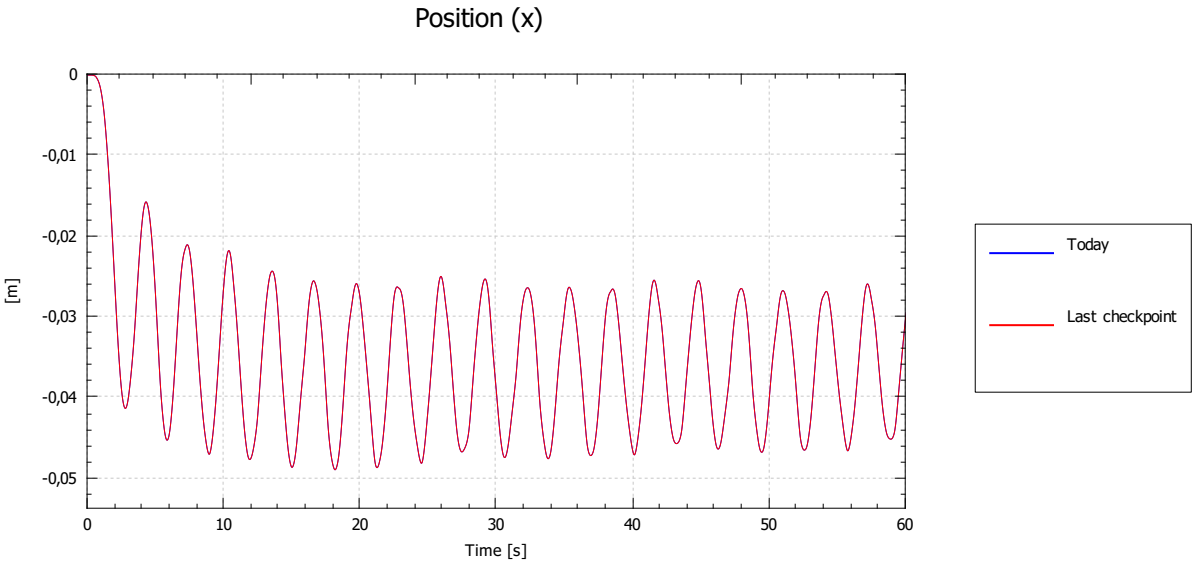


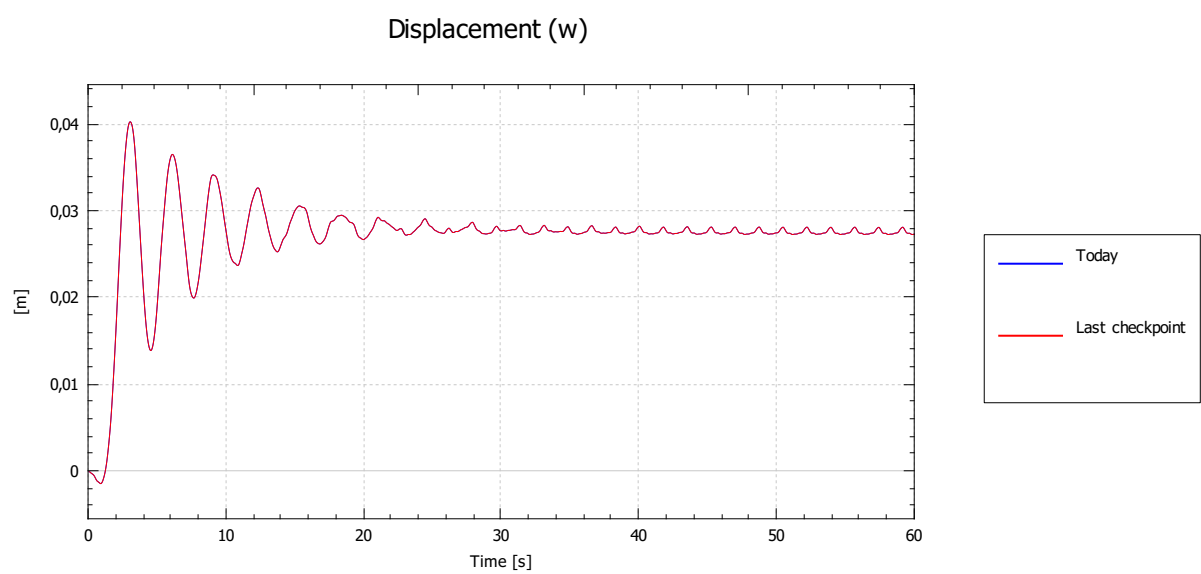
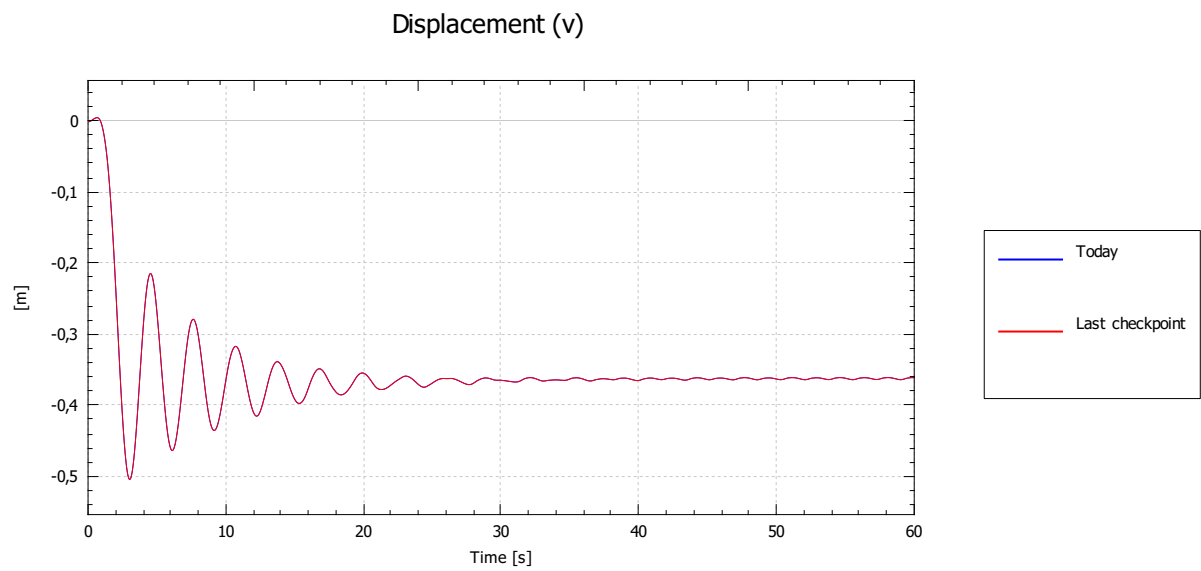
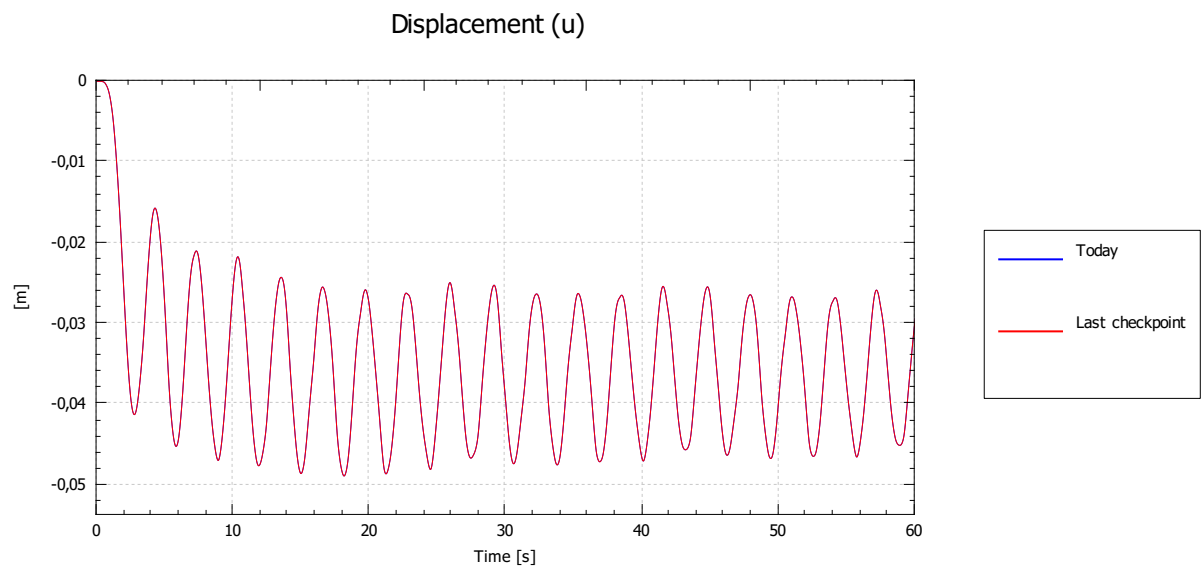
Tip deflection (in-plane)



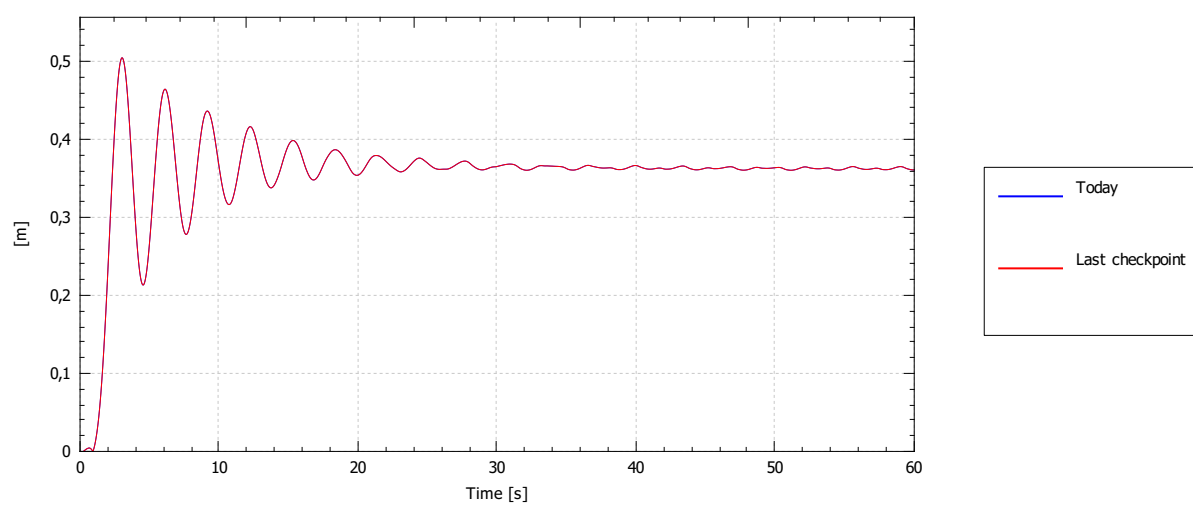
Root torque



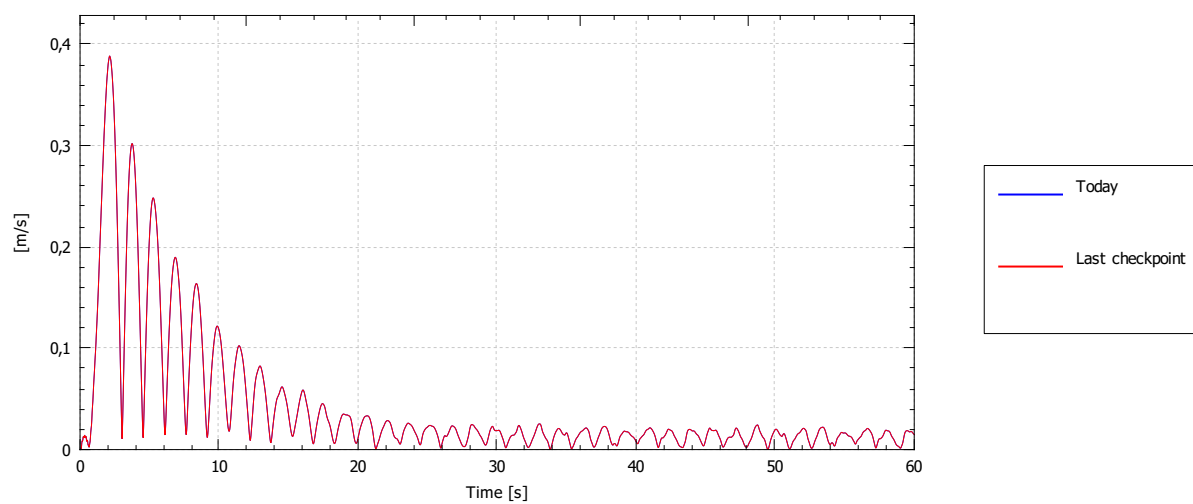




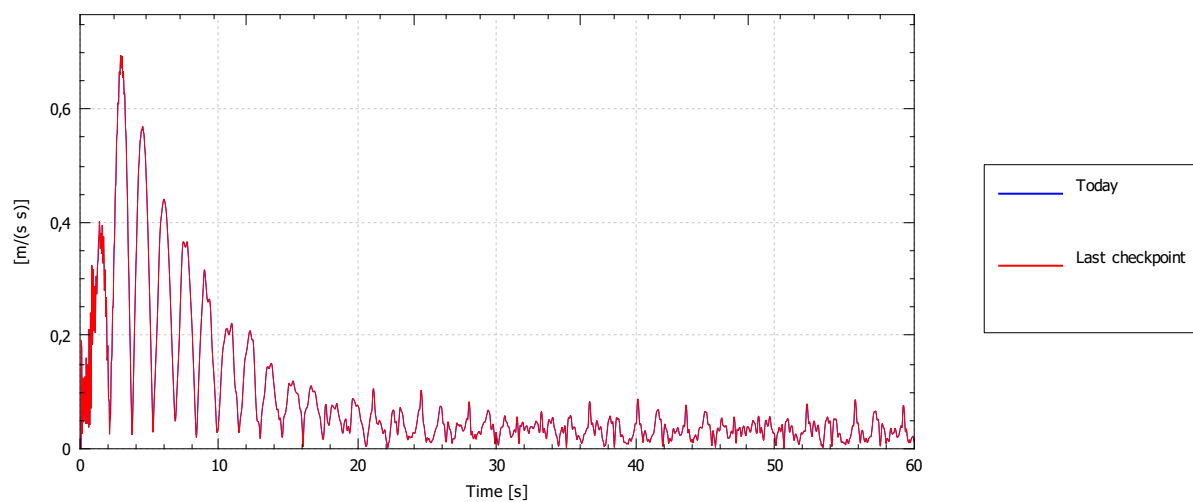
Displacement magnitude



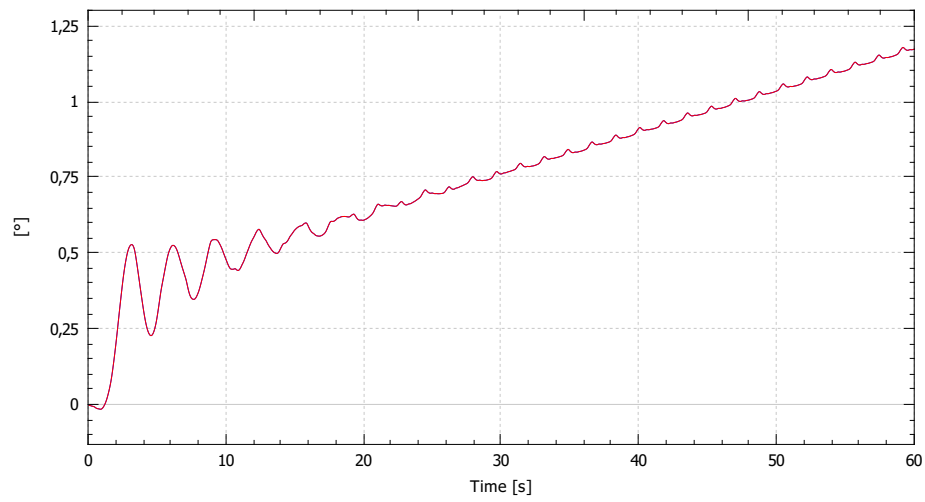
Speed



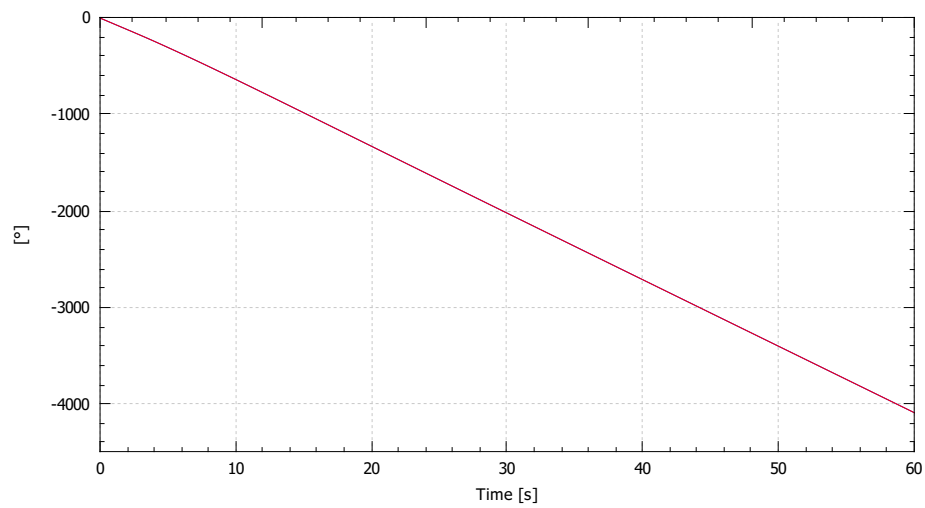
Acceleration, magnitude



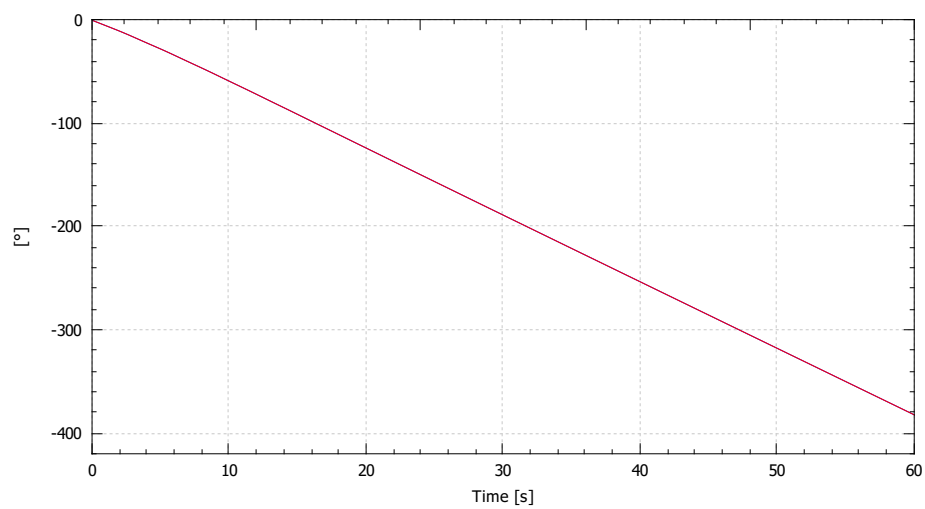
Rotational displacement (ru)



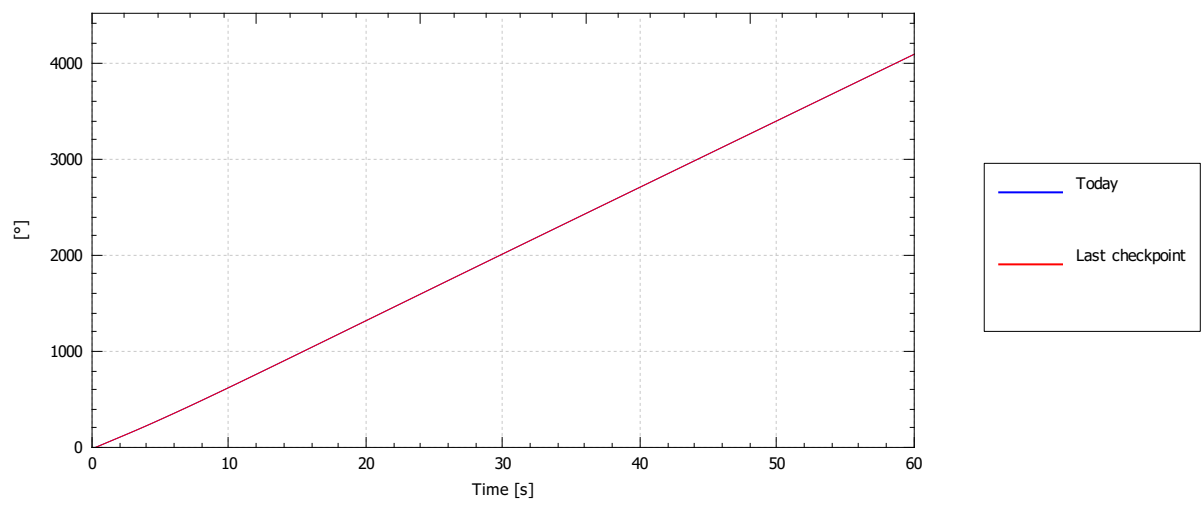
Rotational displacement (rv)



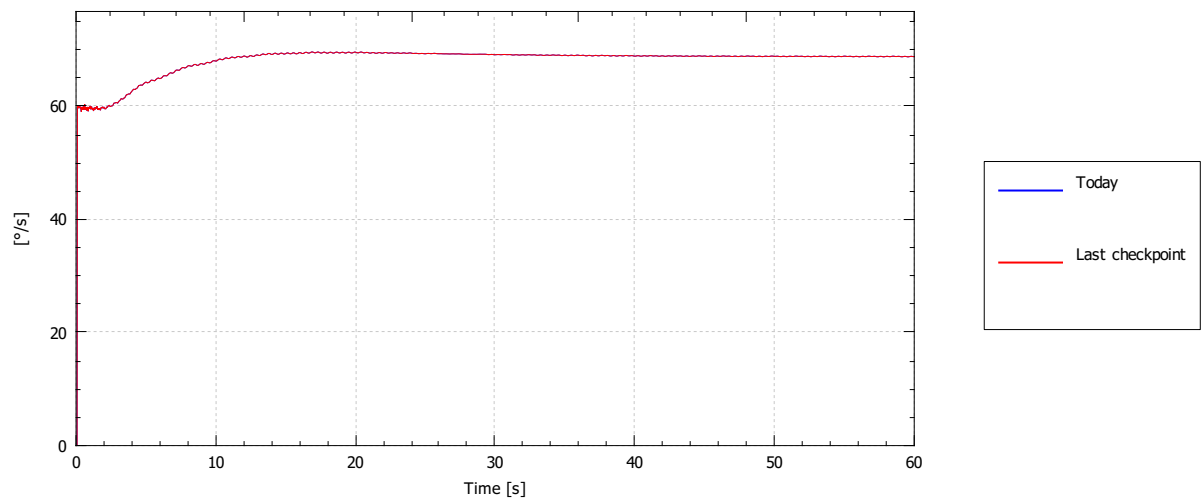
Rotational displacement (rw)



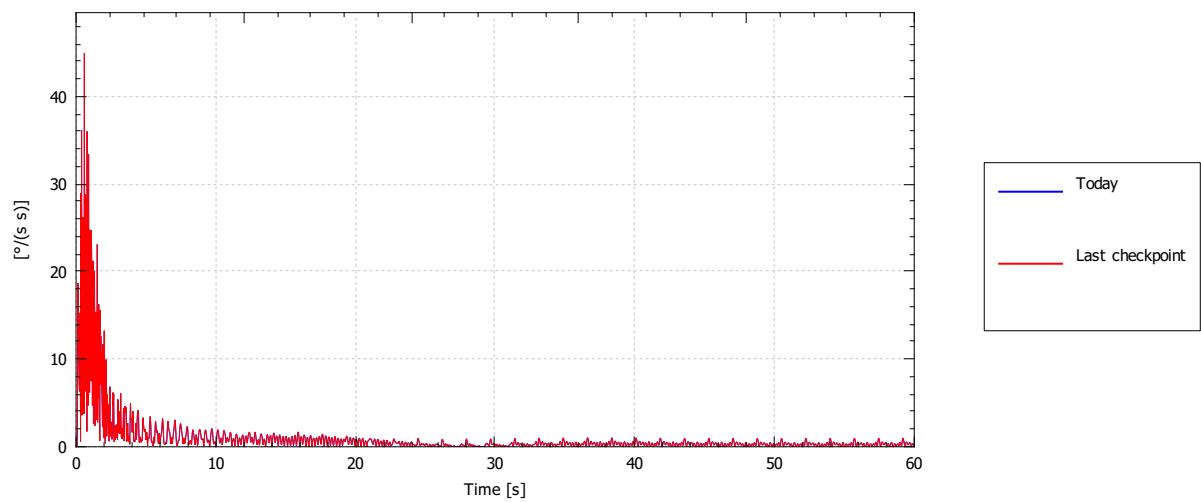
Rotational displacement magnitude



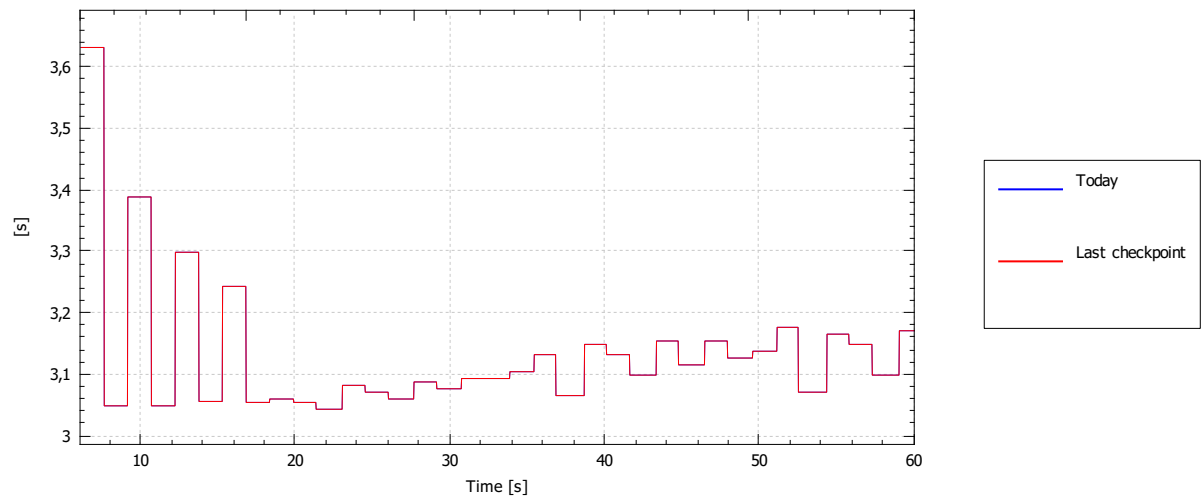
Rotational speed



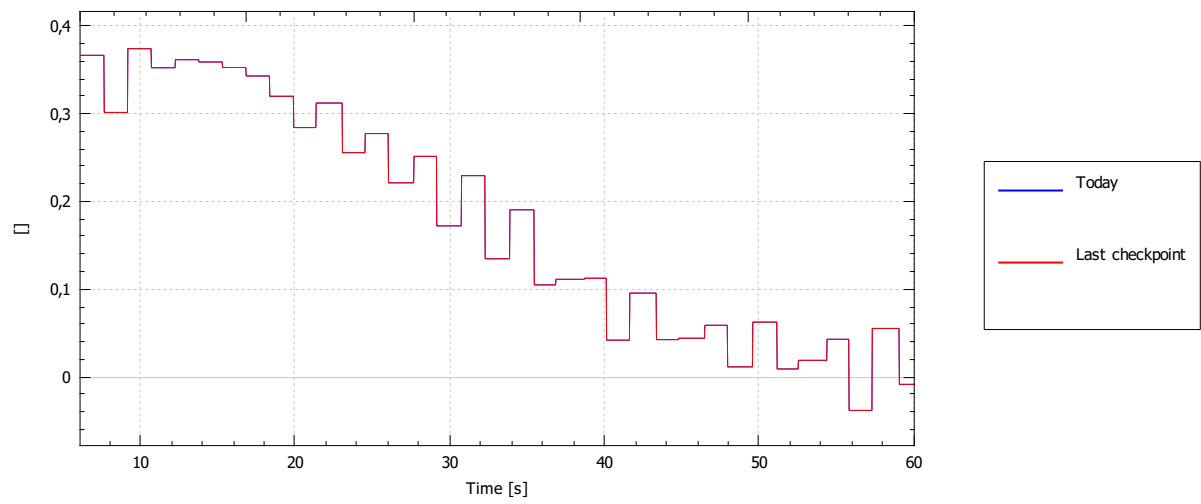
Rotational acceleration mag



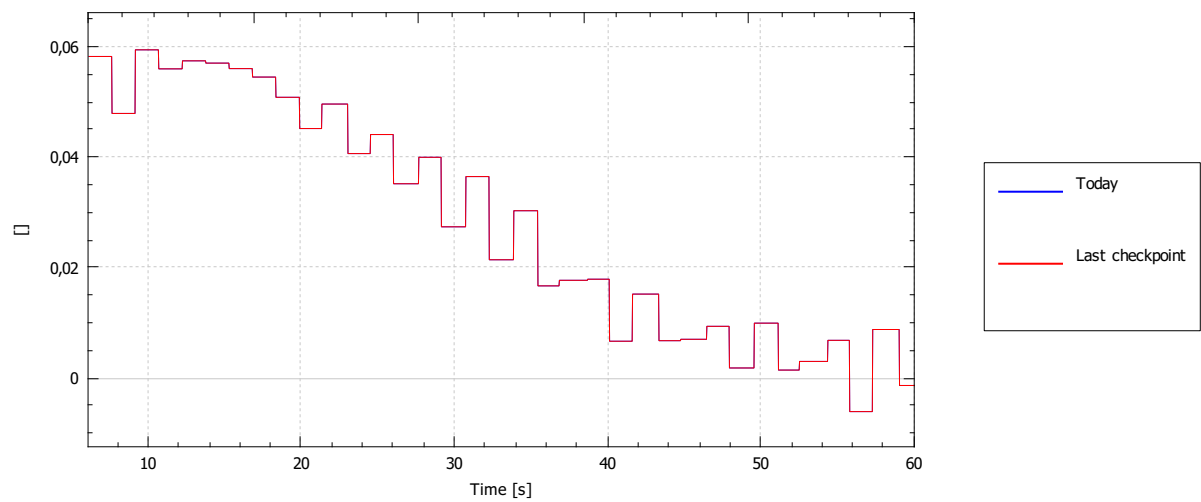
Displacement period



Displacement logarithmic decrement

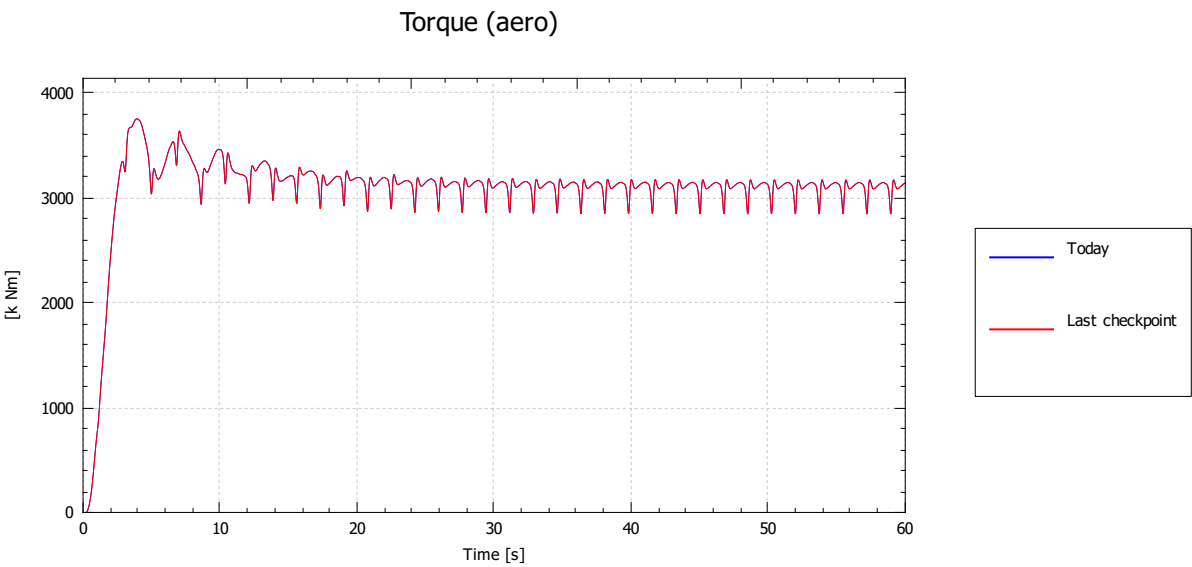
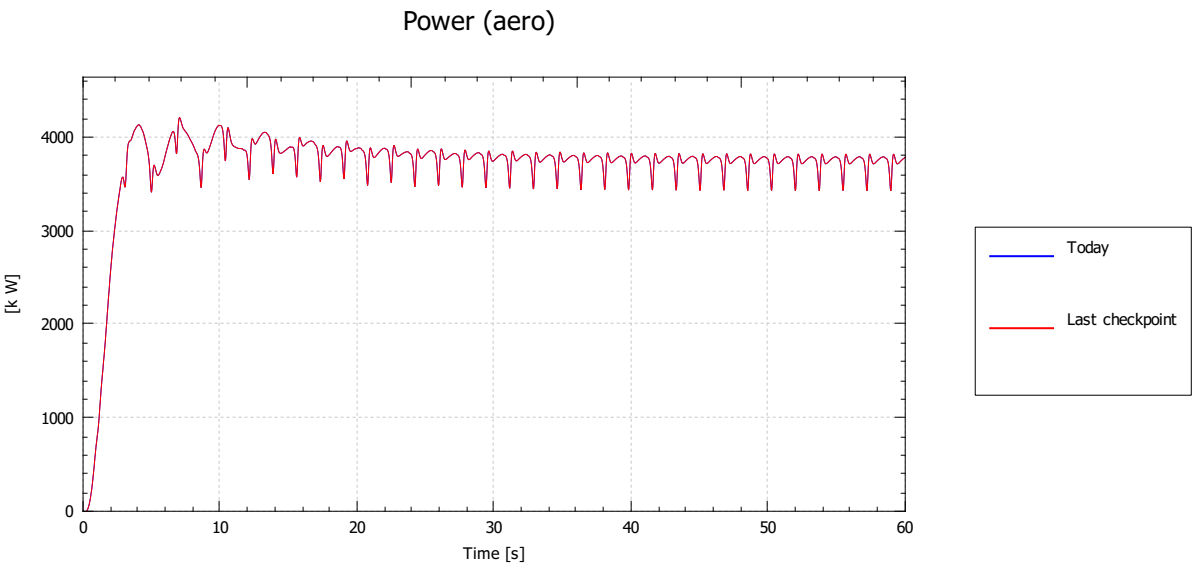


Displacement damping ratio

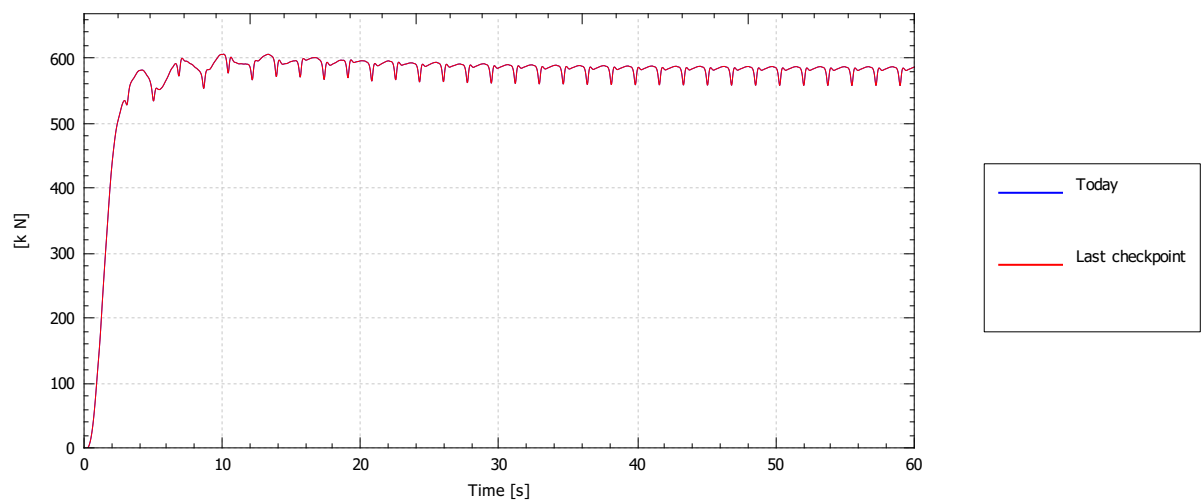


Load case: Torsional Inertia factor

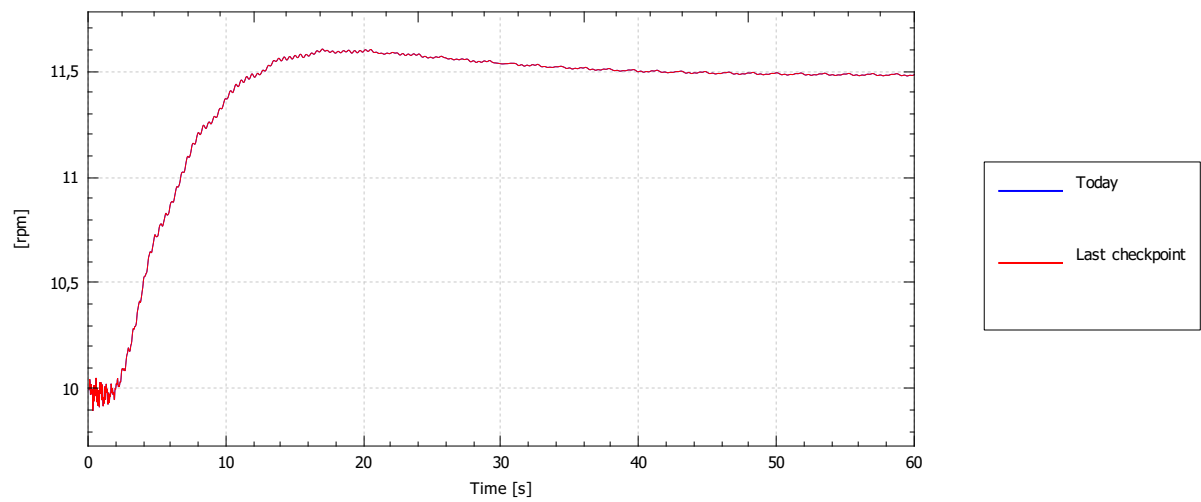
Rotor



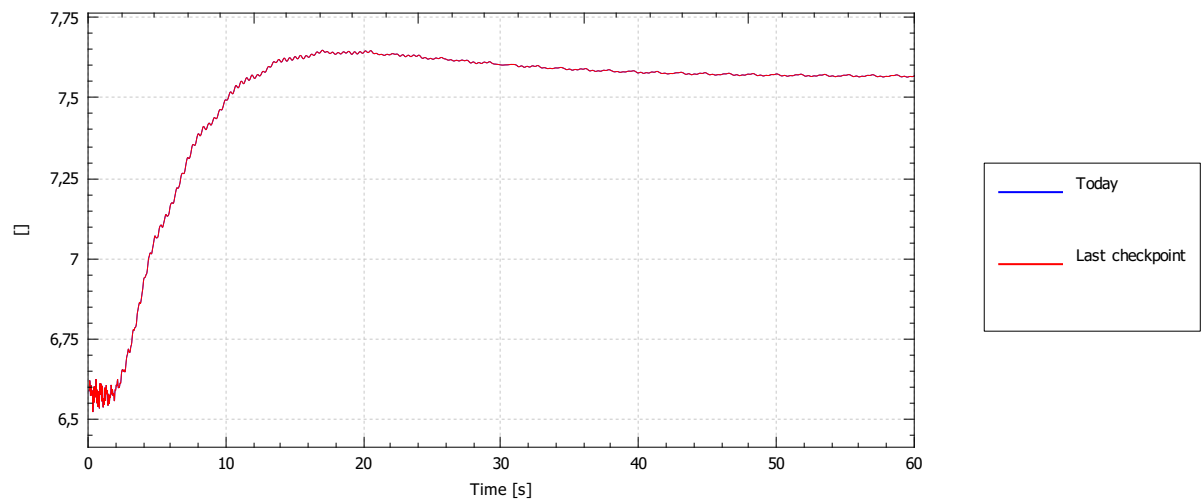
Thrust (aero)



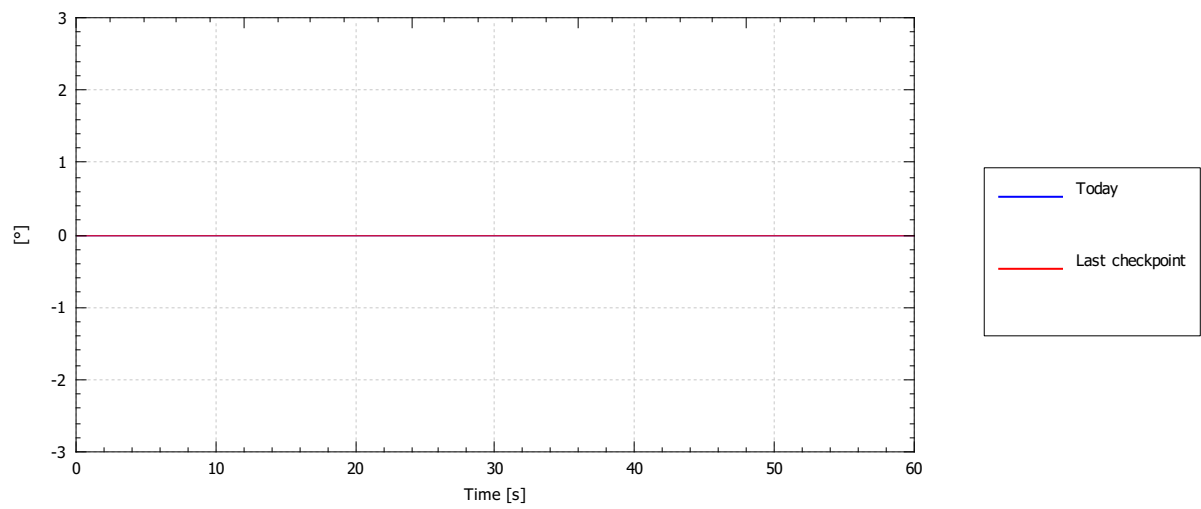
RPM



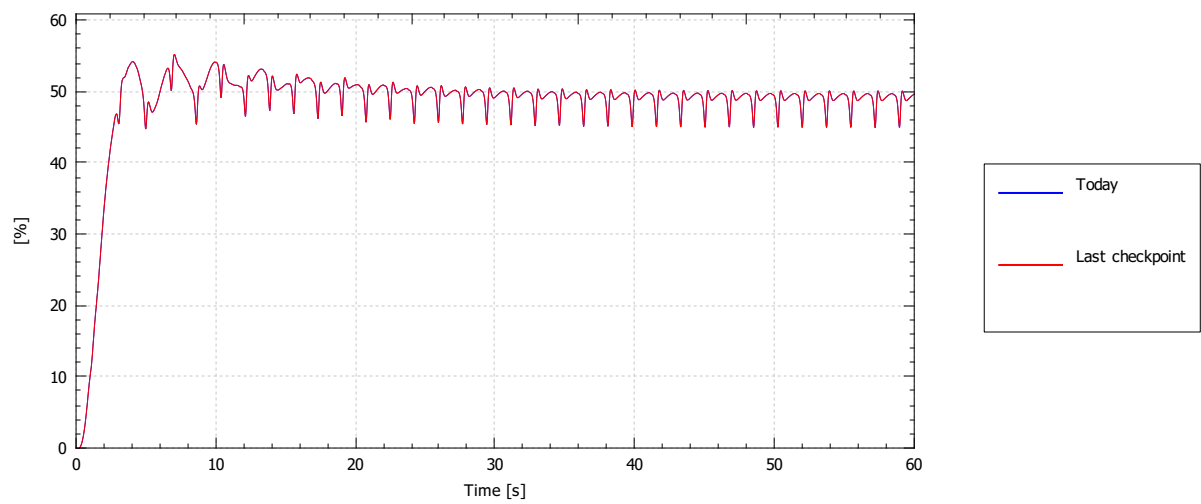
TSR



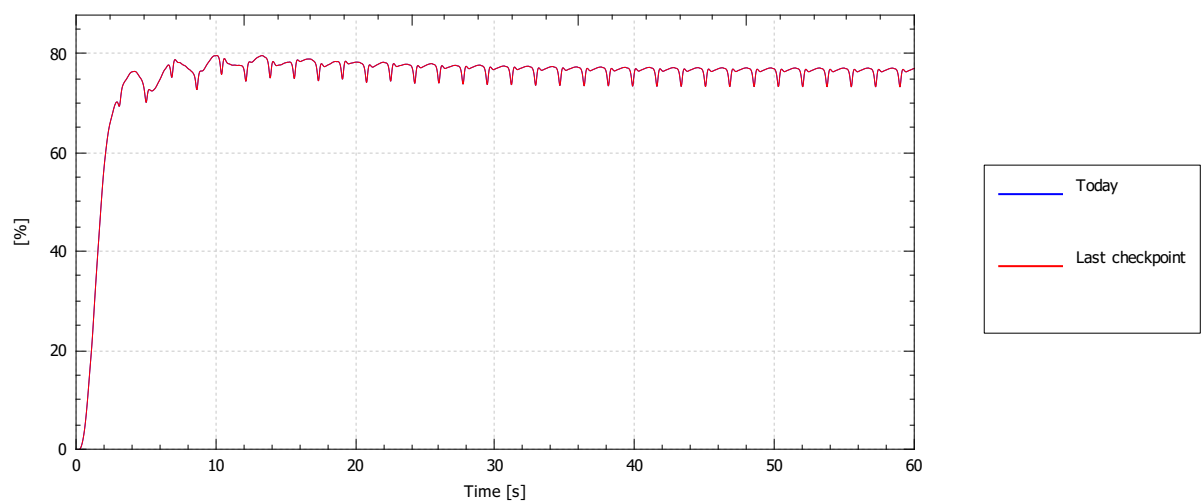
Representative demanded pitch angle



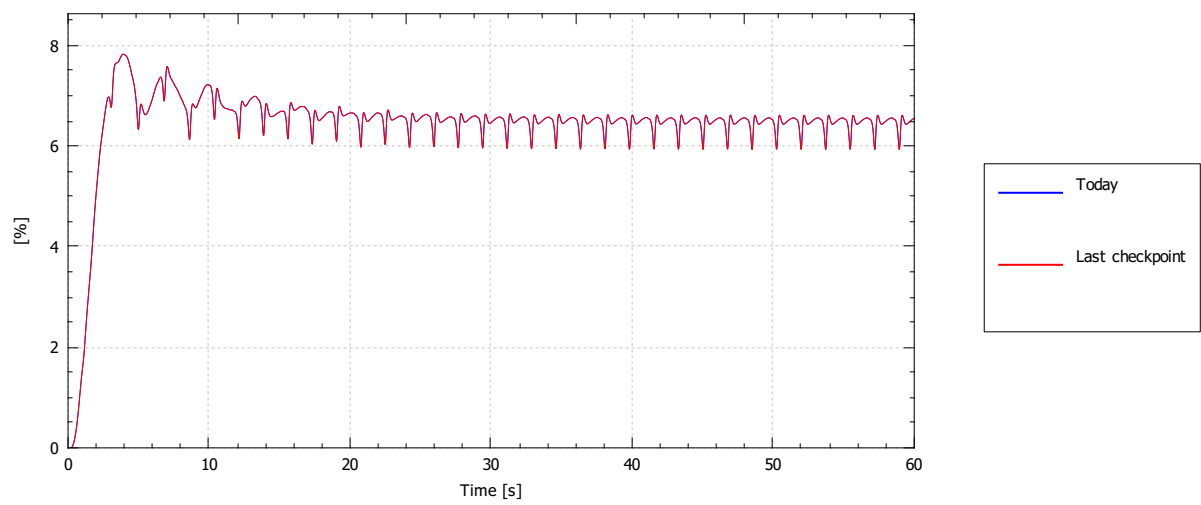
Power coef. (CP)



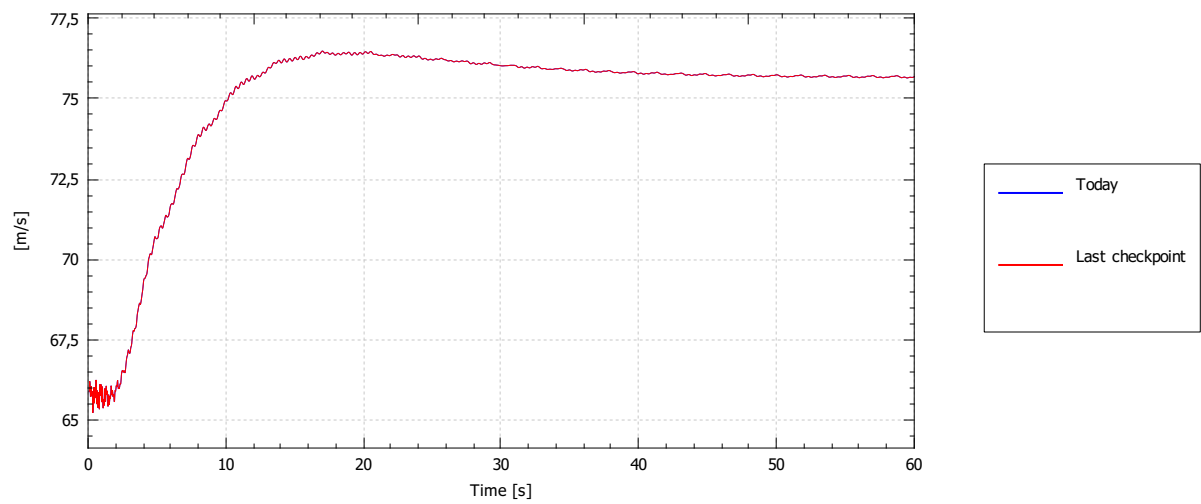
Thrust coef. (CT)



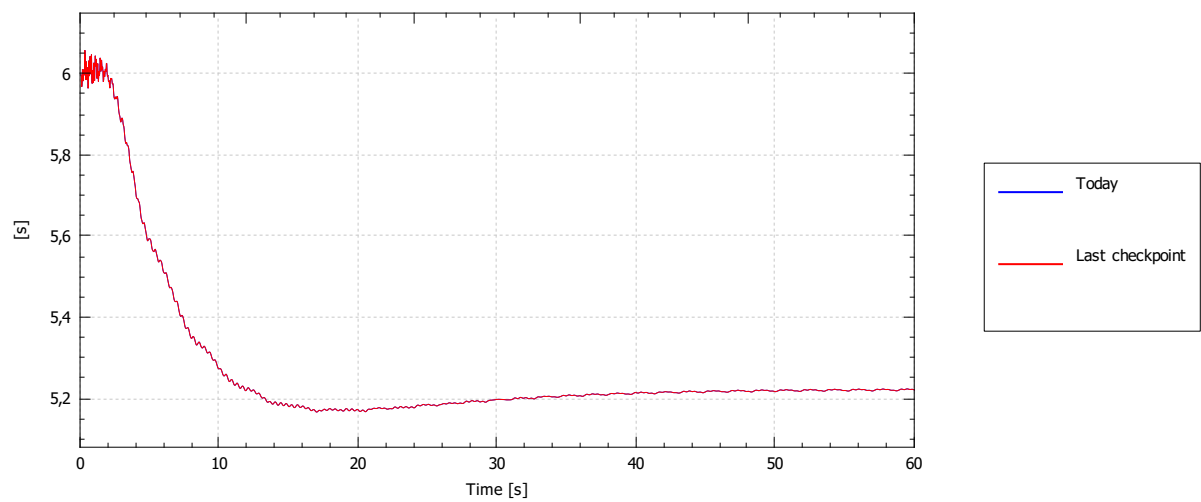
Torque coef. (CQ)



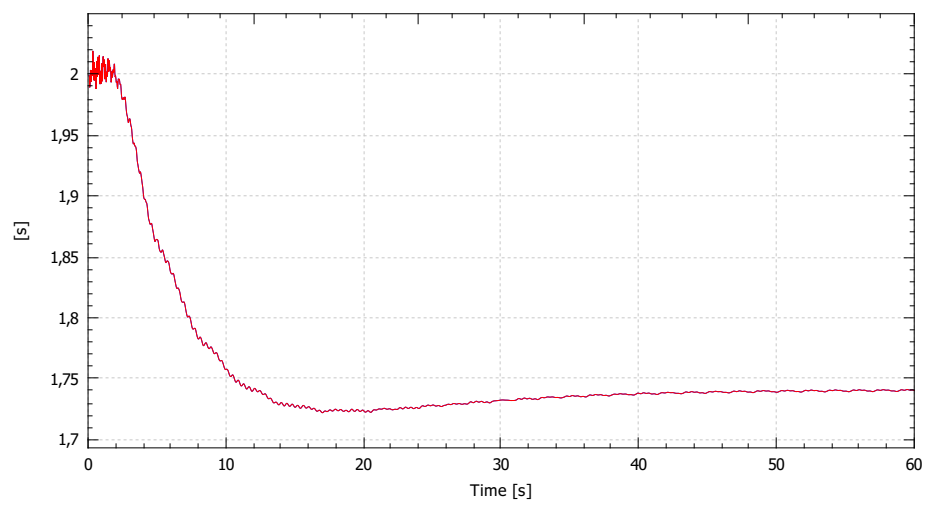
Tip speed



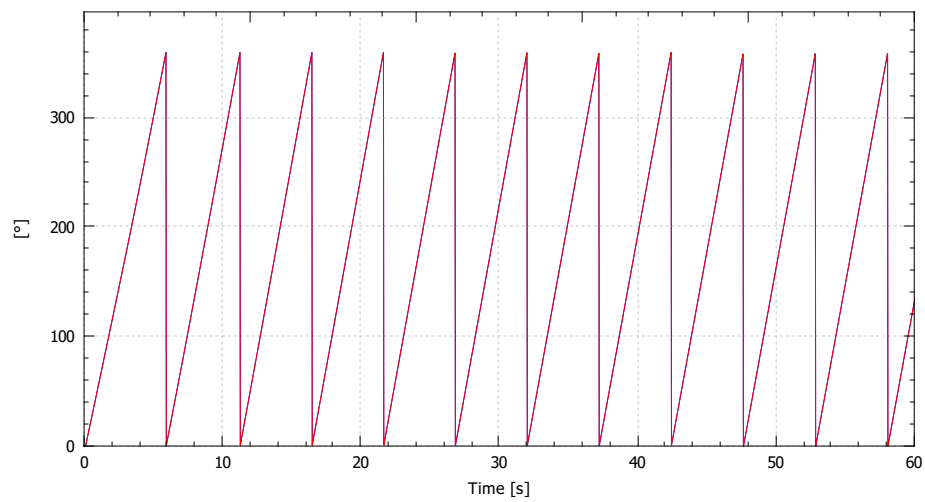
1P (one revolution)



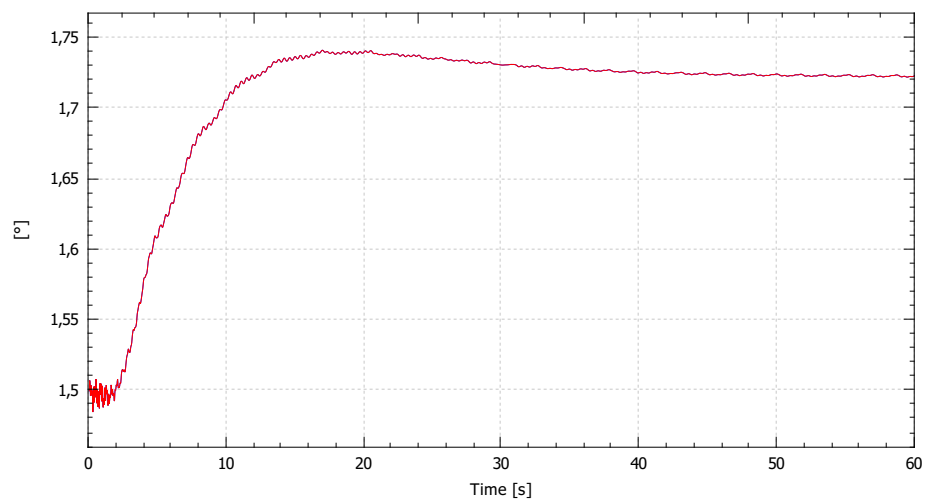
nP (blade passing)



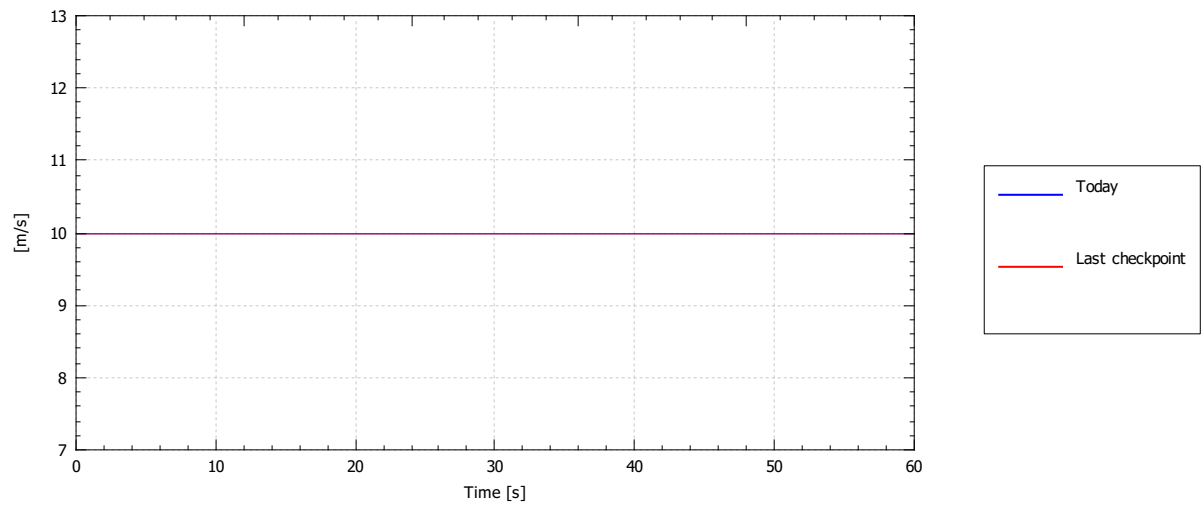
Azimuth angle



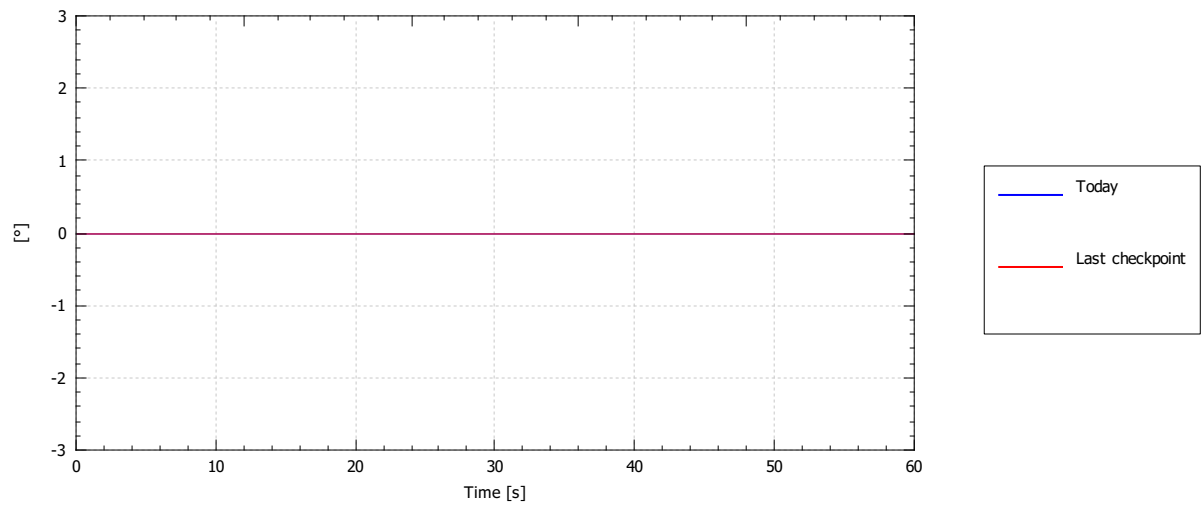
Rotation per timestep



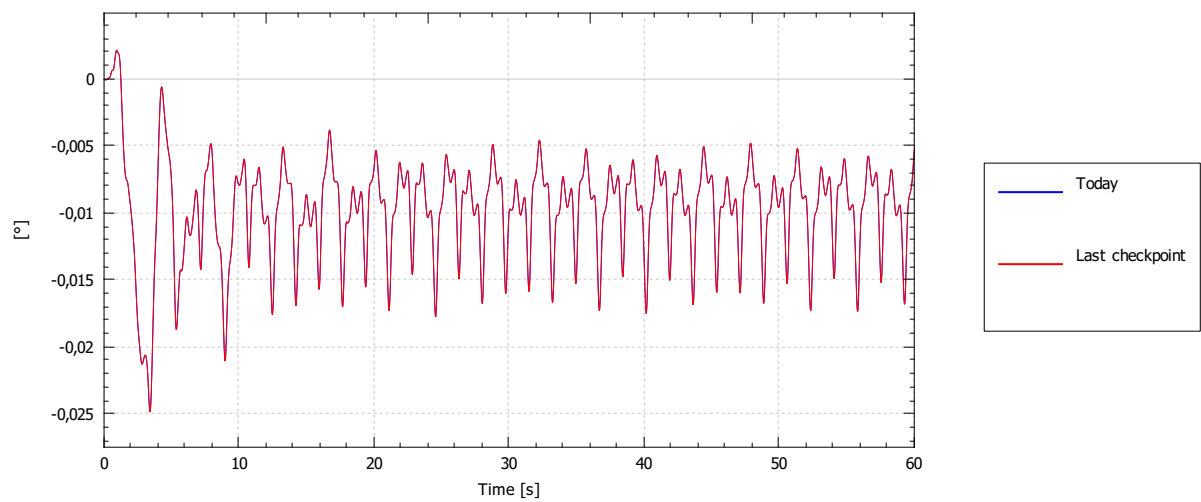
Wind speed at hub, magnitude



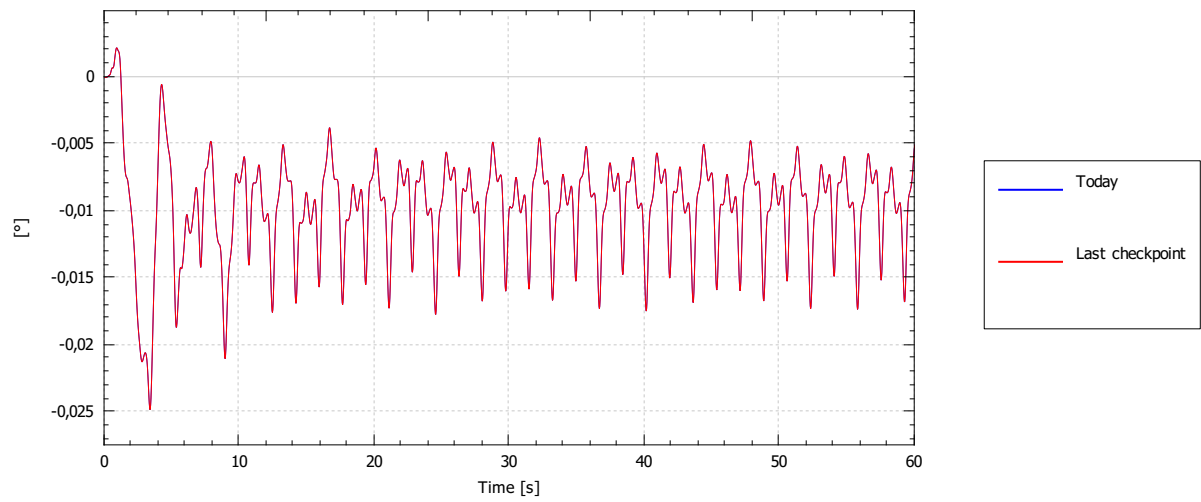
Wind angle at hub



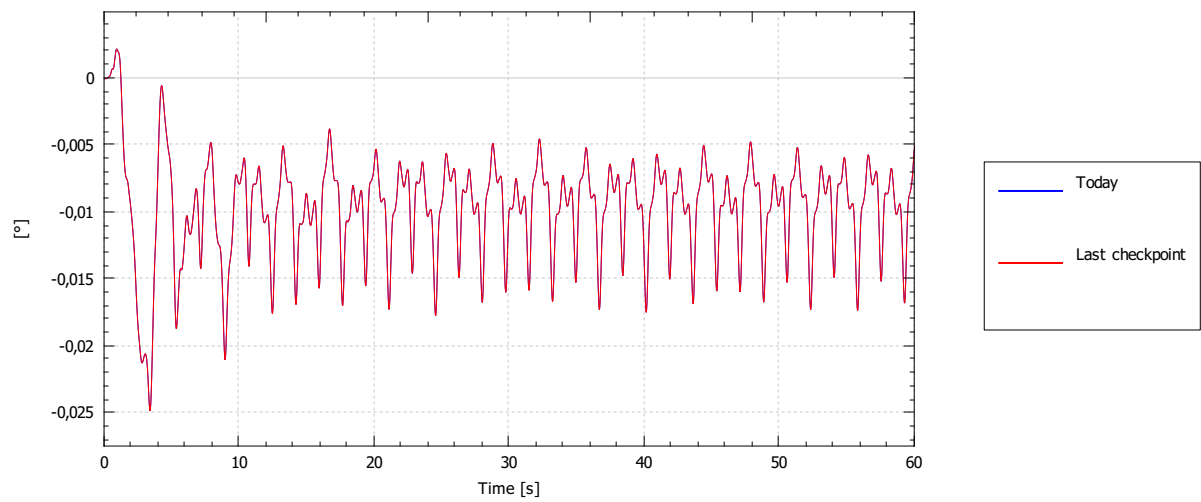
Yaw angle relative to forward



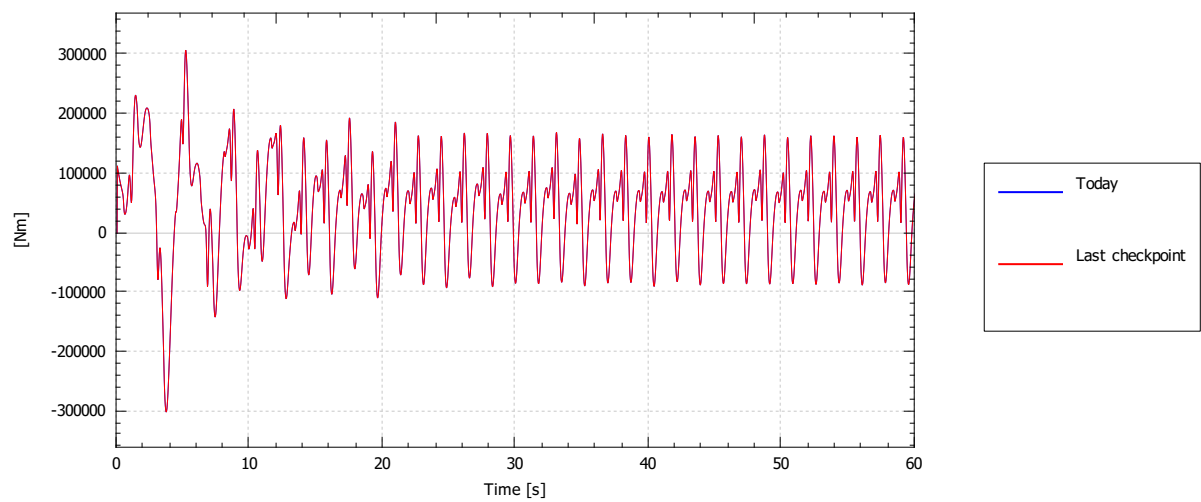
Yaw angle to reference direction



Yaw error

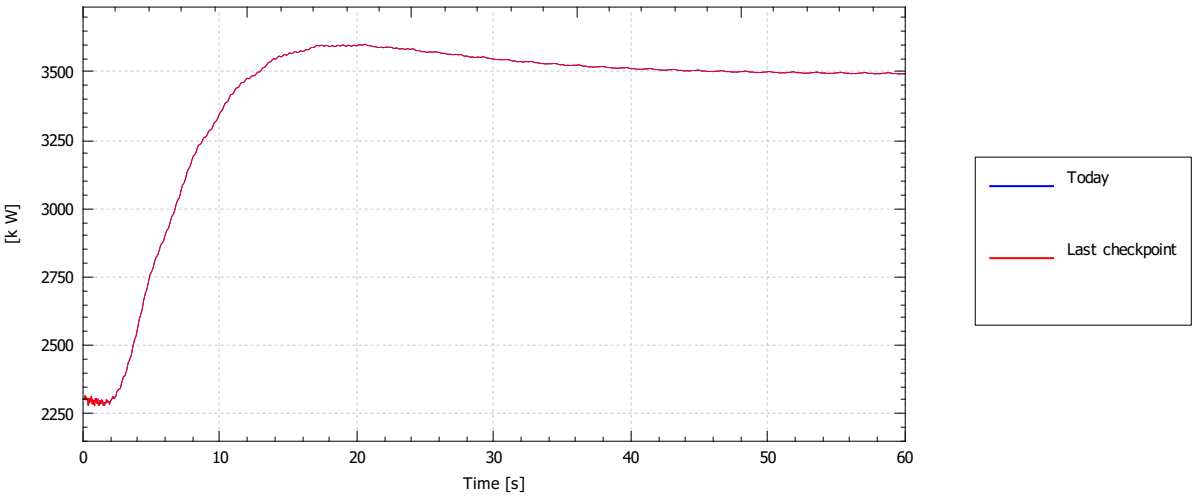


Torque about yaw axis

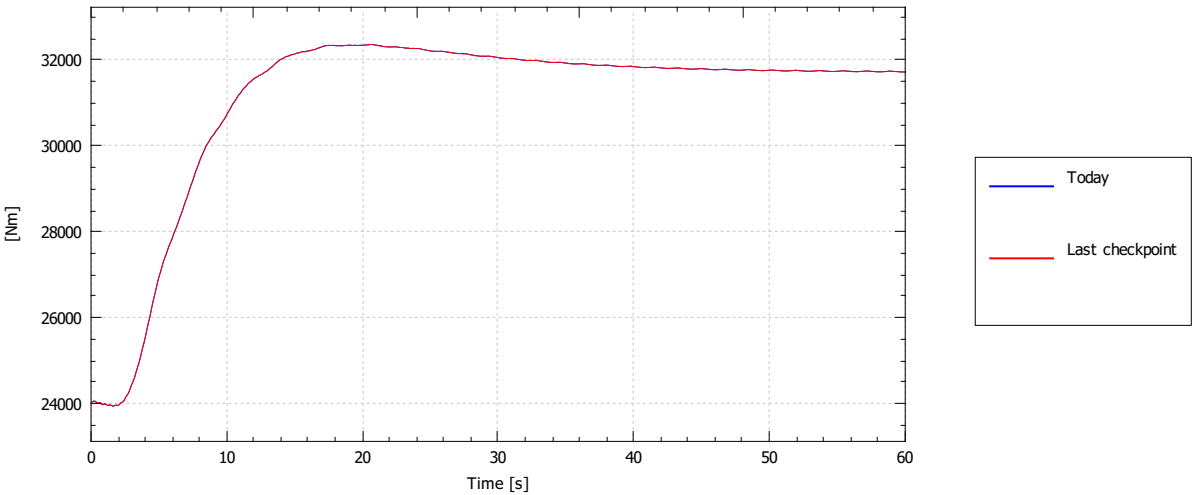


Generator

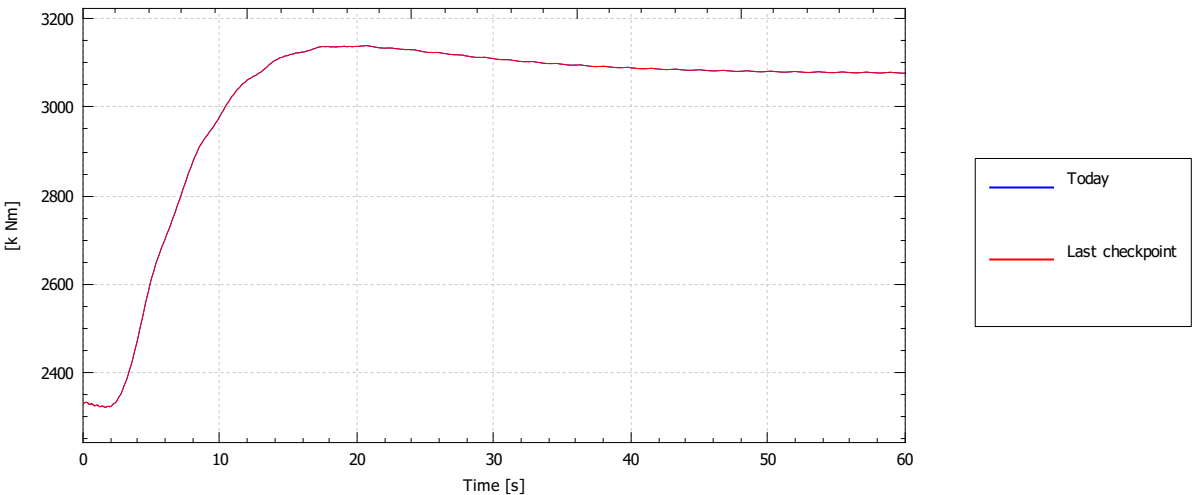
Power (electrical)



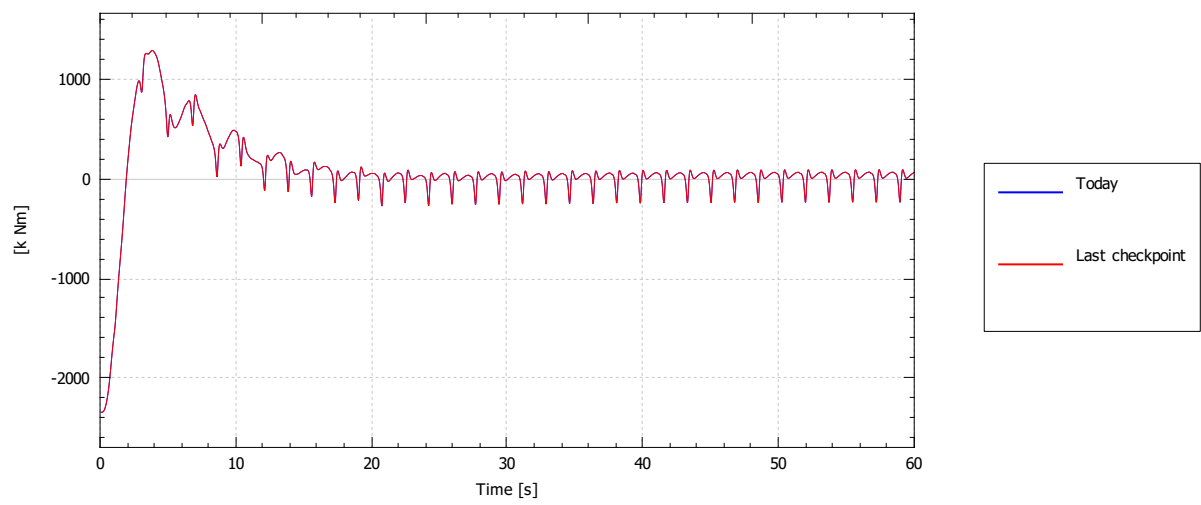
Torque



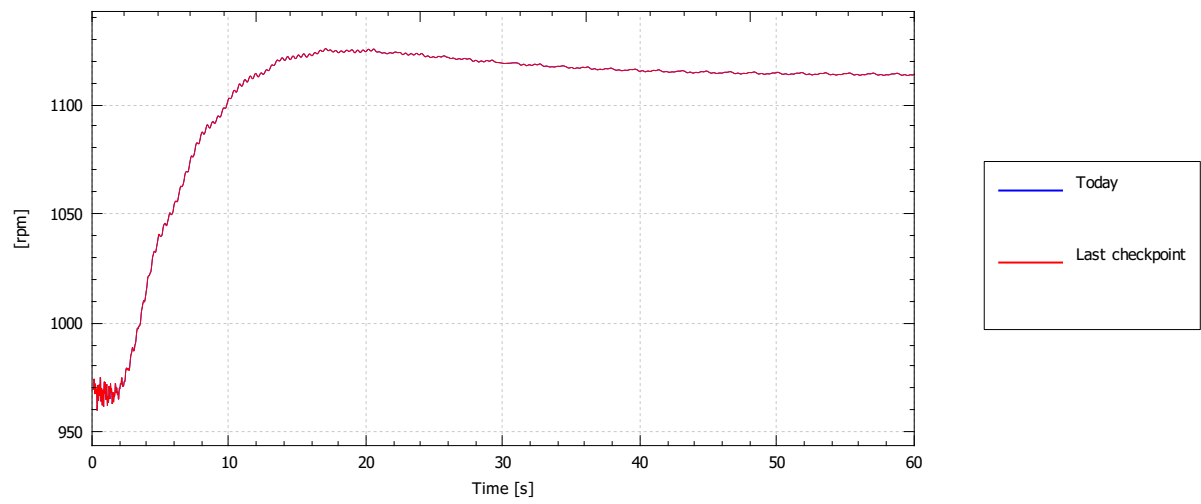
Torque on main shaft



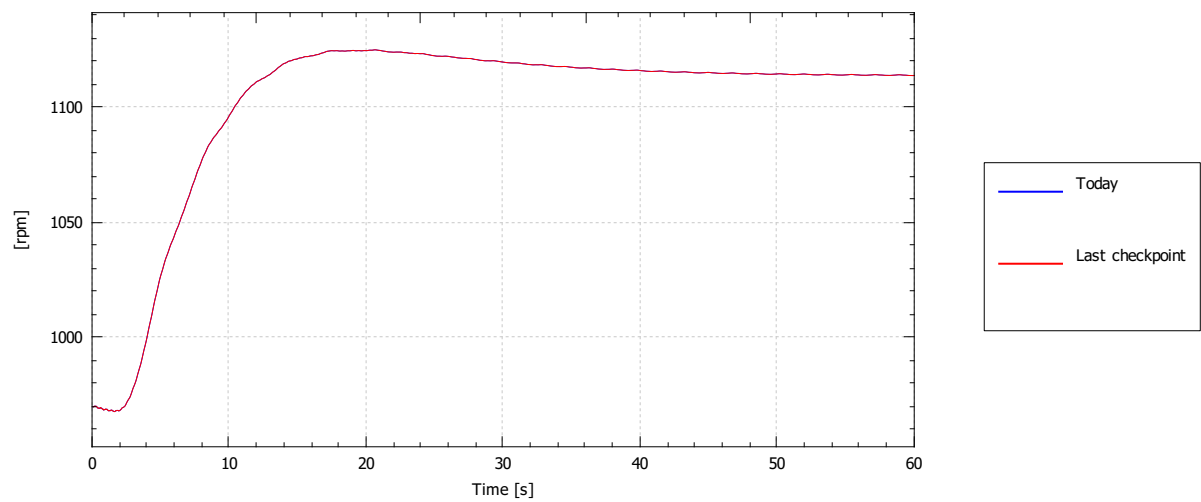
Torque diff. on main shaft



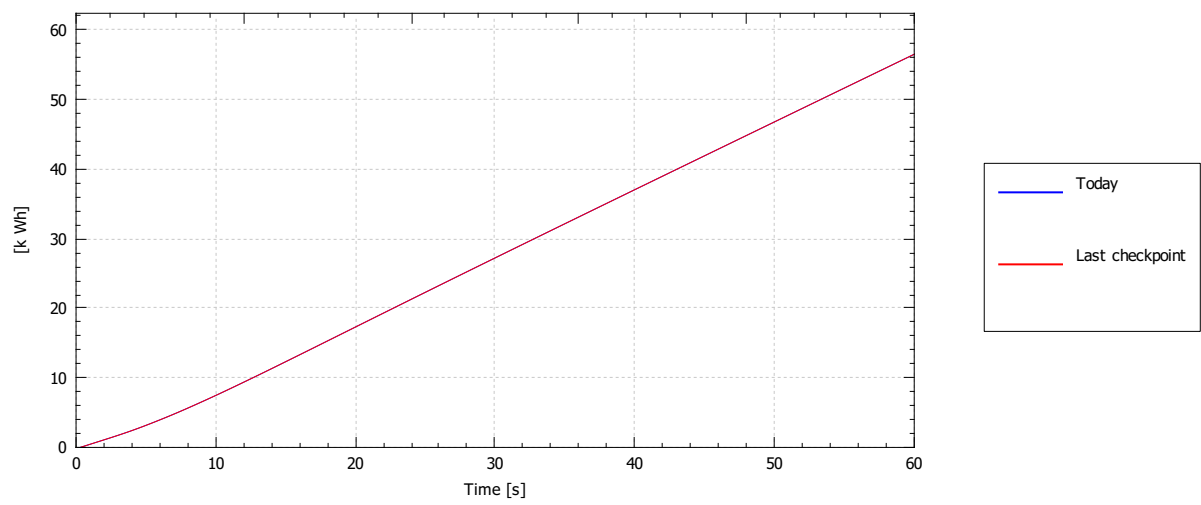
RPM



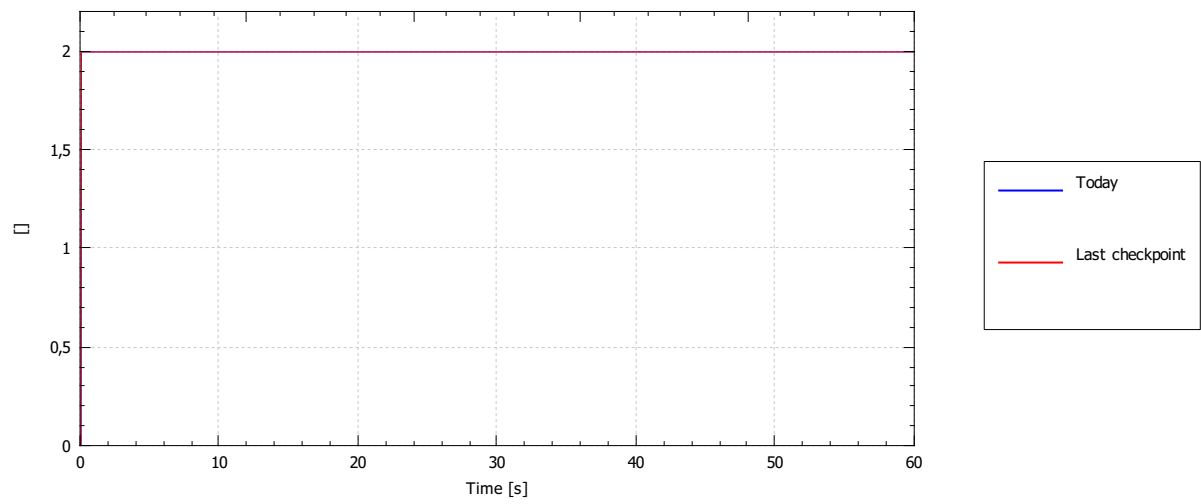
Filtered RPM



Electricity production

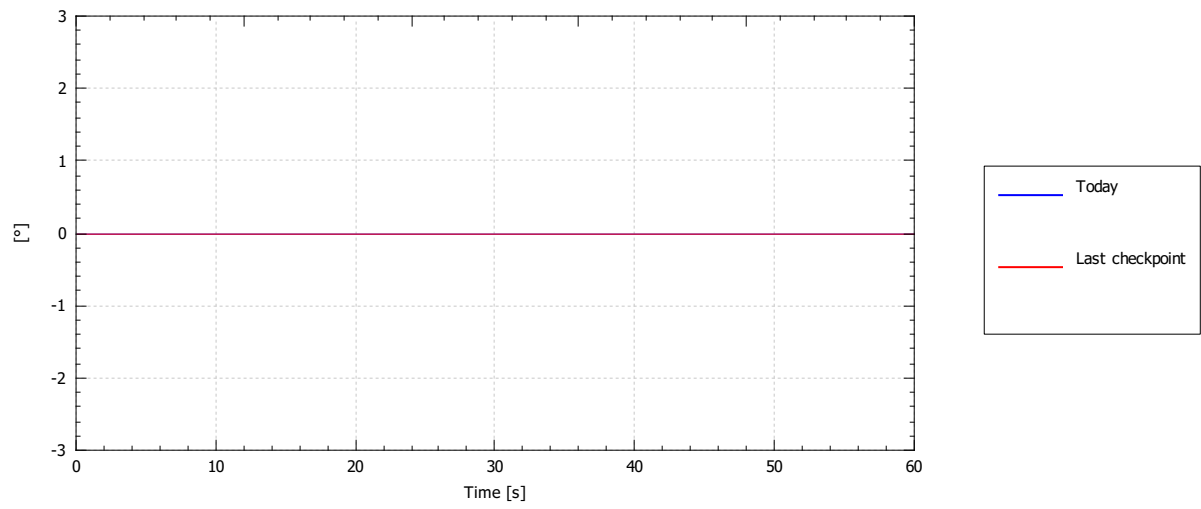


Region

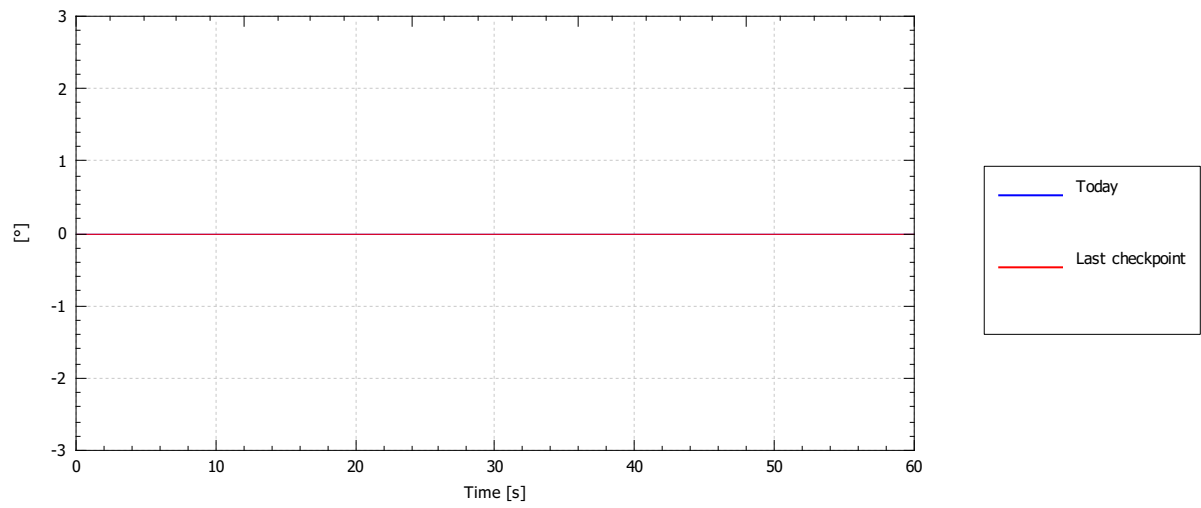


Demanded pitch controller

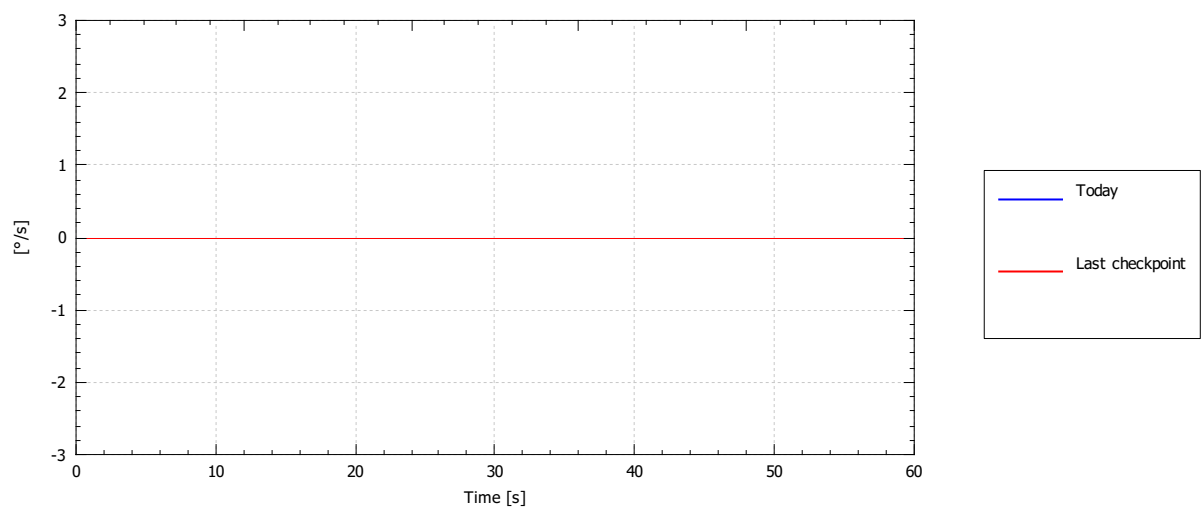
Demanded collective pitch angle



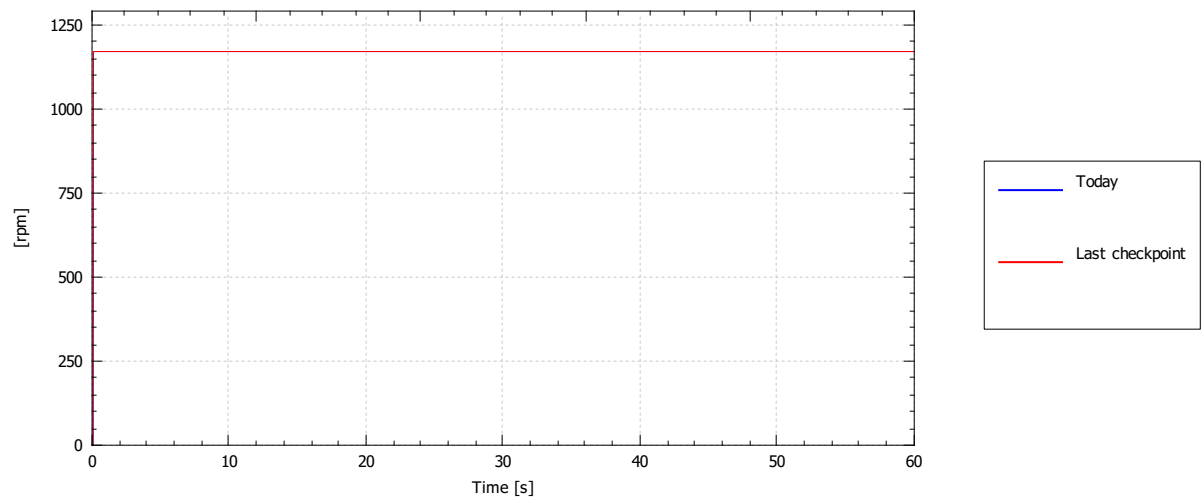
Cumulative demanded collective pitch angle



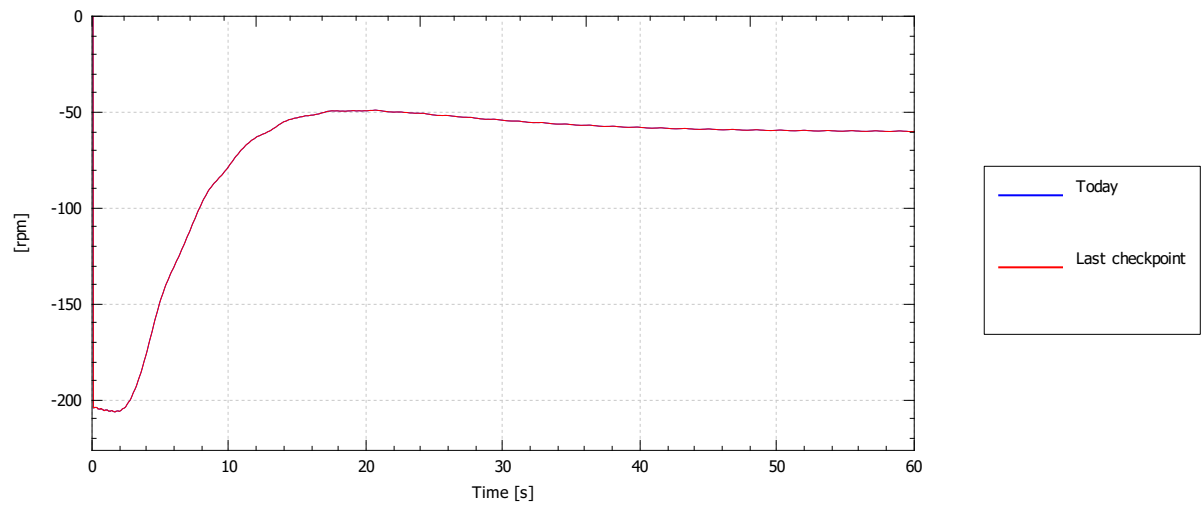
Demanded collective pitch angle rate



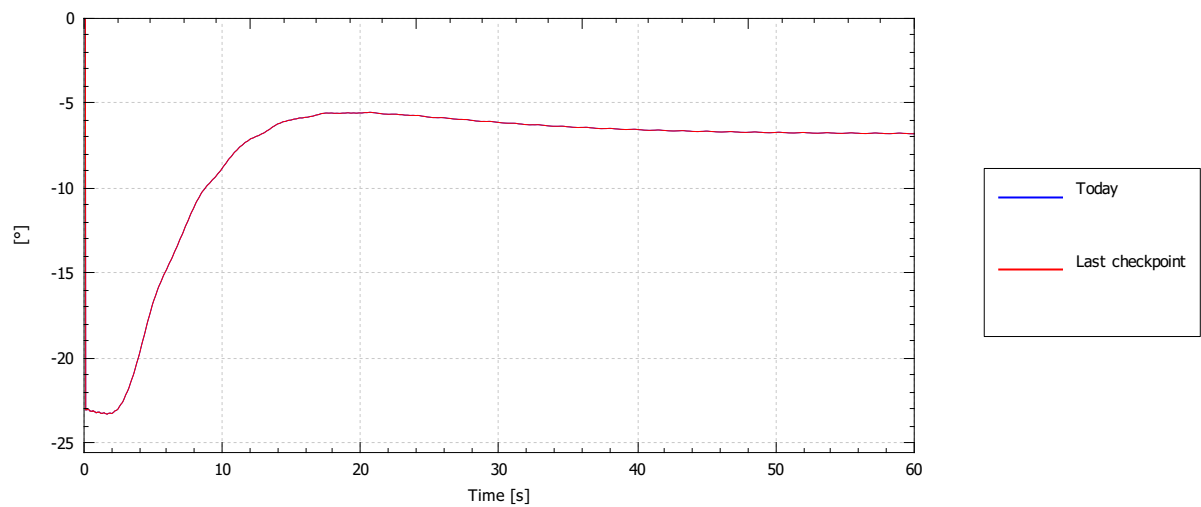
Set point



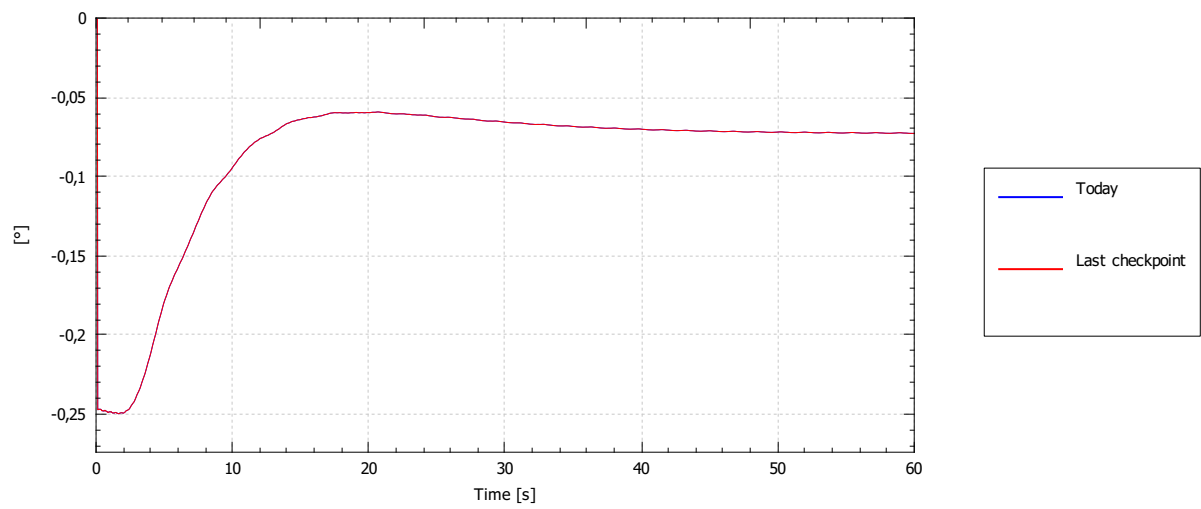
RPM error



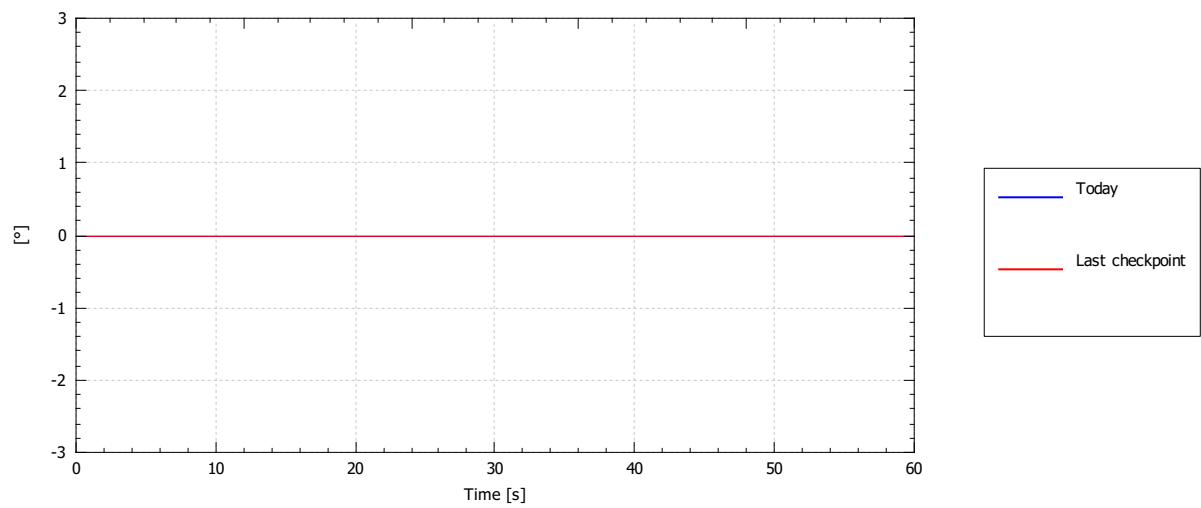
P term



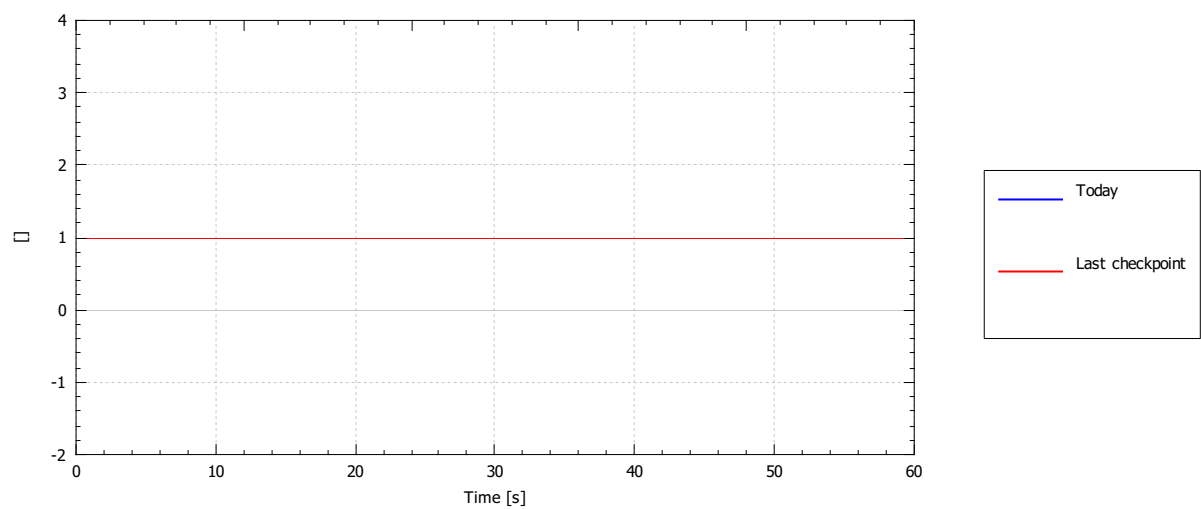
I term

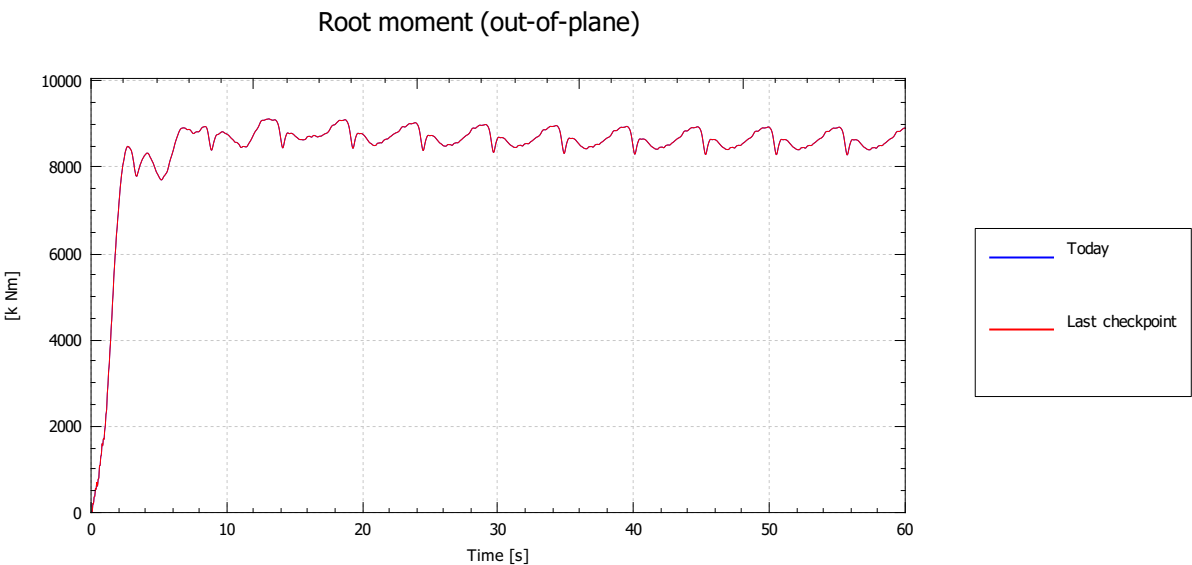
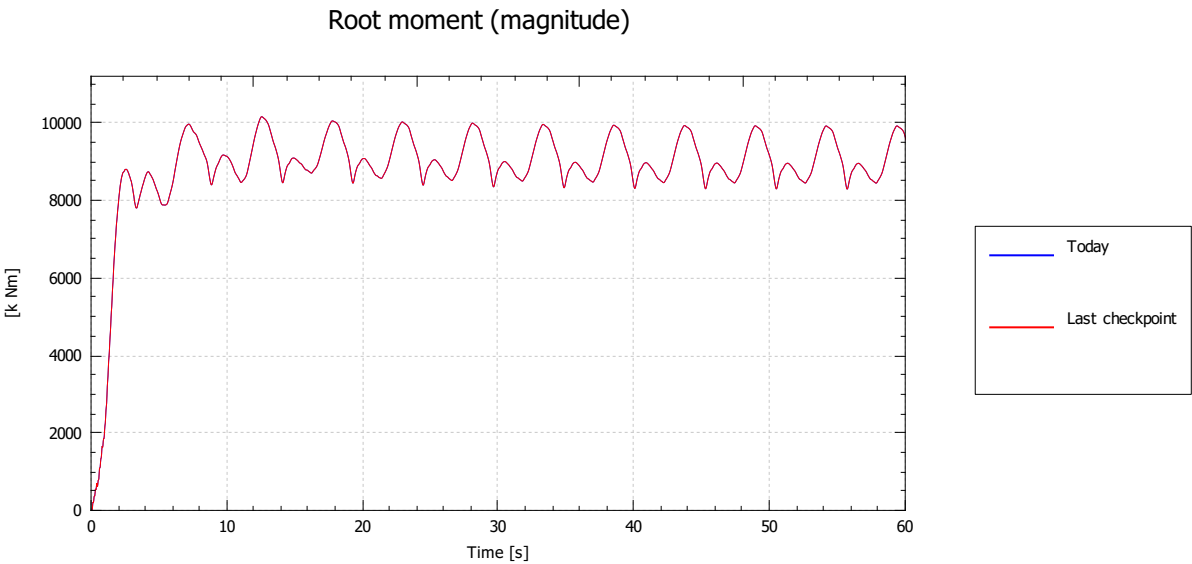
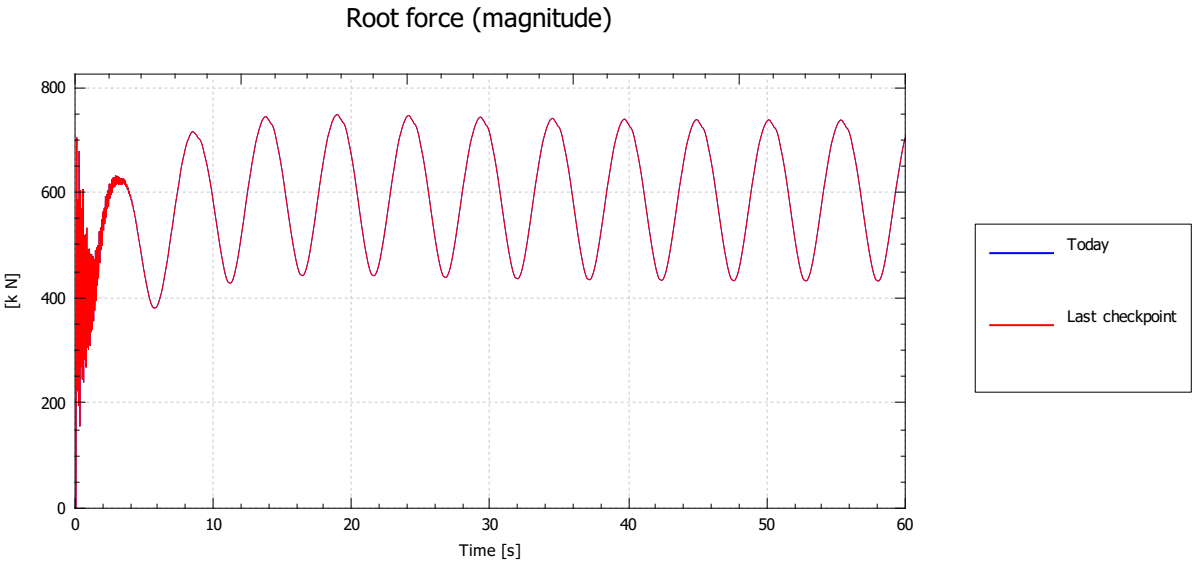


D term

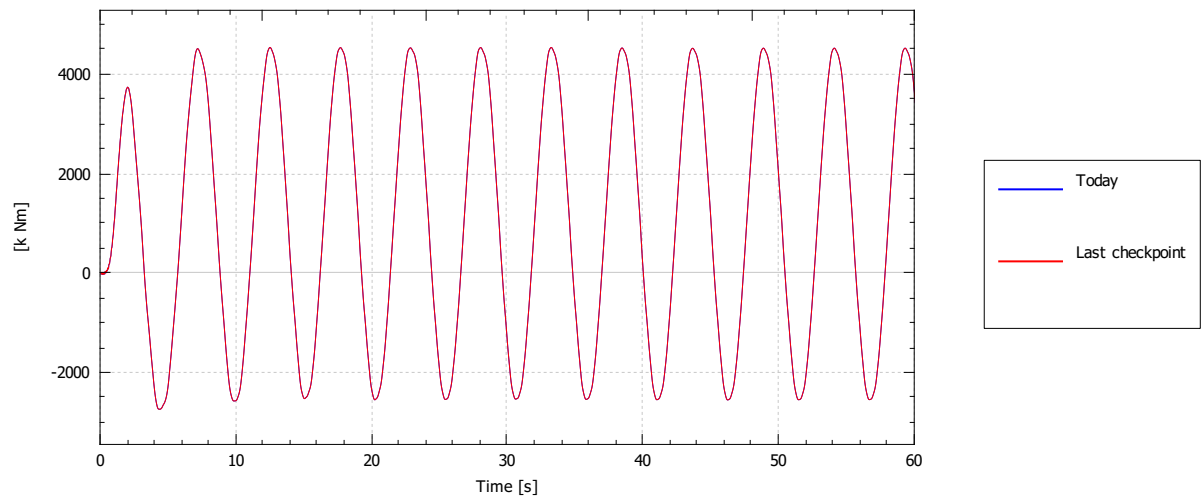


Gain scheduling factor

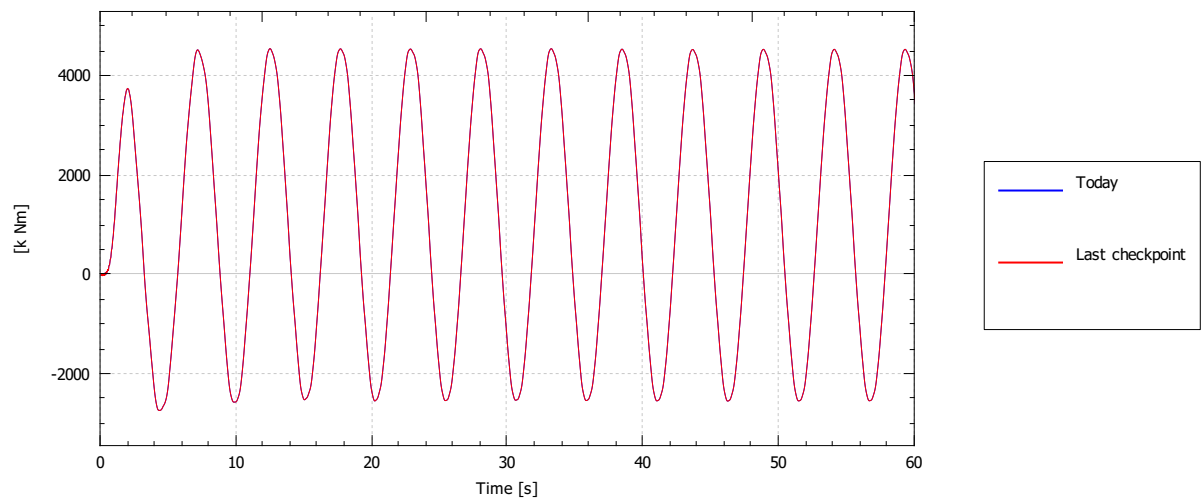




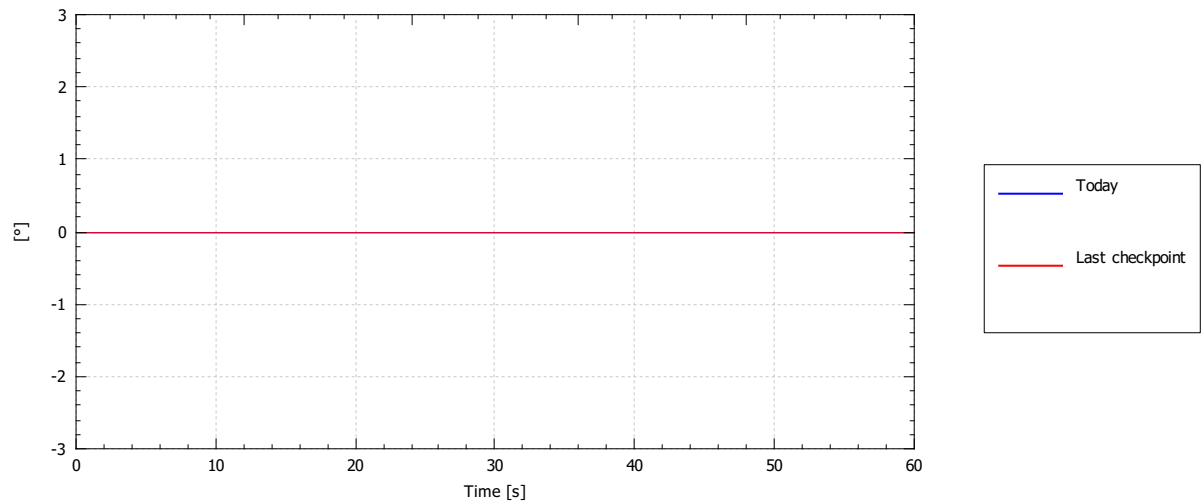
Root moment (in-plane)



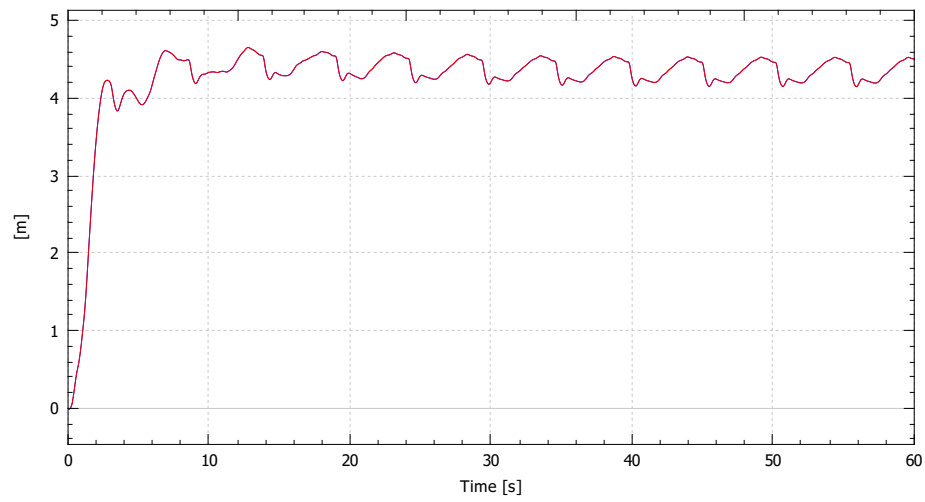
Root moment about shaft



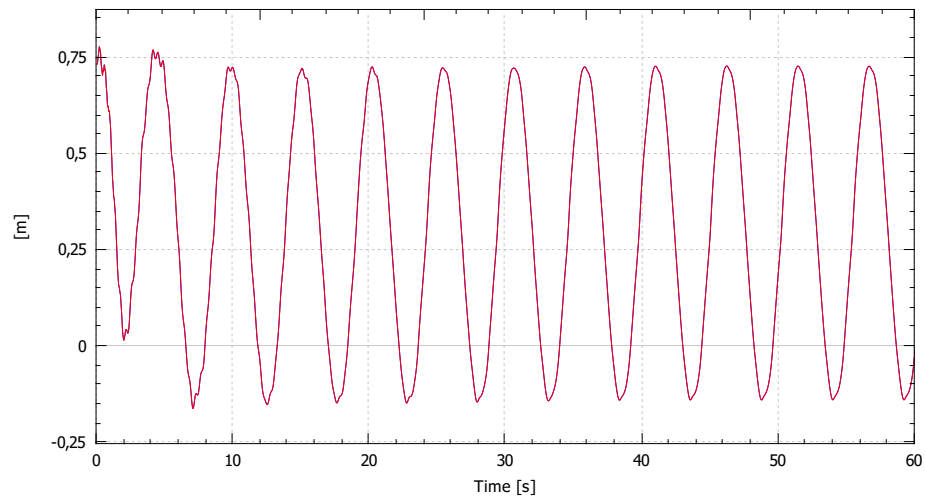
Pitch angle



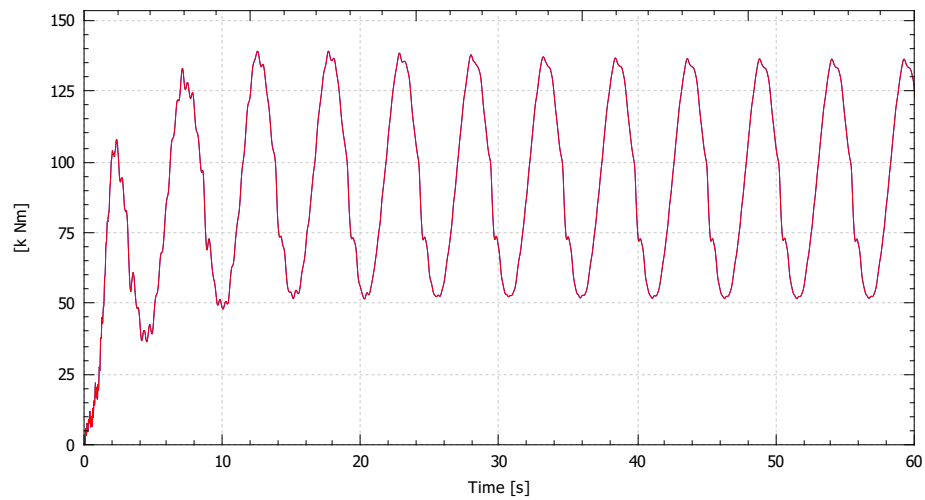
Tip deflection (out-of-plane)

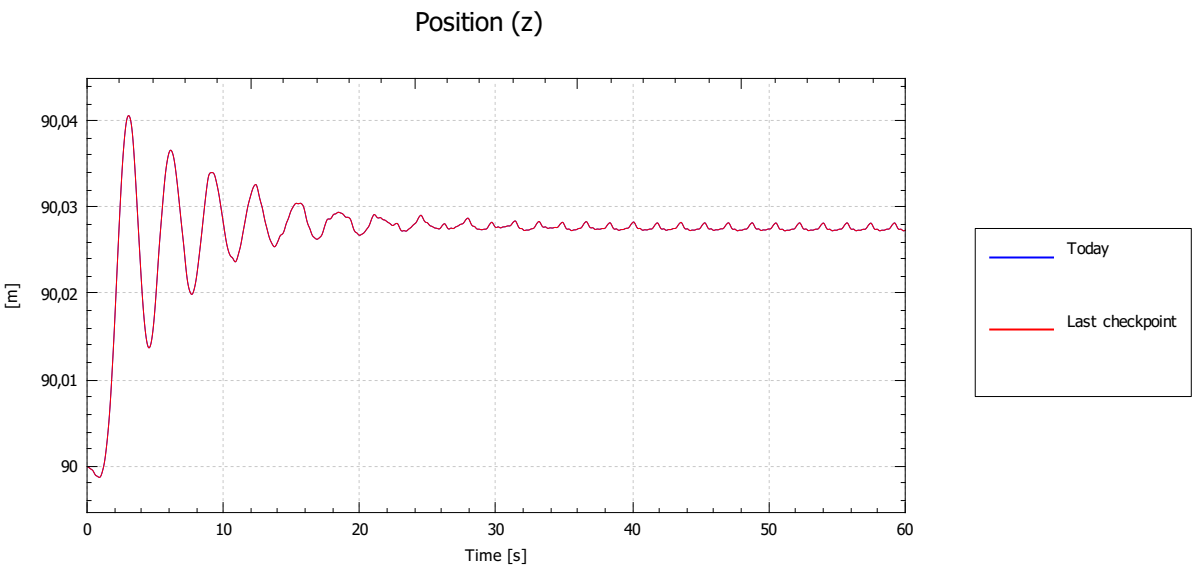
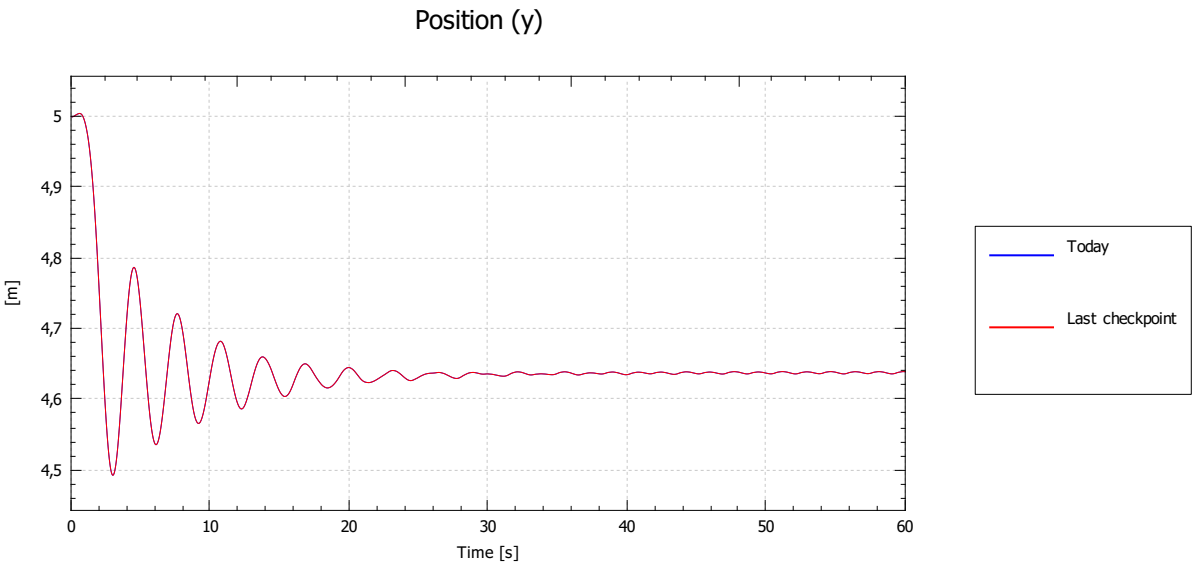
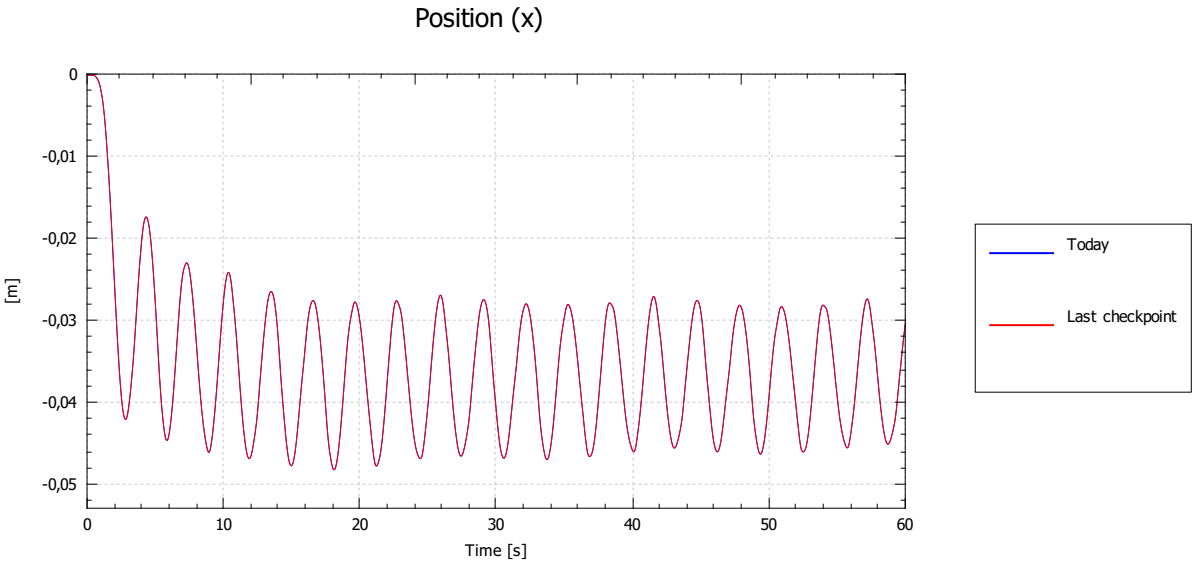


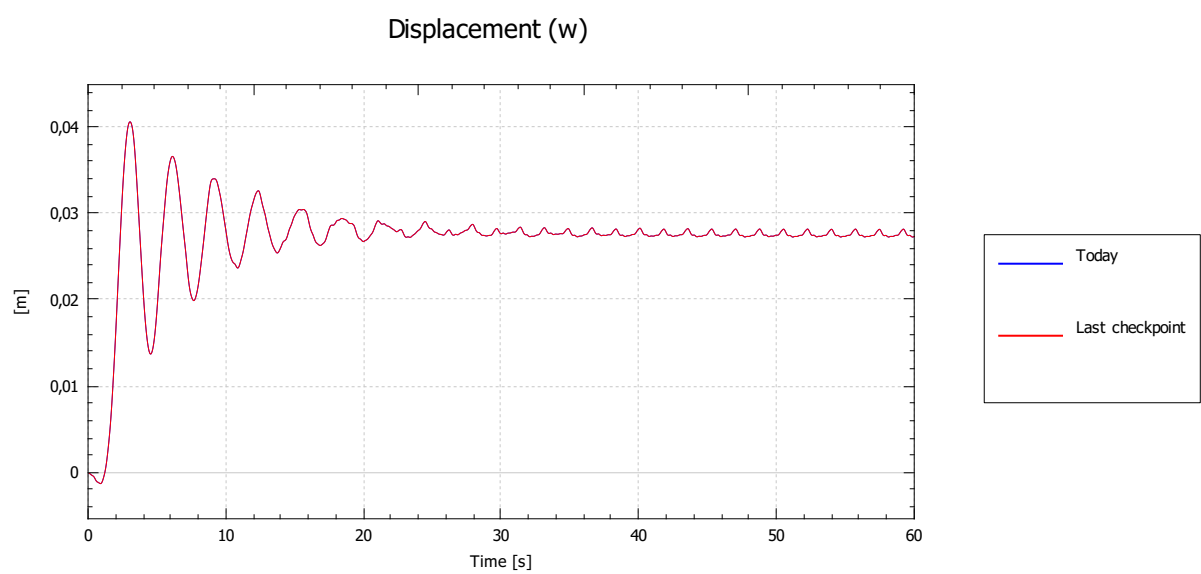
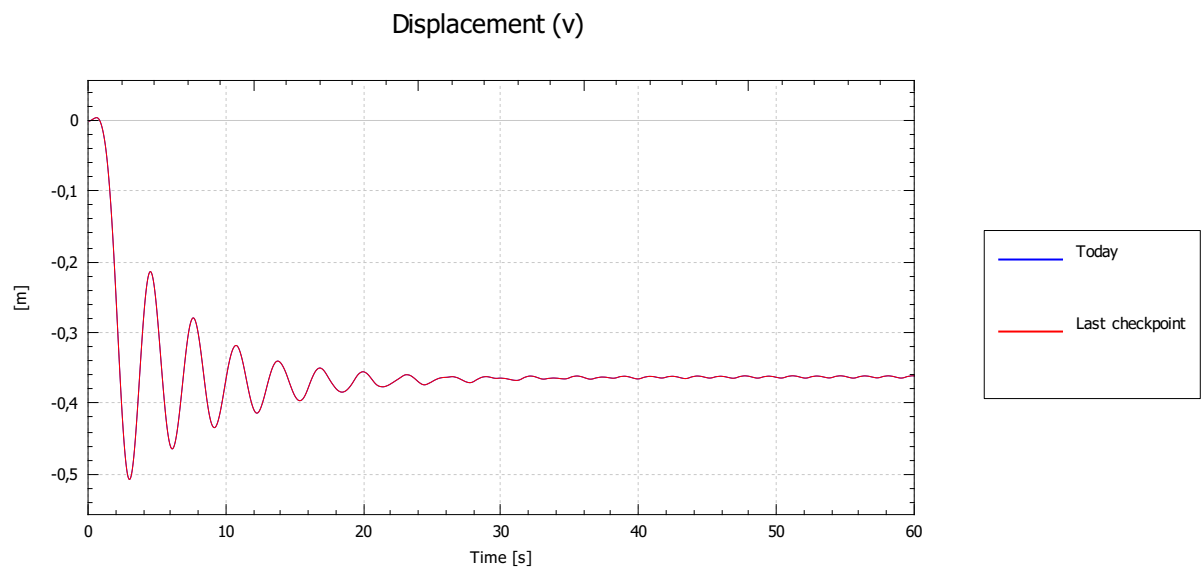
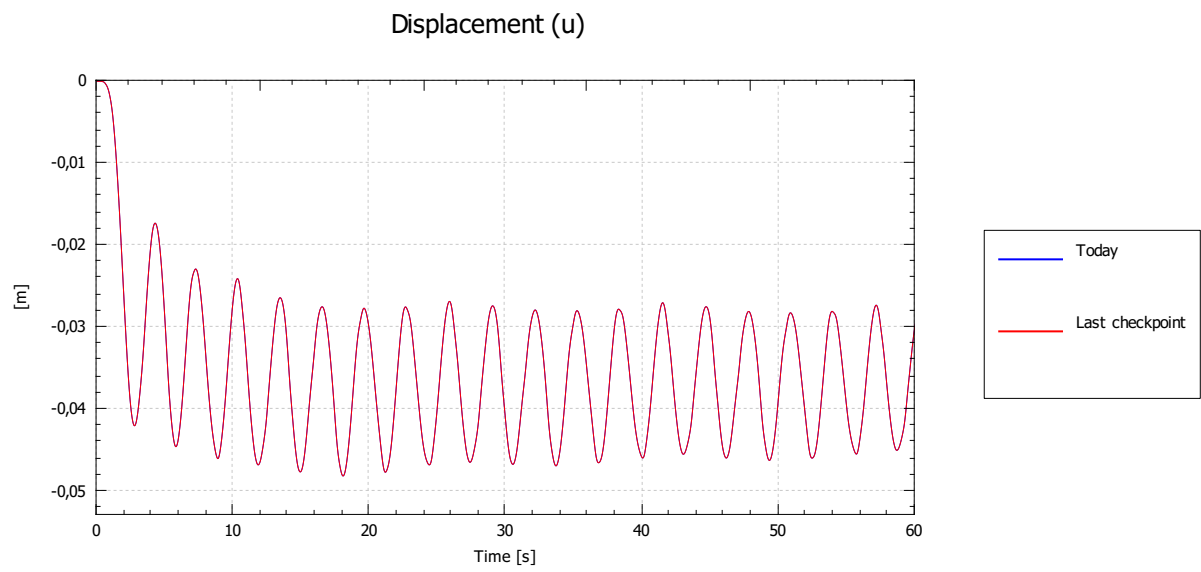
Tip deflection (in-plane)



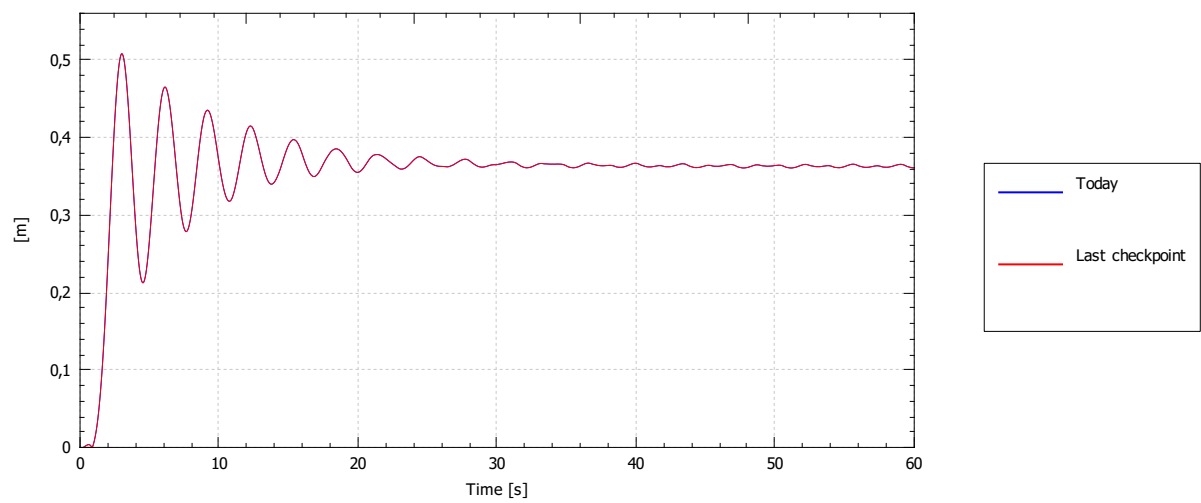
Root torque



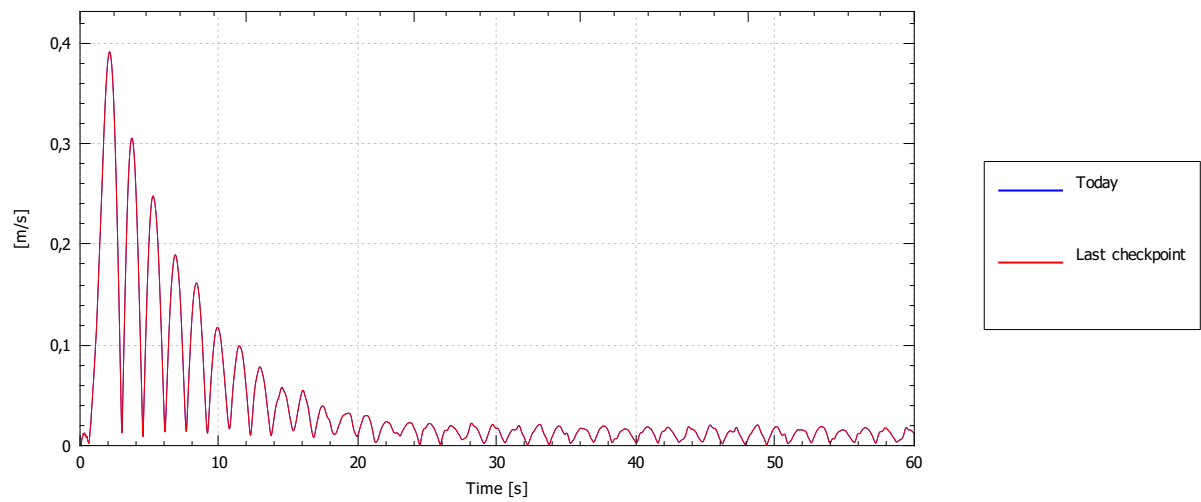




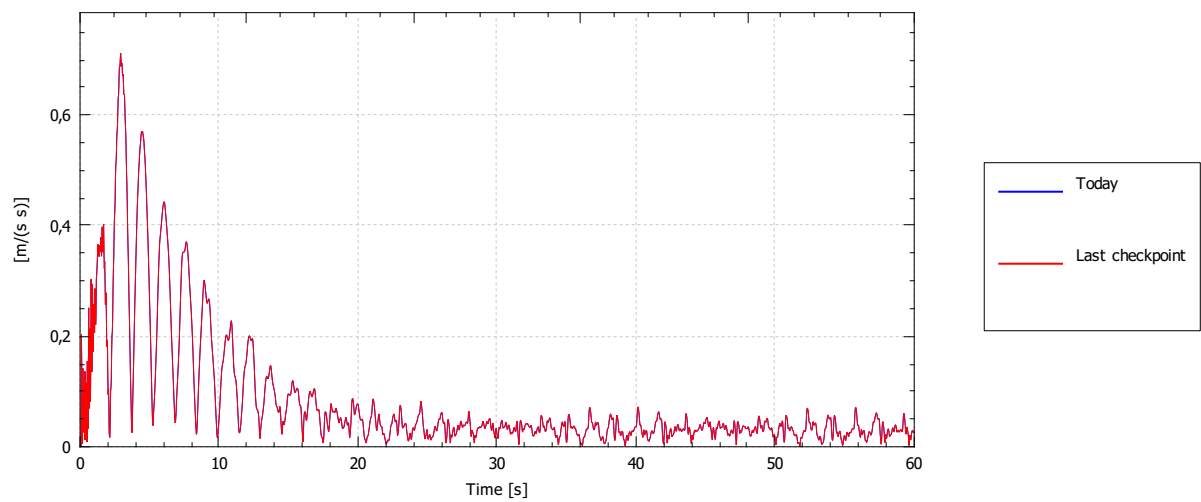
Displacement magnitude



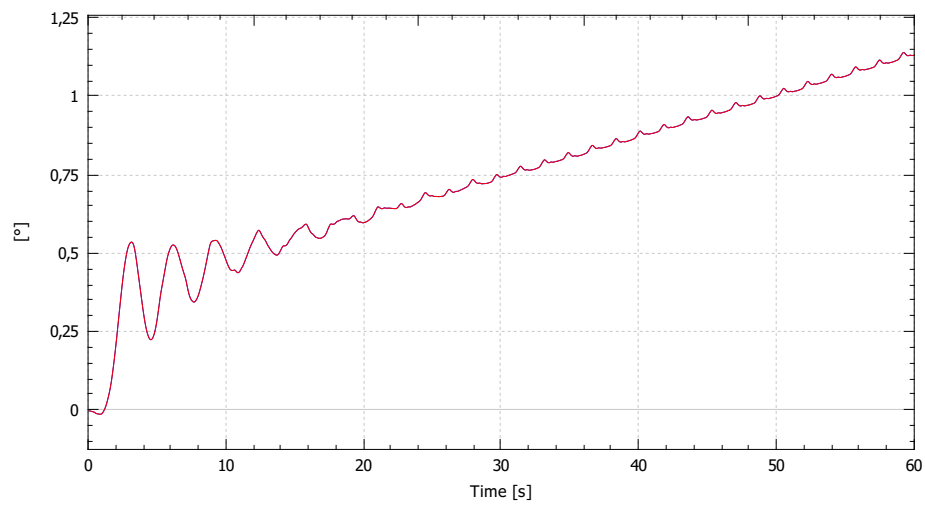
Speed



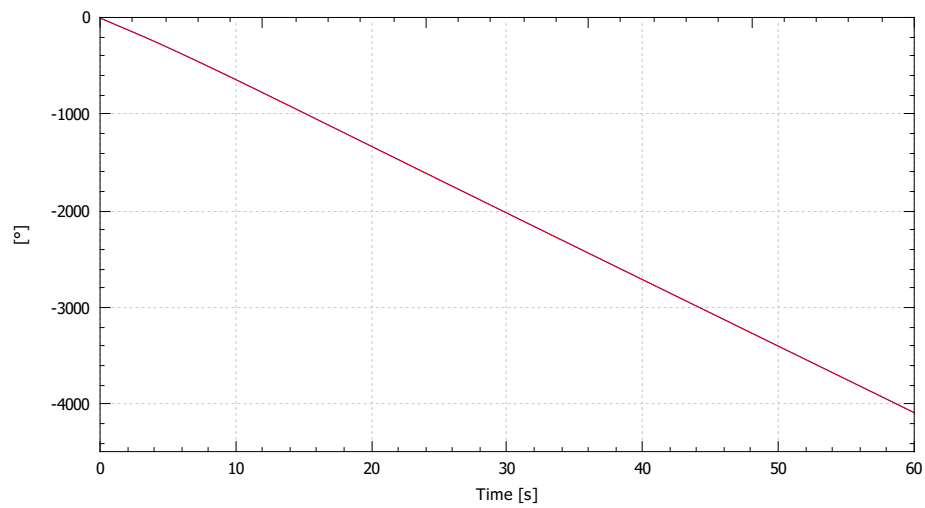
Acceleration, magnitude



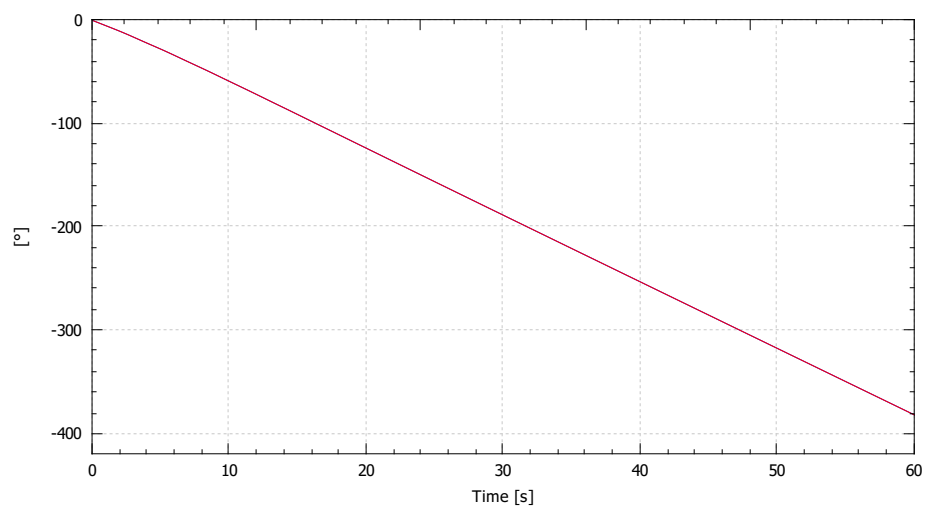
Rotational displacement (ru)



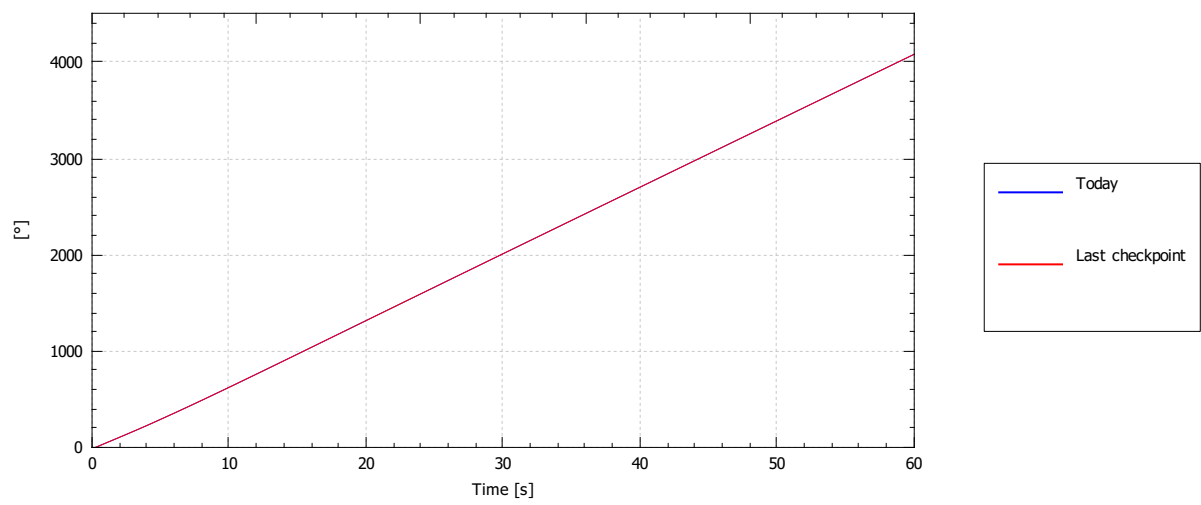
Rotational displacement (rv)



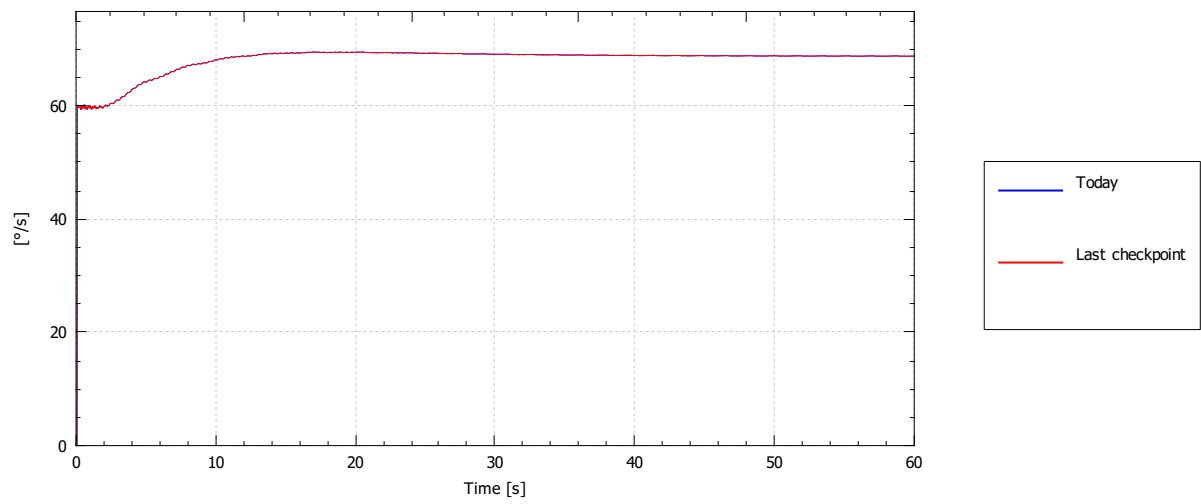
Rotational displacement (rw)



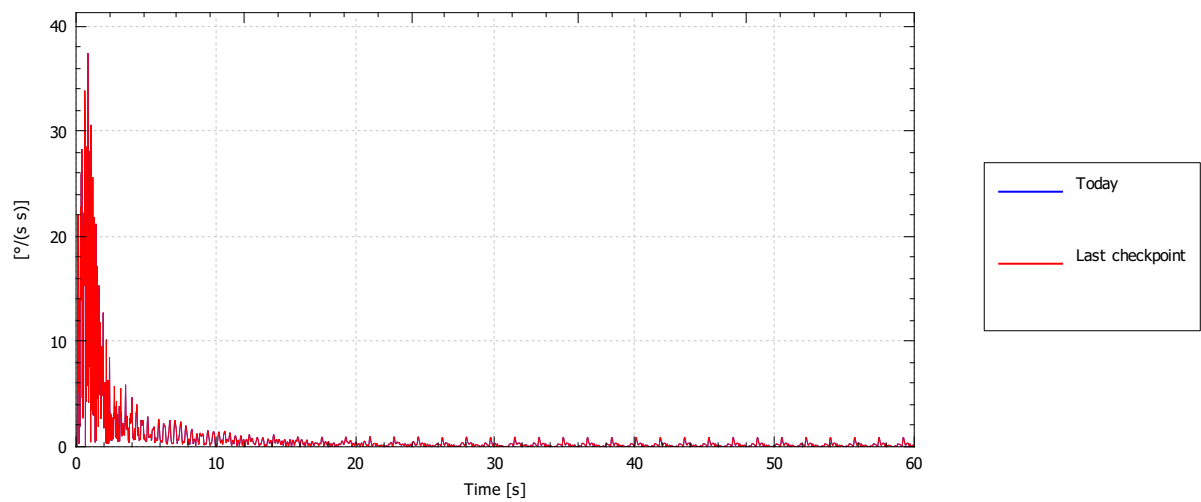
Rotational displacement magnitude



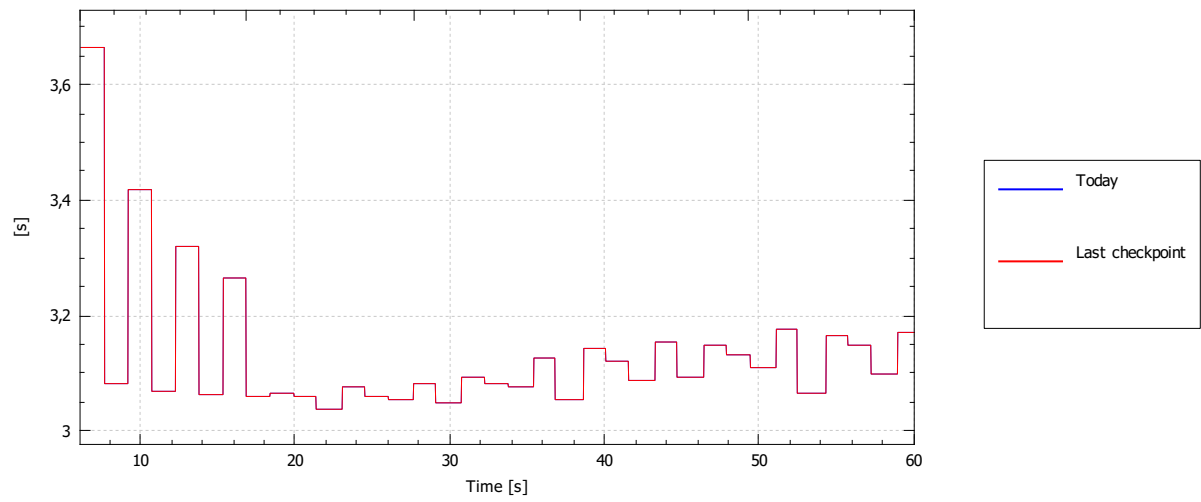
Rotational speed



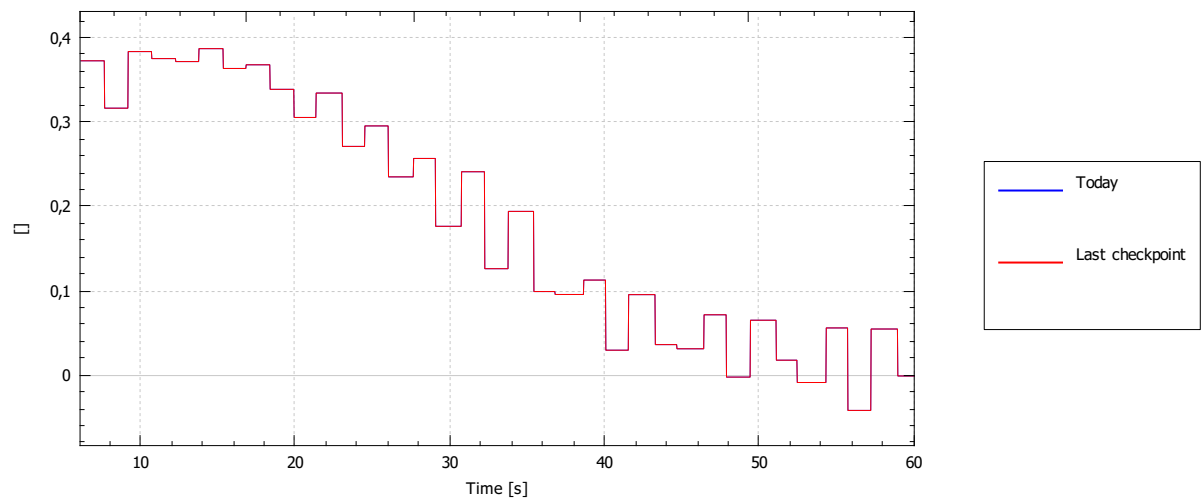
Rotational acceleration mag



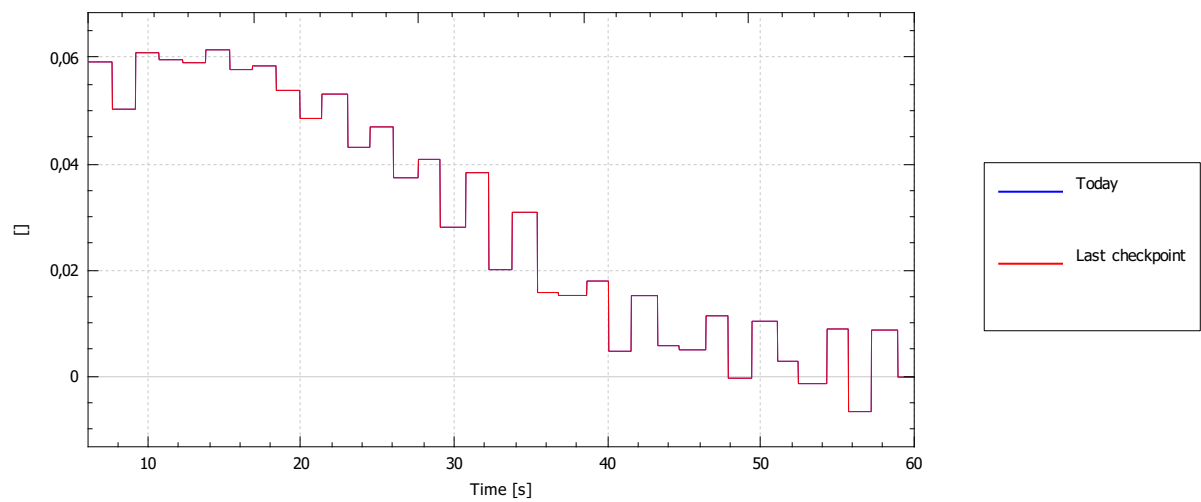
Displacement period



Displacement logarithmic decrement

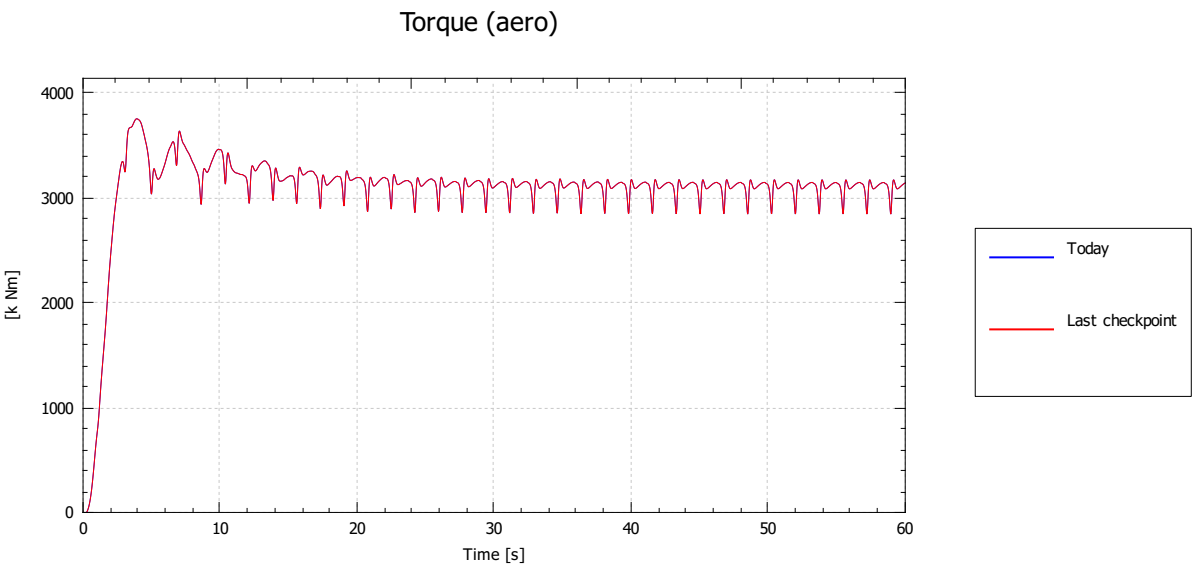
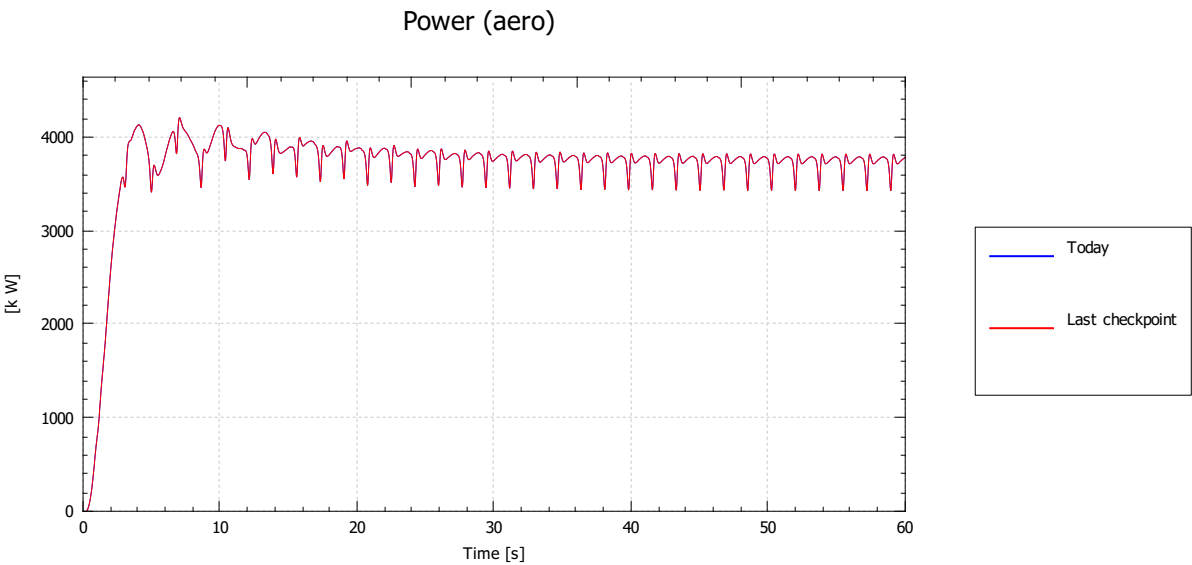


Displacement damping ratio

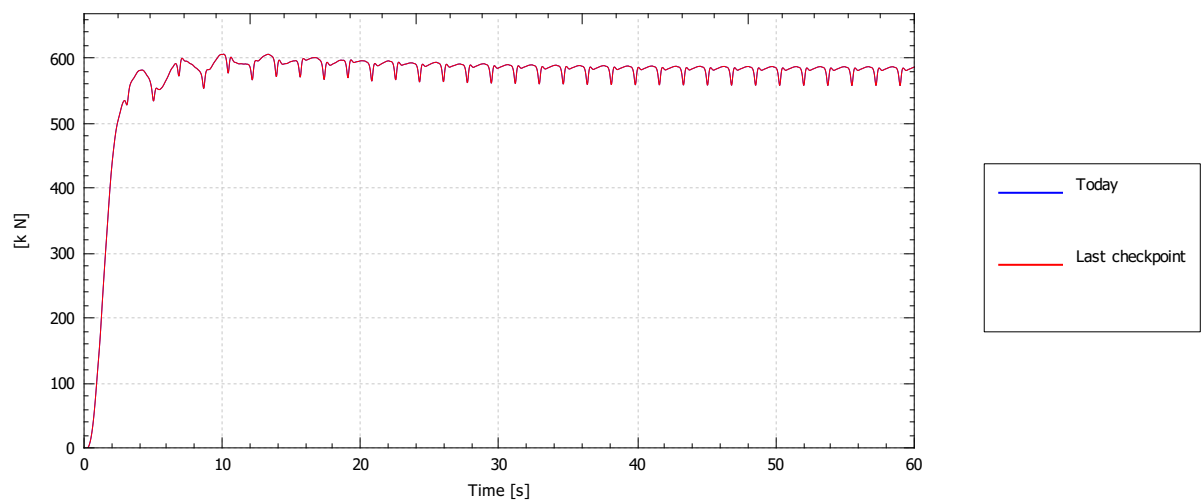


Load case: Target Cp

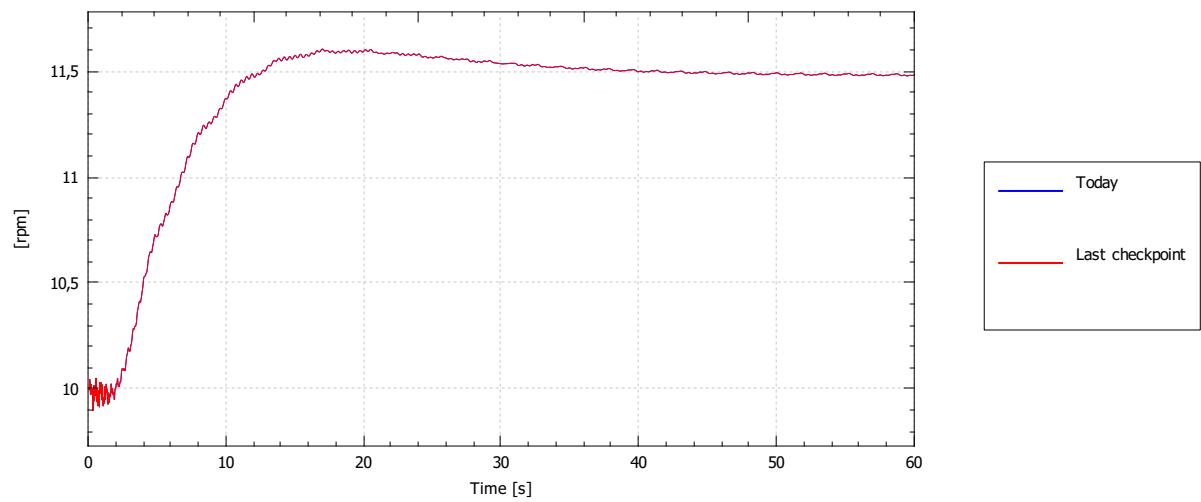
Rotor



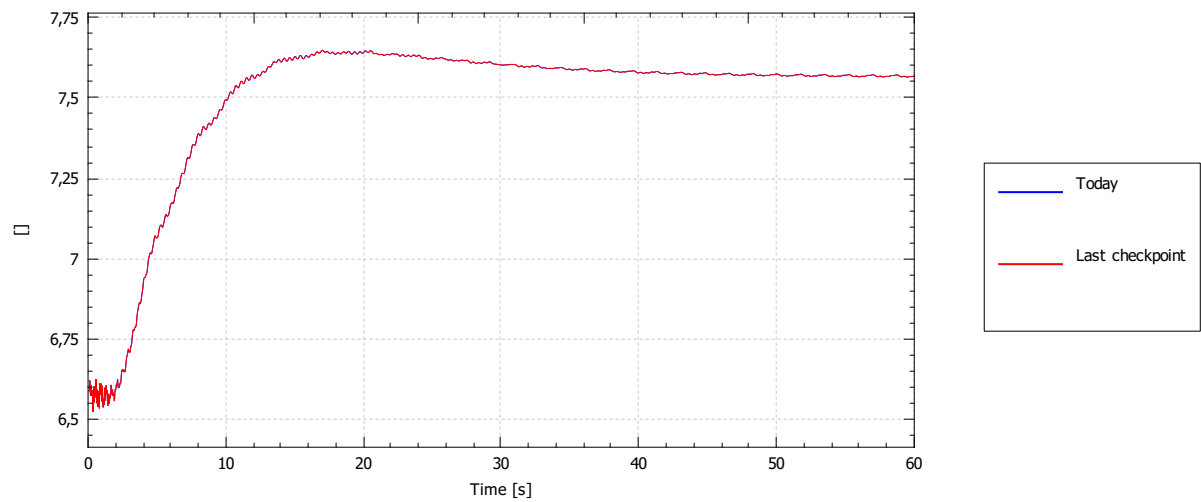
Thrust (aero)



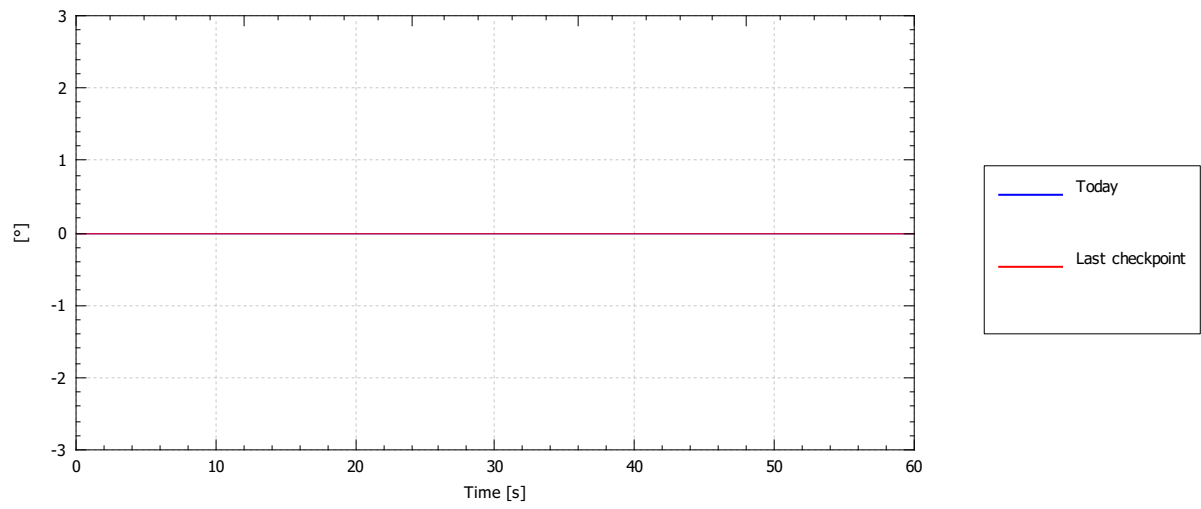
RPM



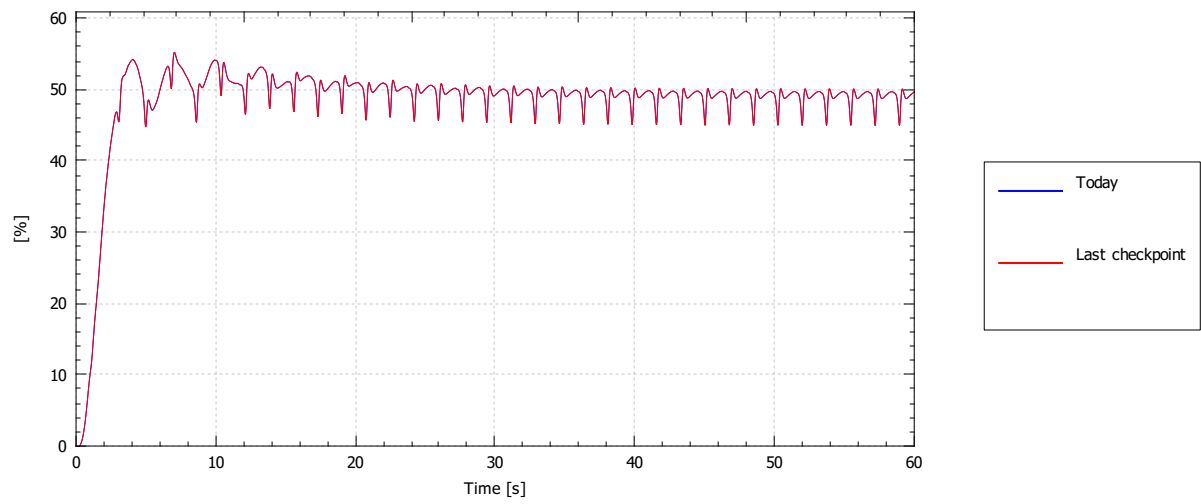
TSR



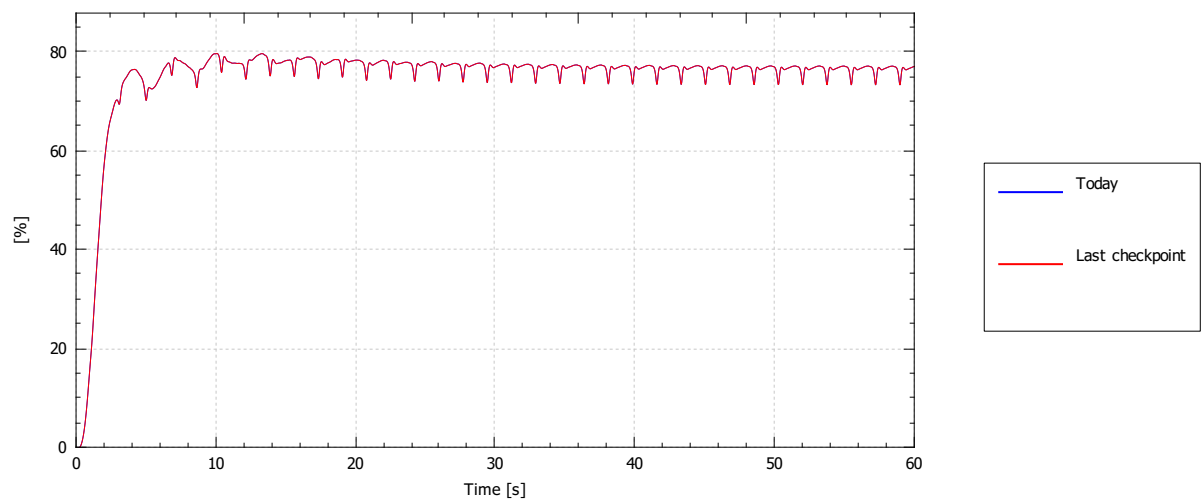
Representative demanded pitch angle



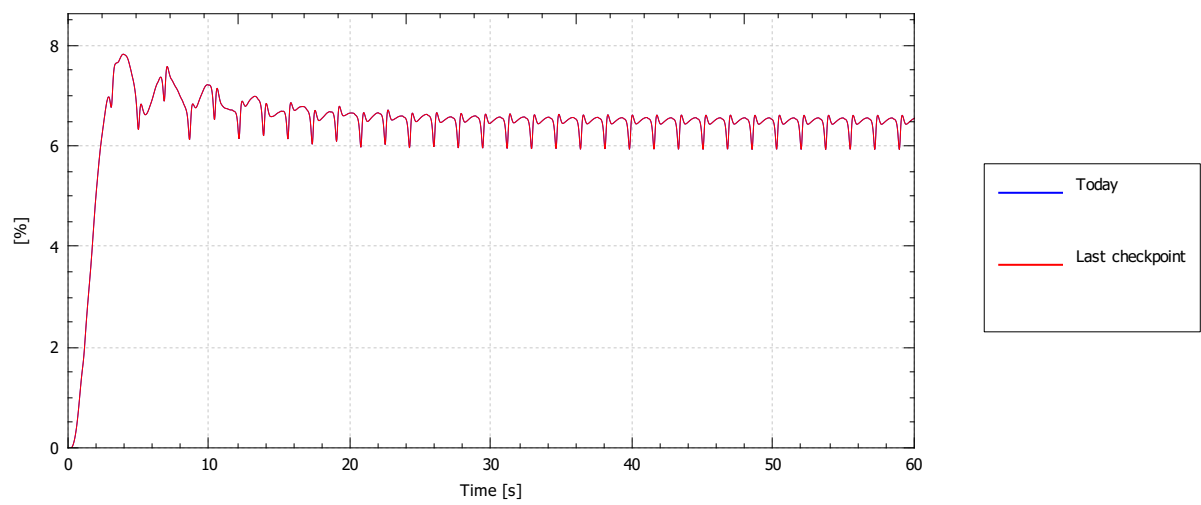
Power coef. (CP)



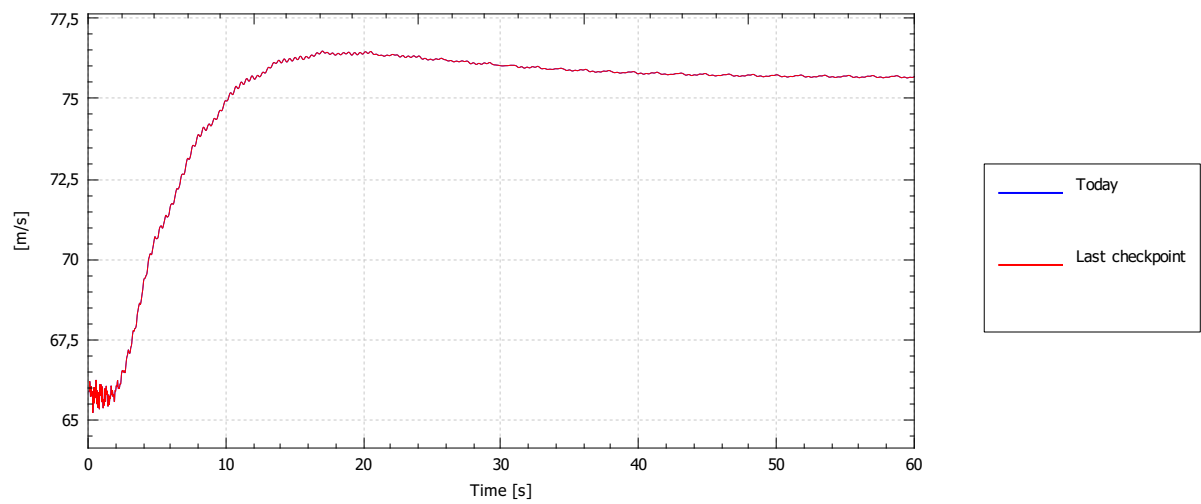
Thrust coef. (CT)



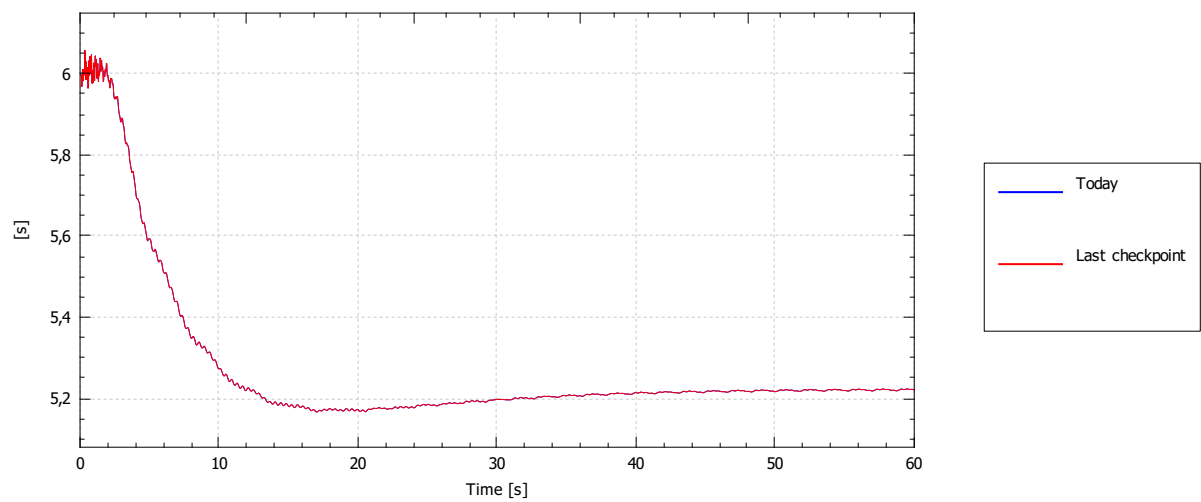
Torque coef. (CQ)



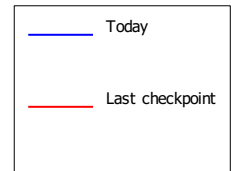
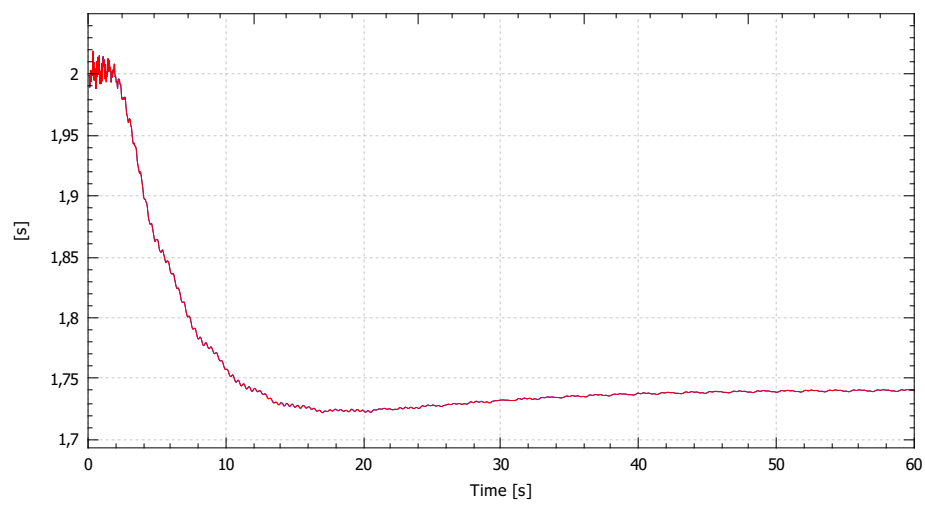
Tip speed



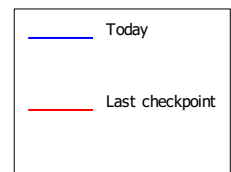
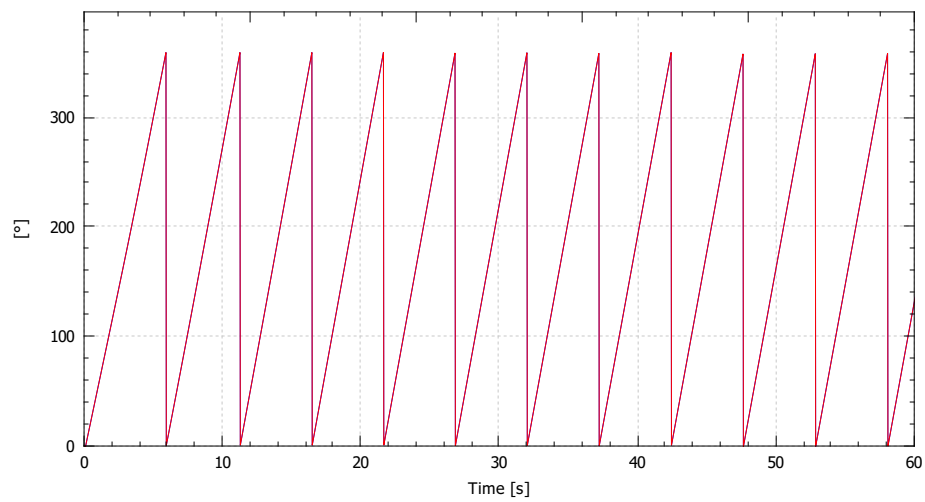
1P (one revolution)



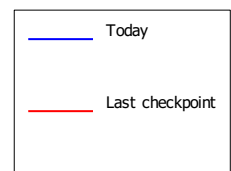
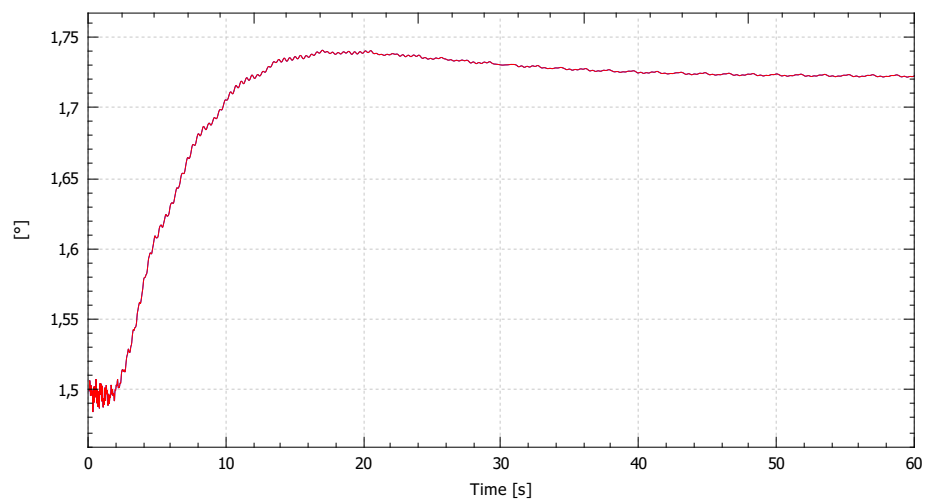
nP (blade passing)



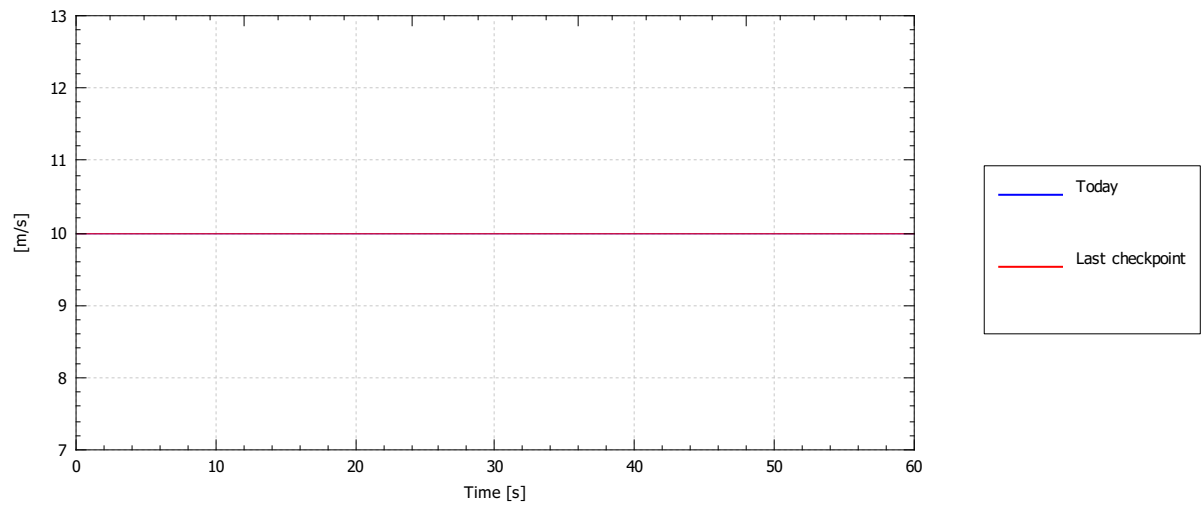
Azimuth angle



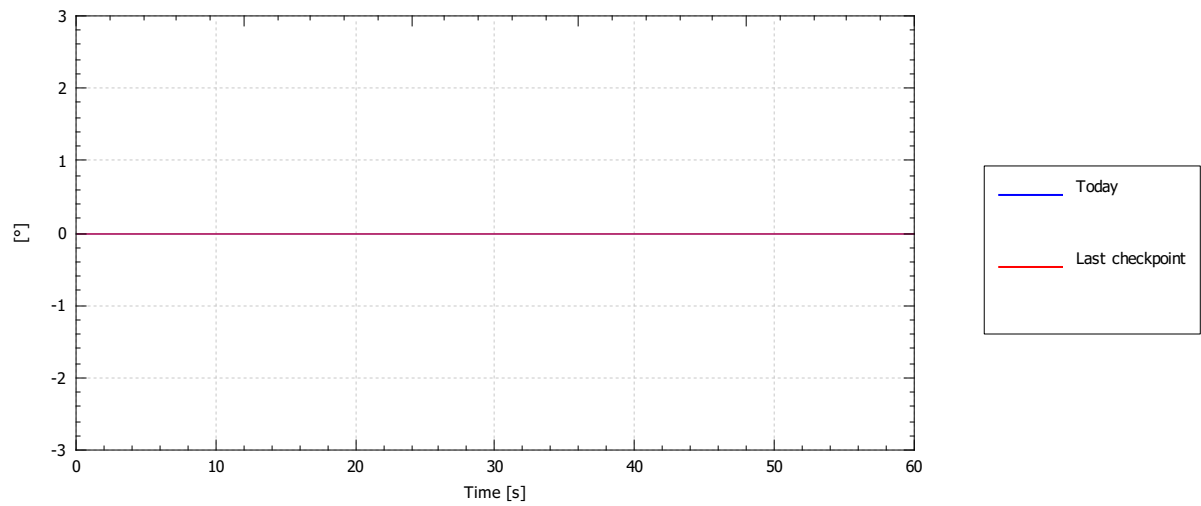
Rotation per timestep



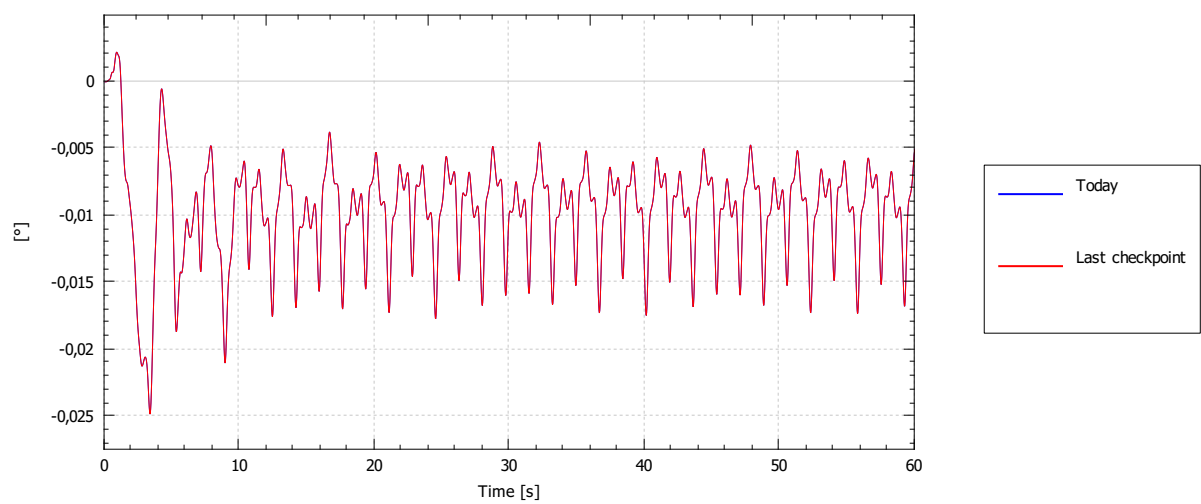
Wind speed at hub, magnitude



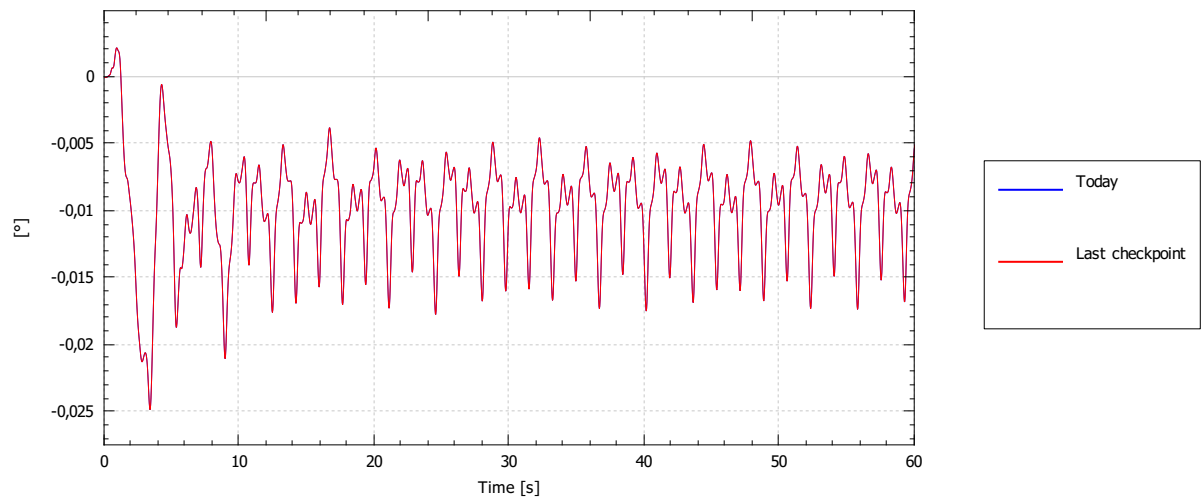
Wind angle at hub



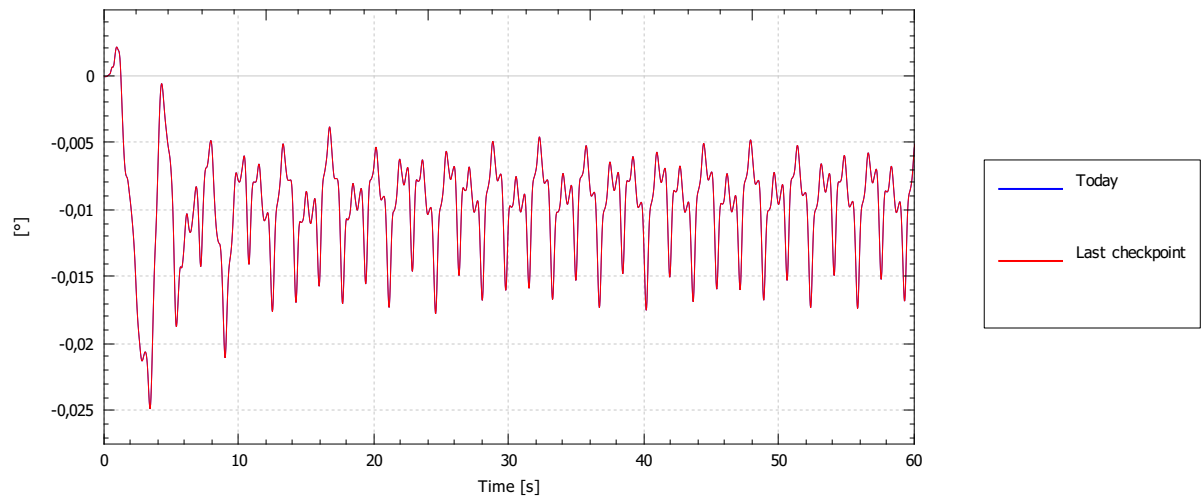
Yaw angle relative to forward



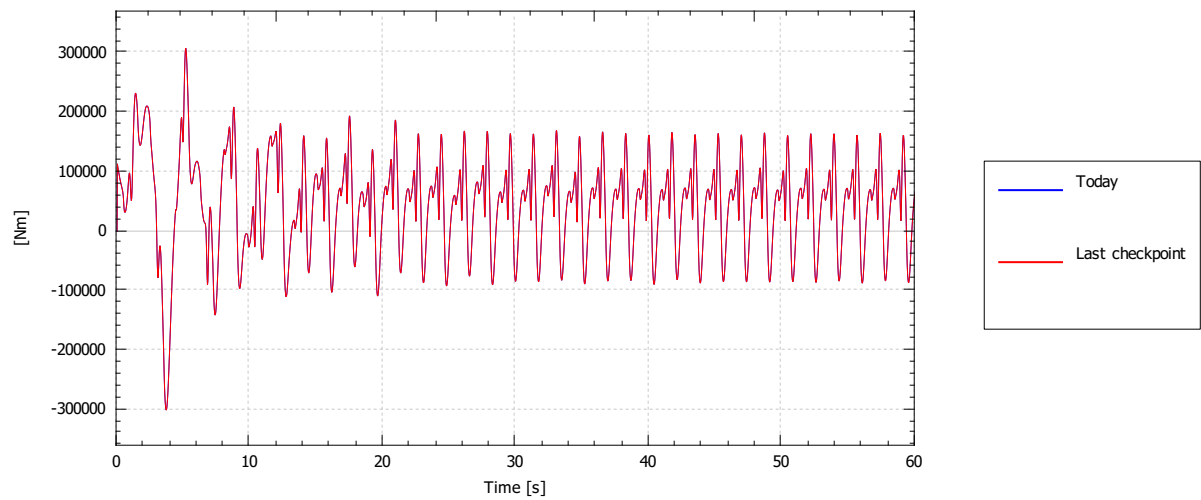
Yaw angle to reference direction



Yaw error

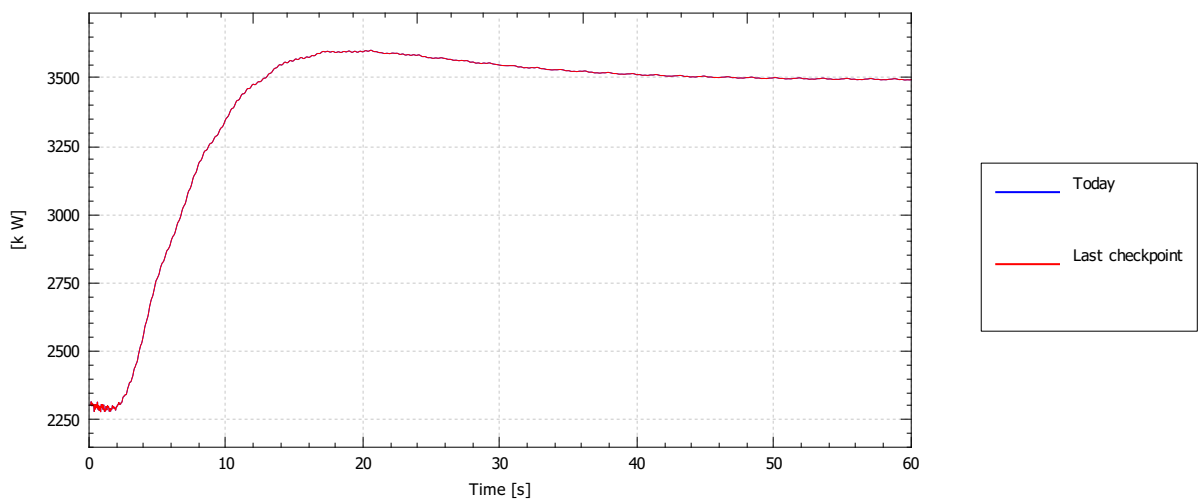


Torque about yaw axis

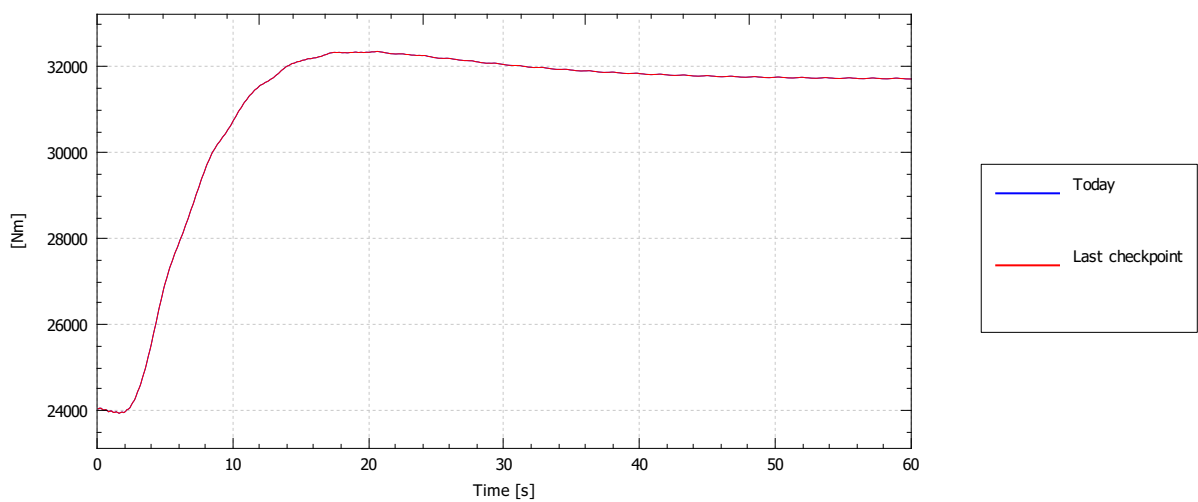


Generator

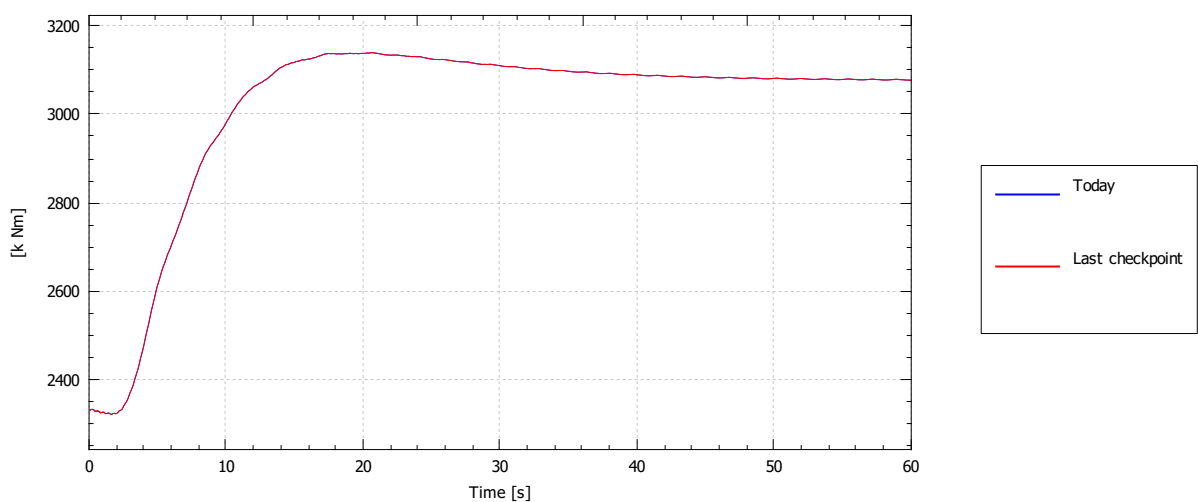
Power (electrical)



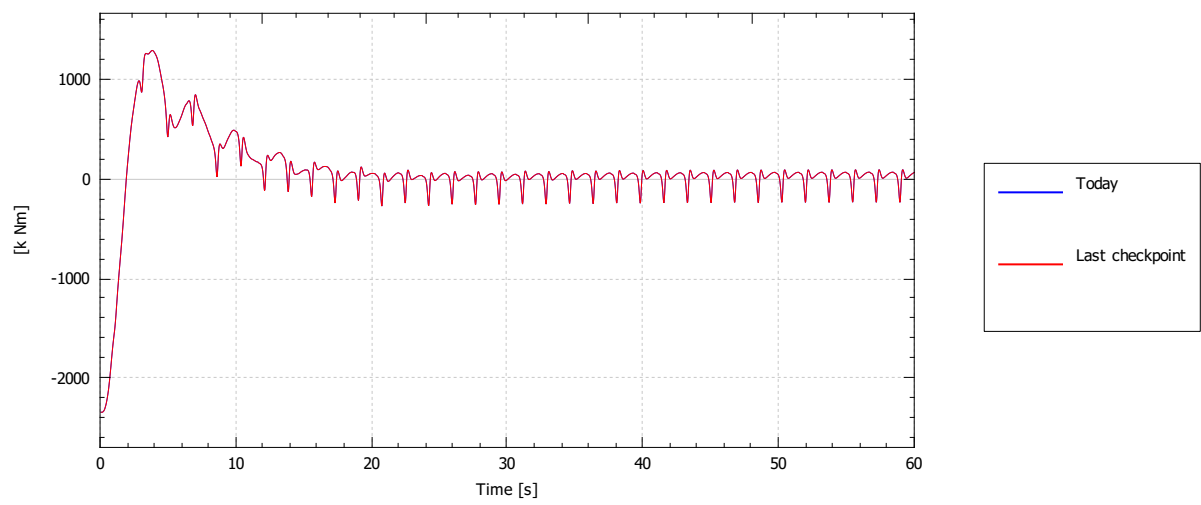
Torque



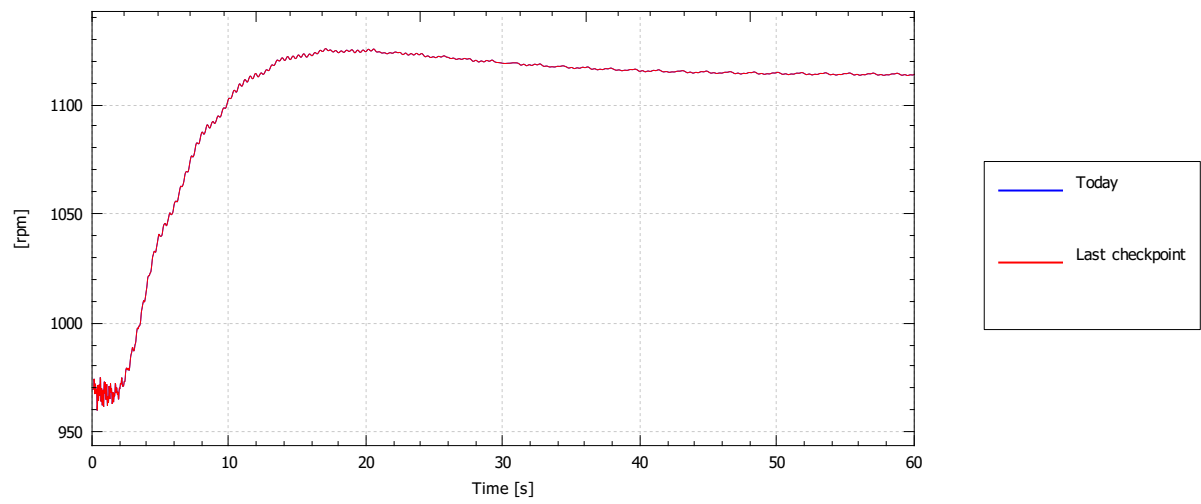
Torque on main shaft



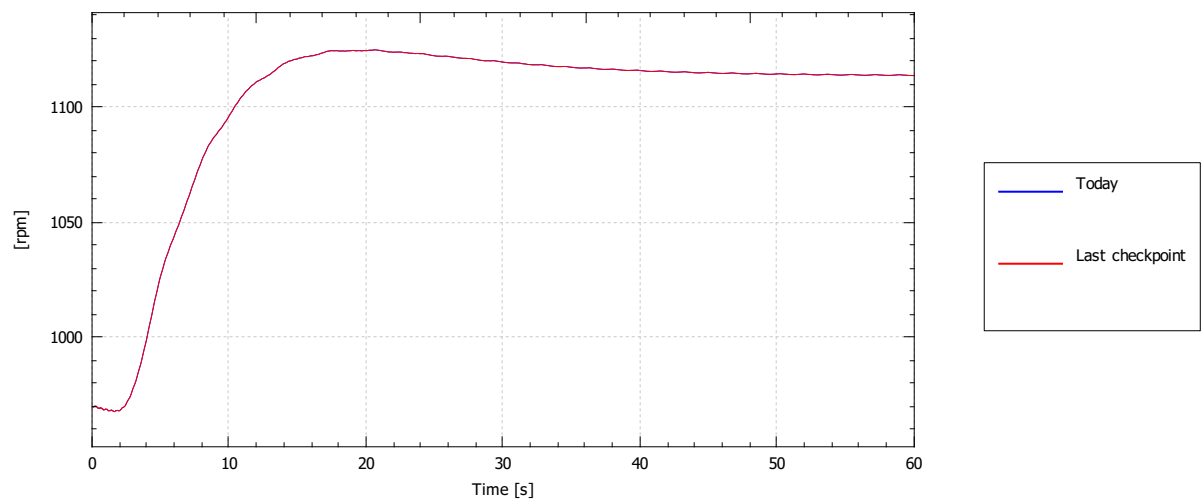
Torque diff. on main shaft



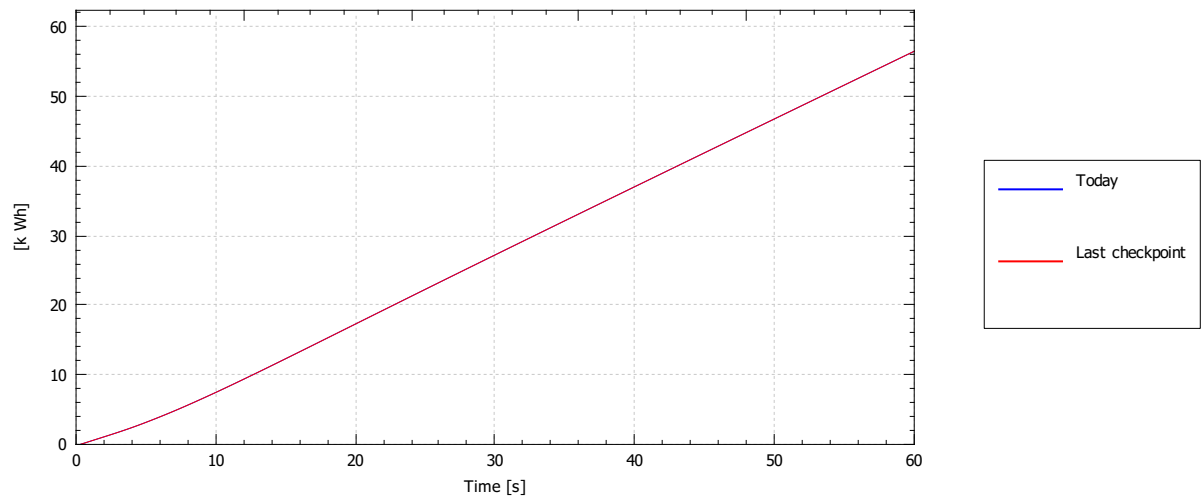
RPM



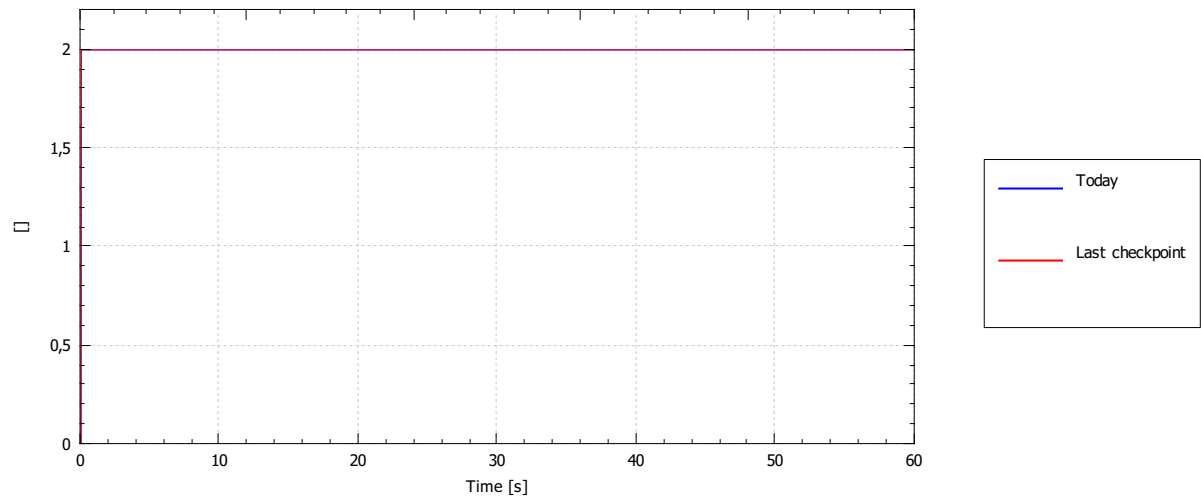
Filtered RPM



Electricity production

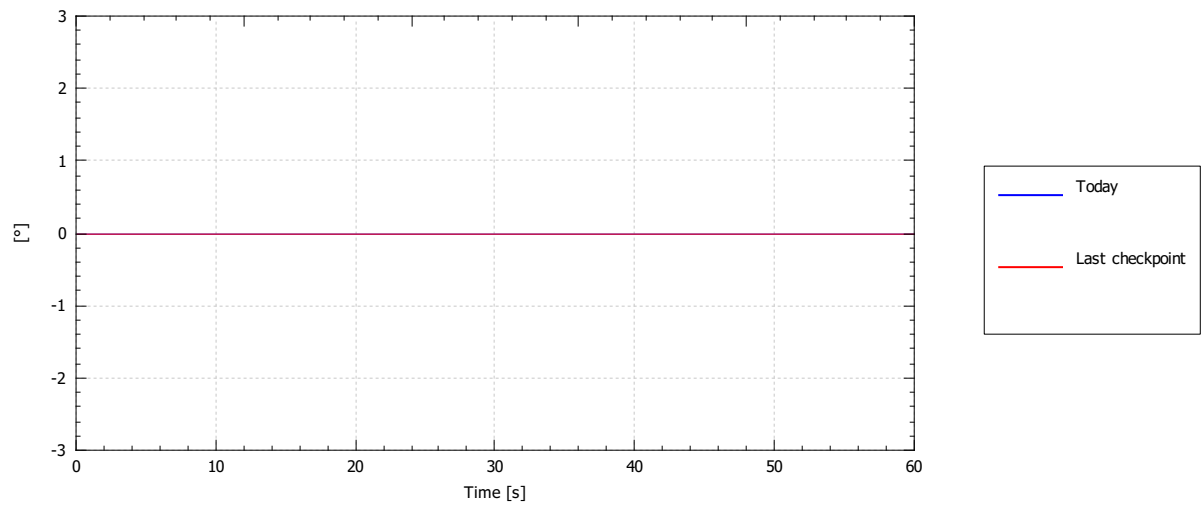


Region

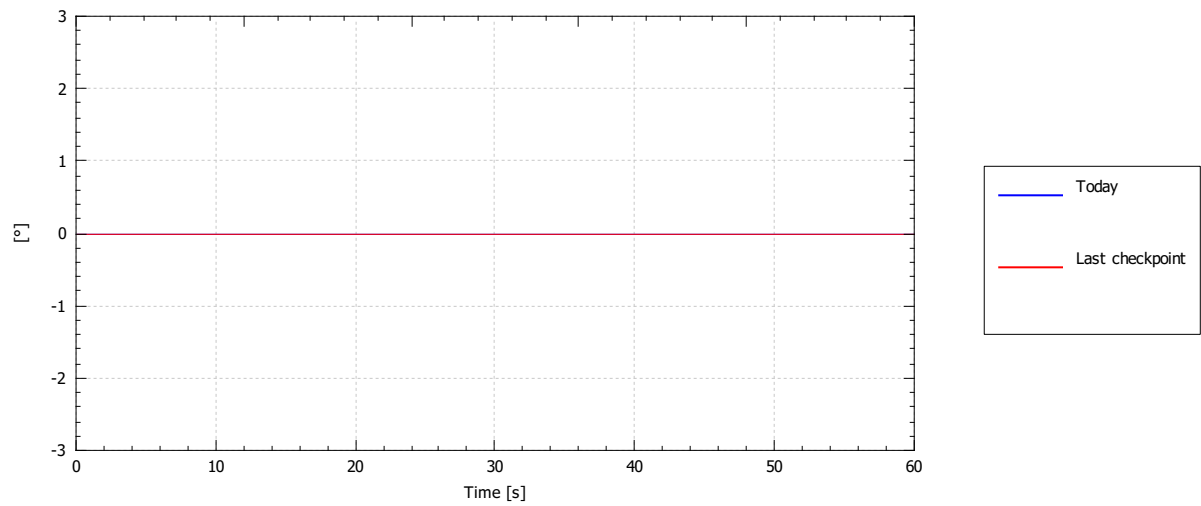


Demanded pitch controller

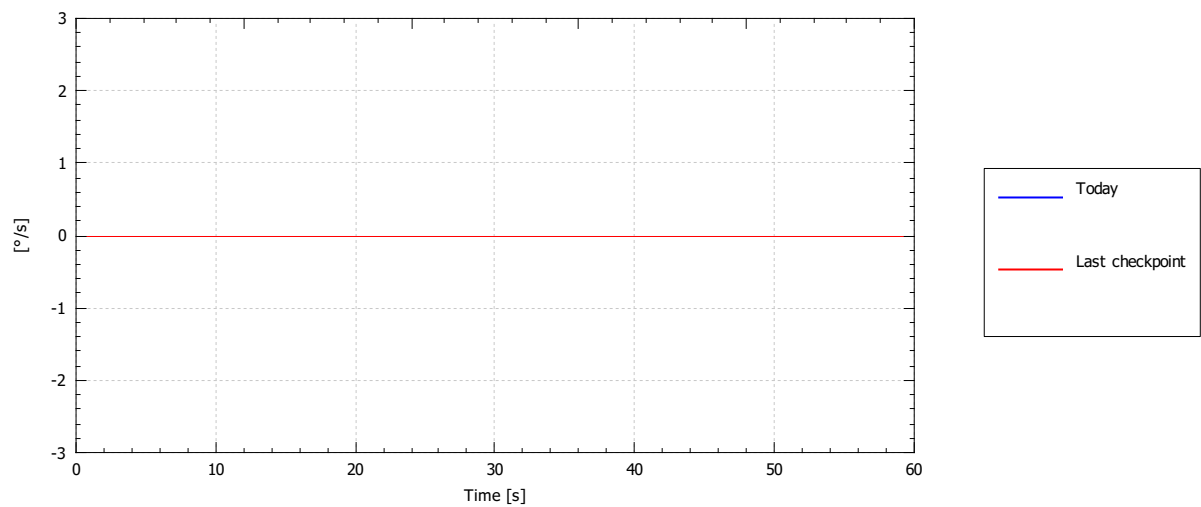
Demanded collective pitch angle



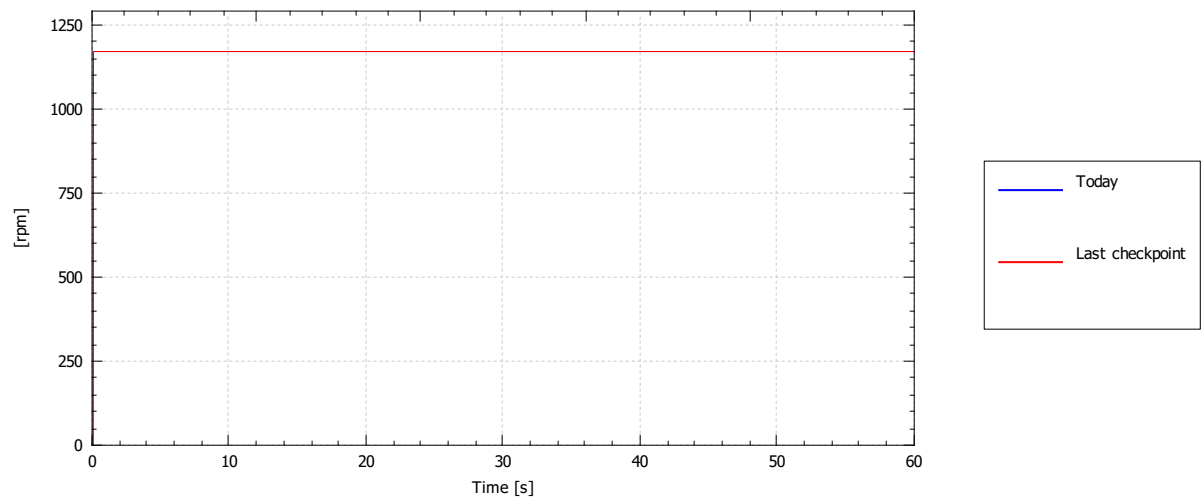
Cumulative demanded collective pitch angle



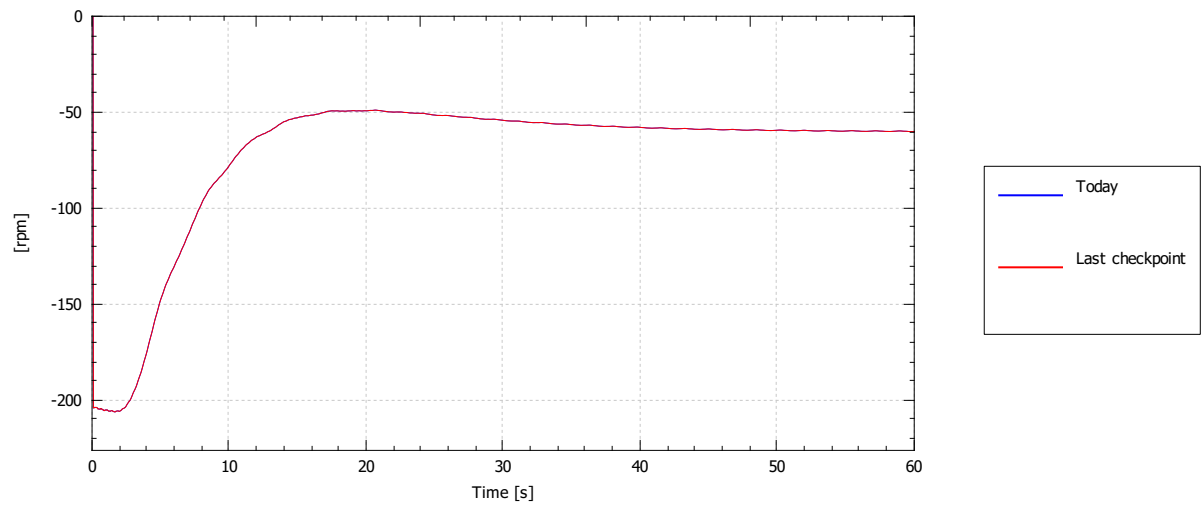
Demanded collective pitch angle rate



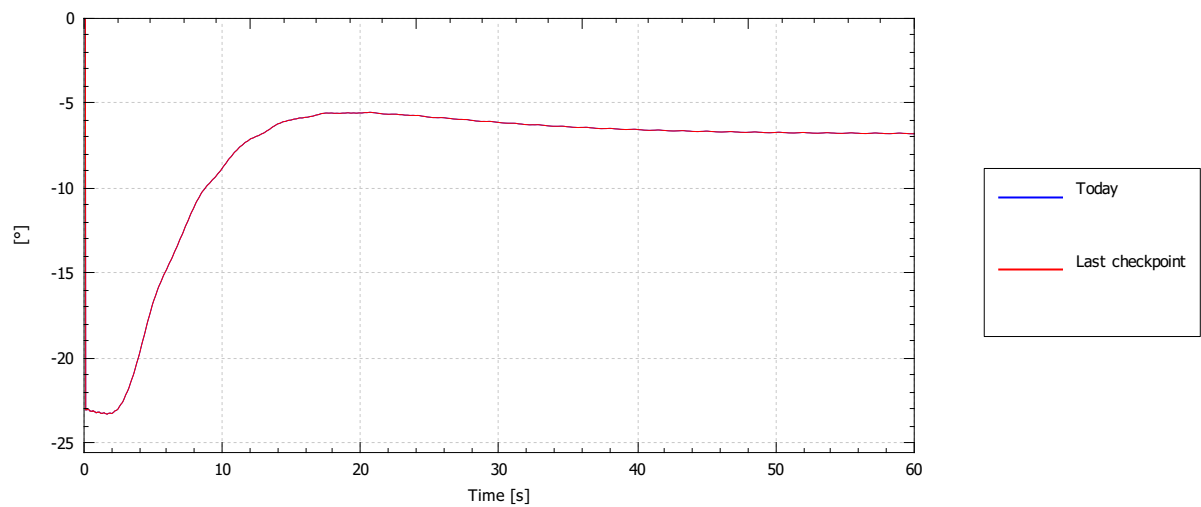
Set point



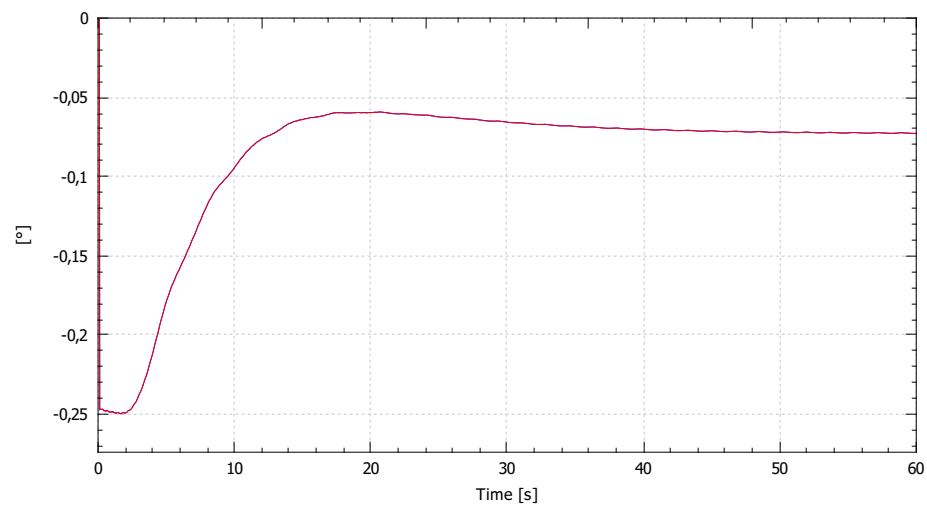
RPM error



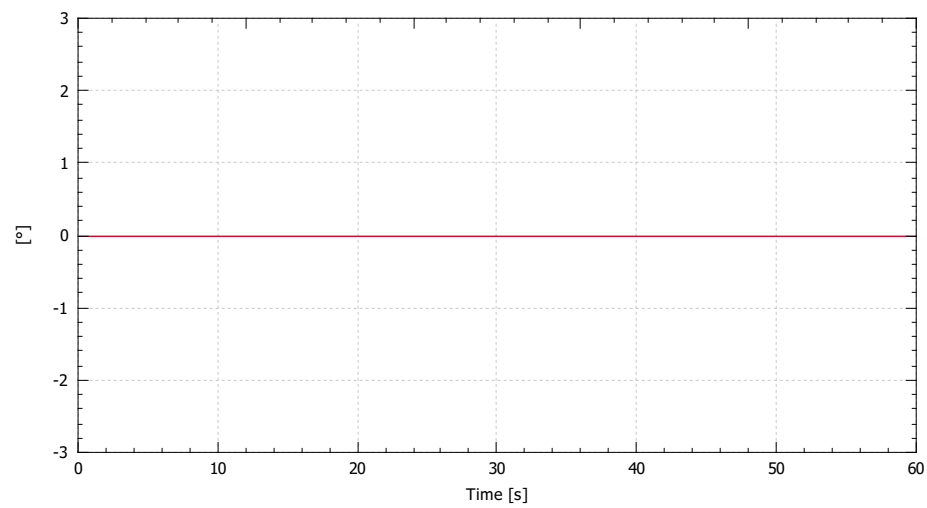
P term



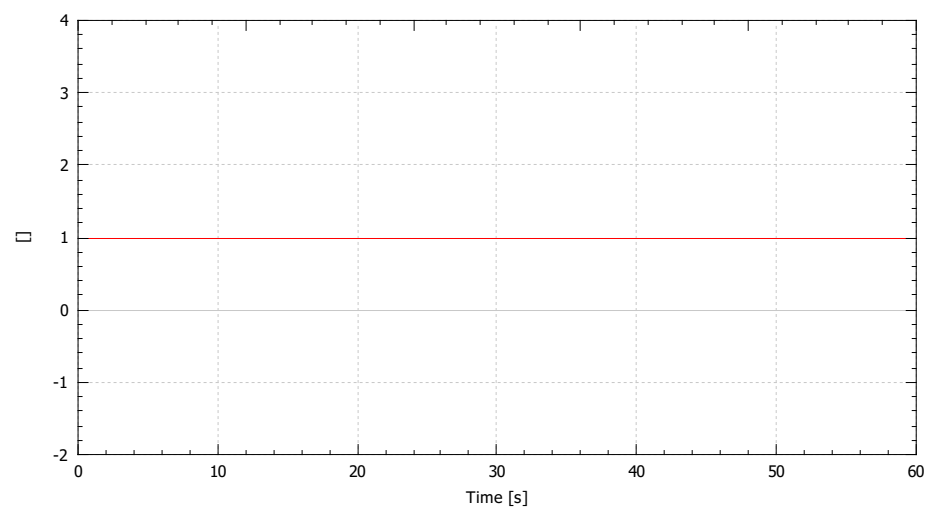
I term

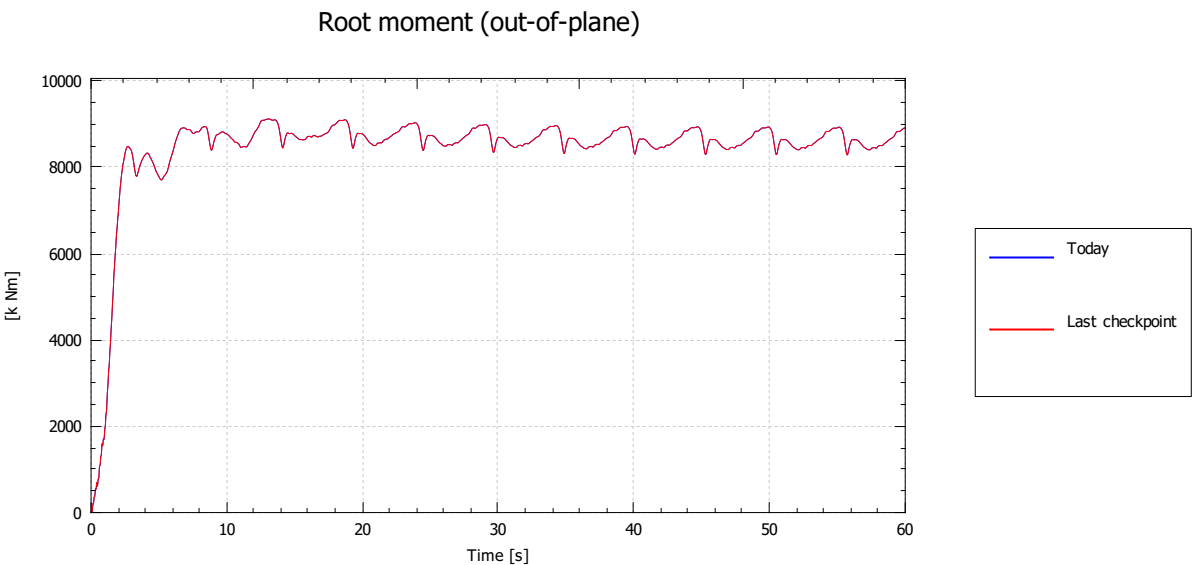
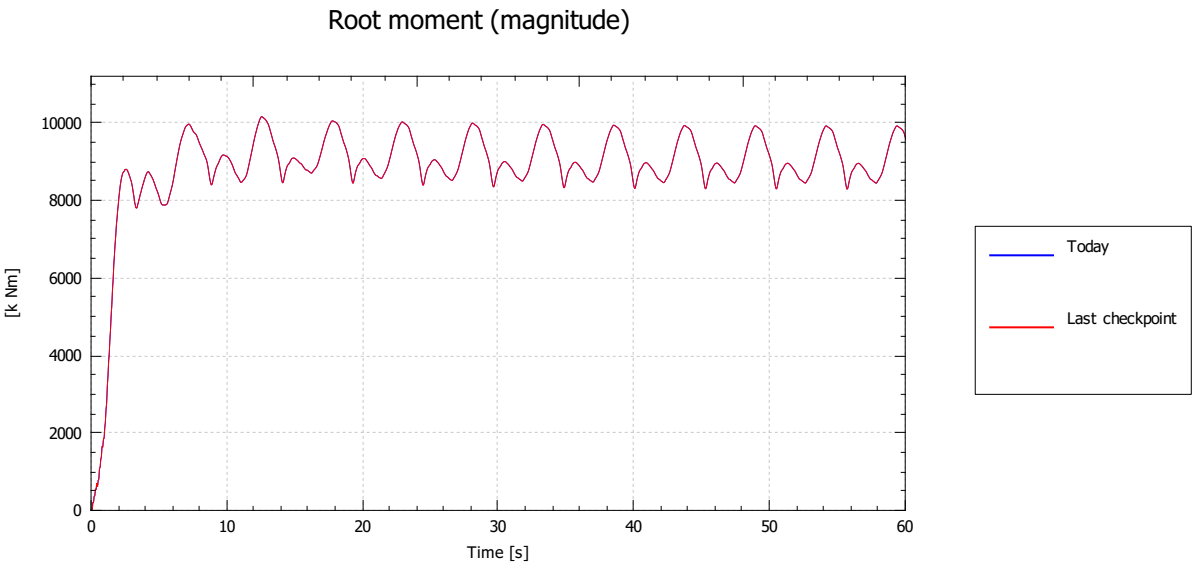
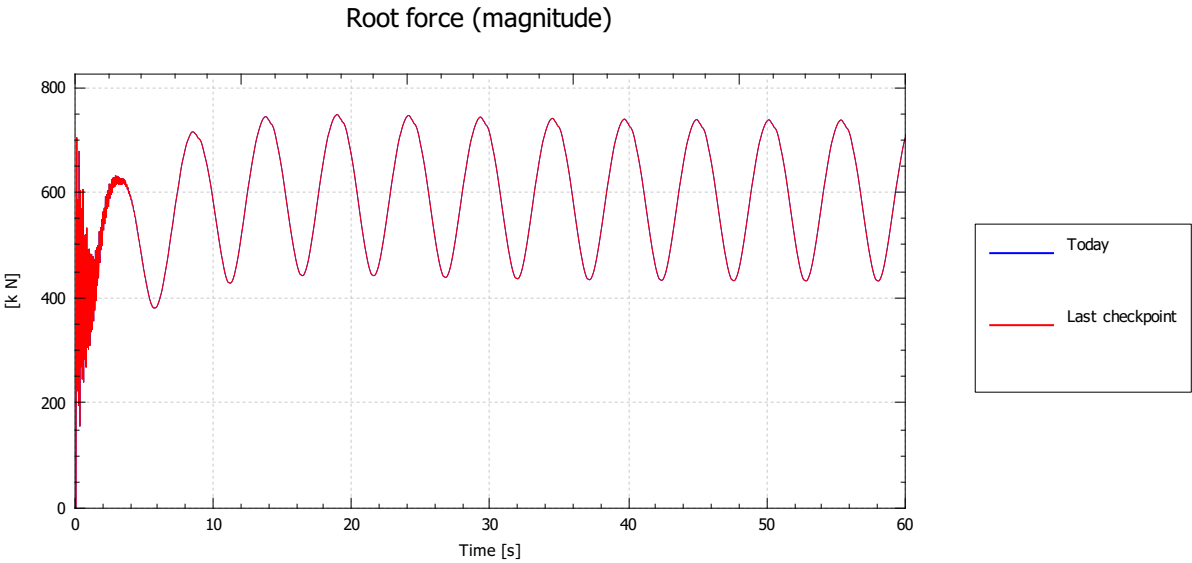


D term

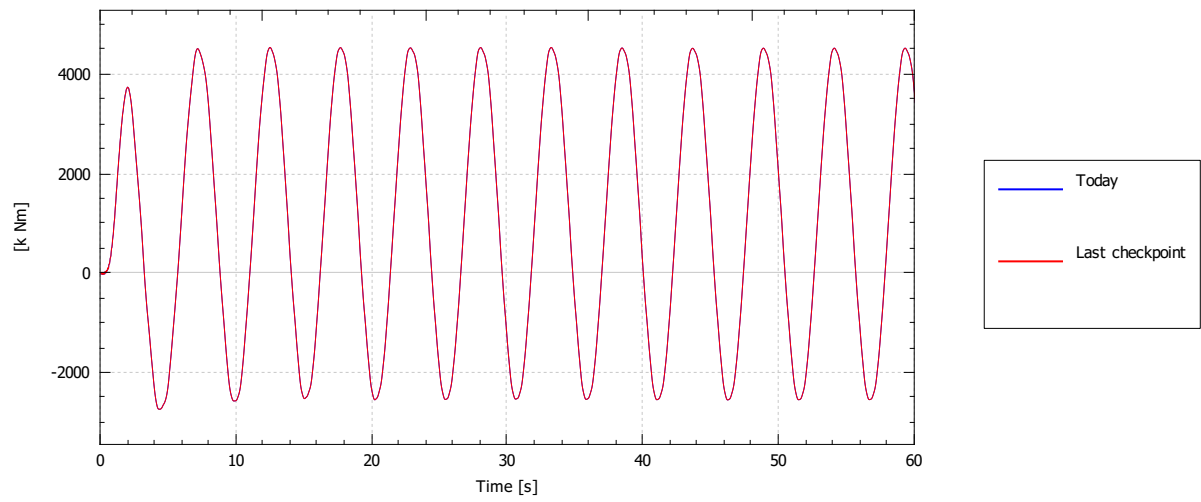


Gain scheduling factor

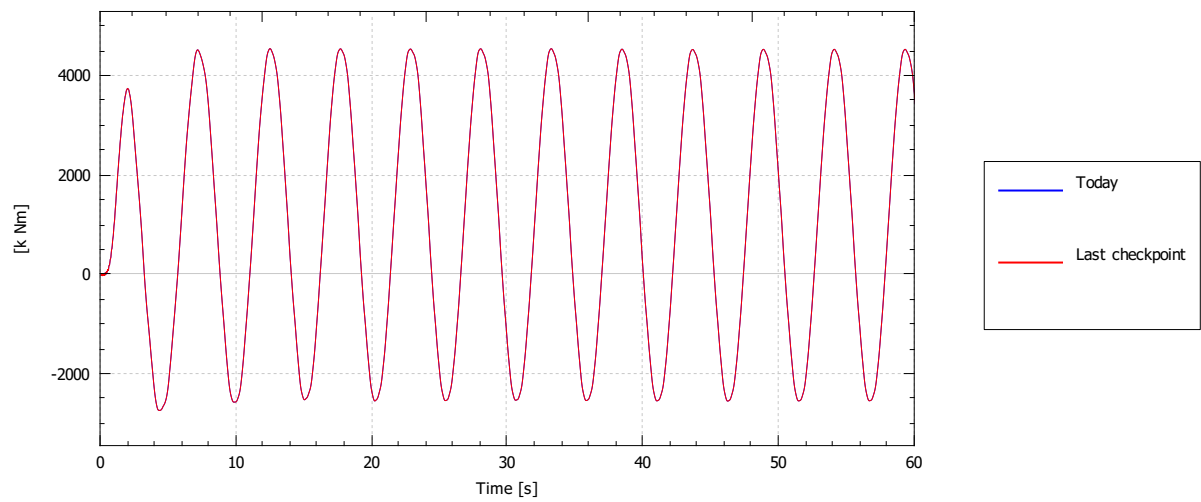




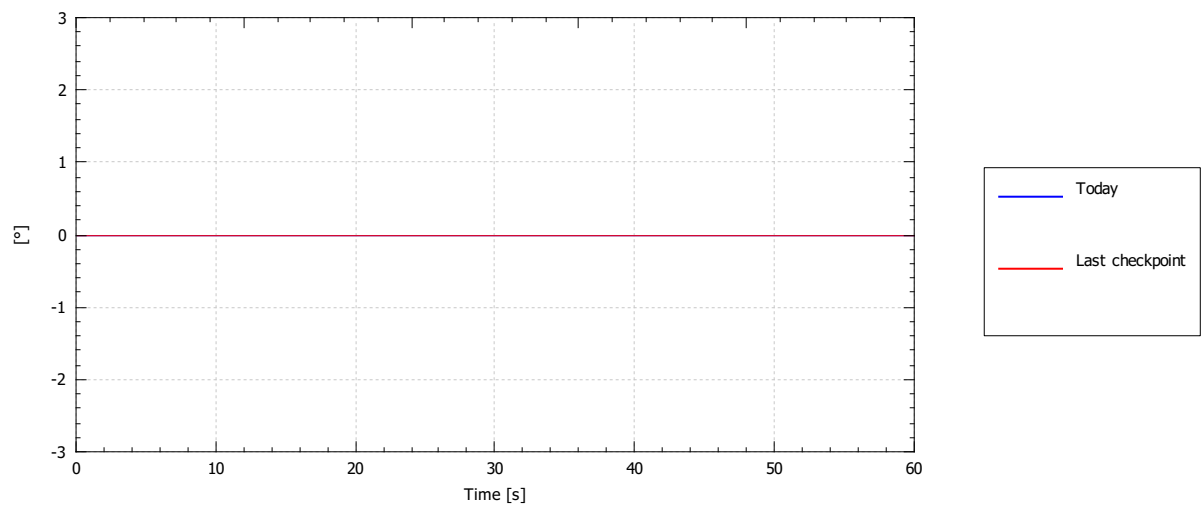
Root moment (in-plane)



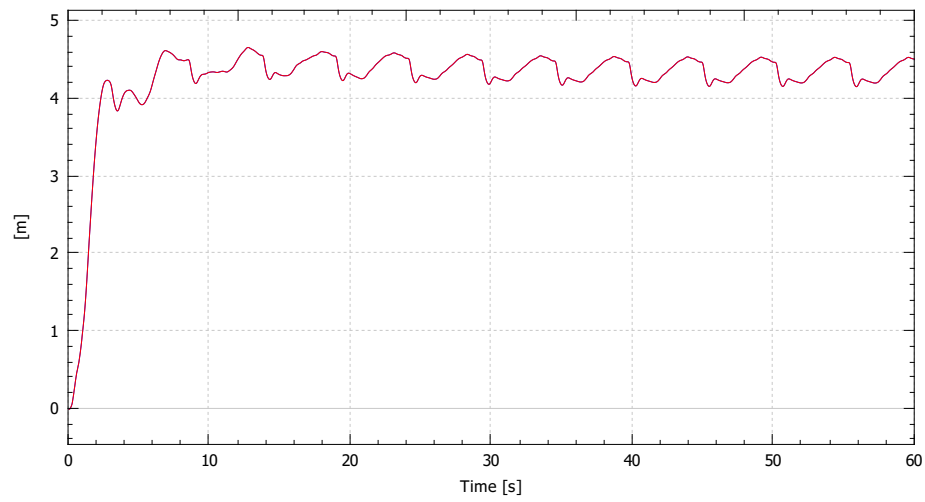
Root moment about shaft



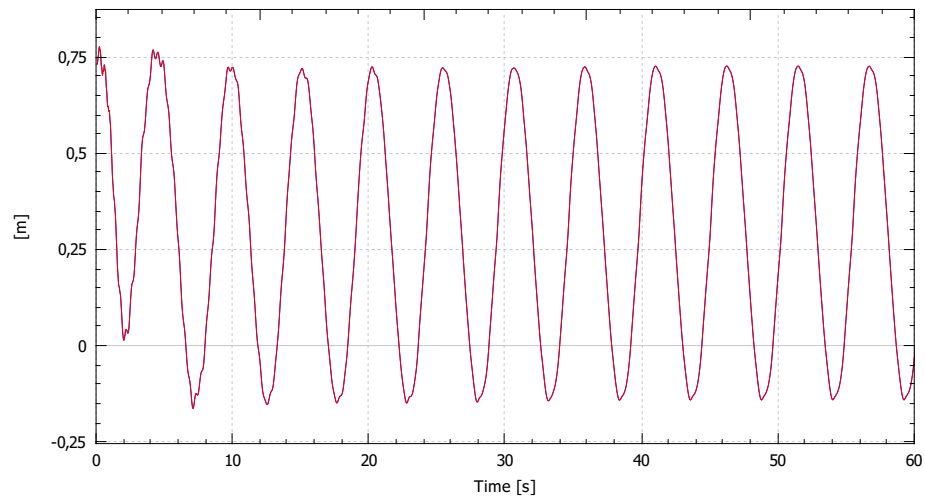
Pitch angle



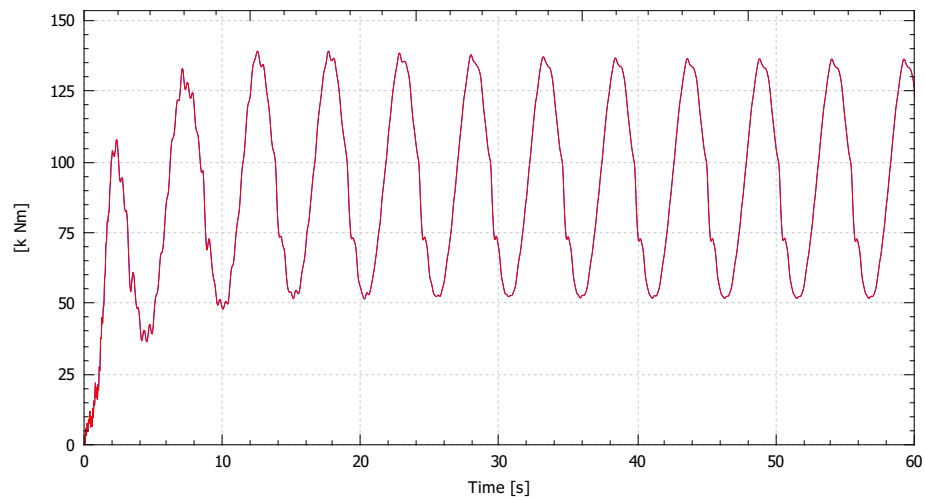
Tip deflection (out-of-plane)

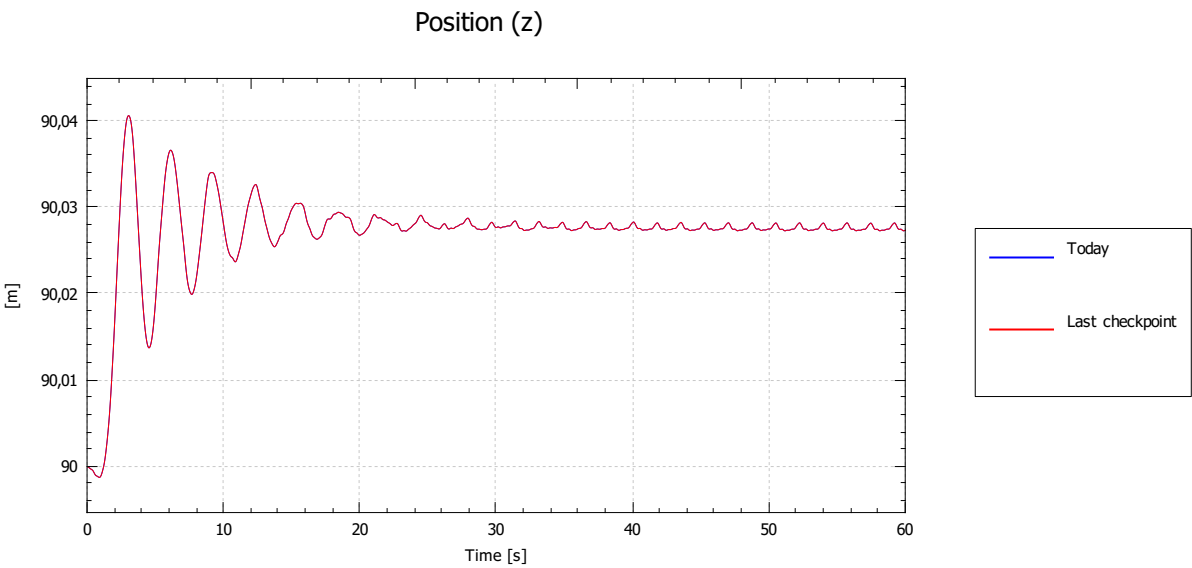
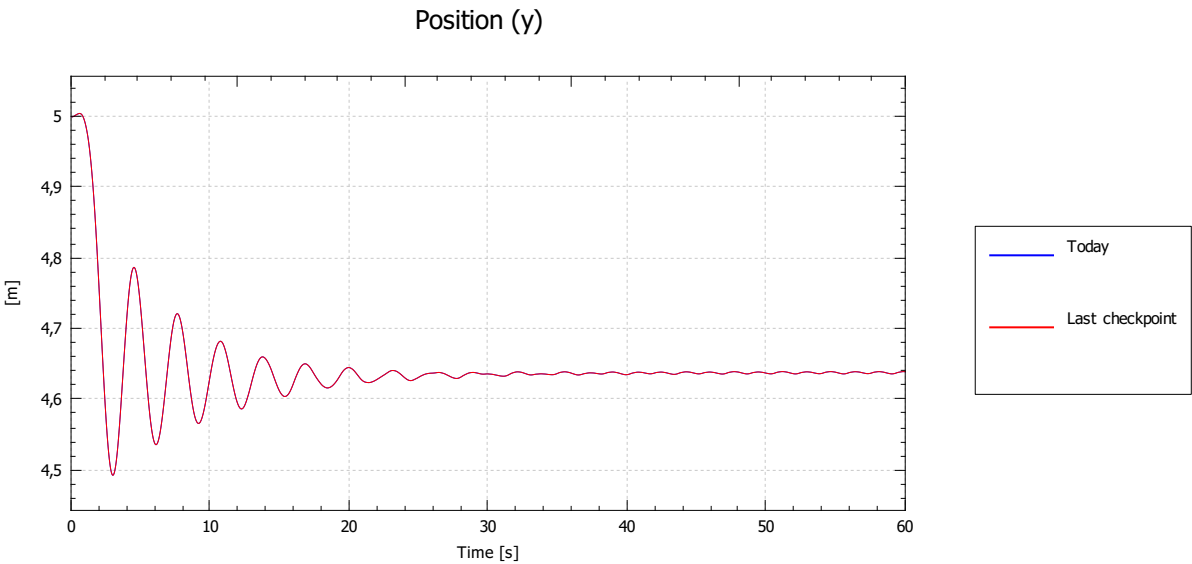
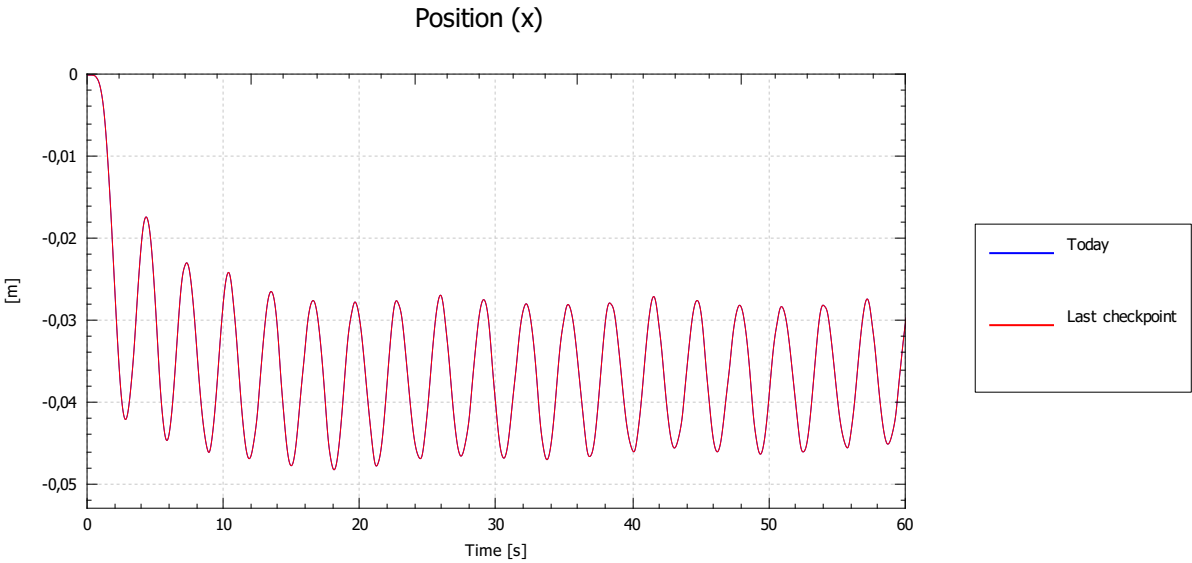


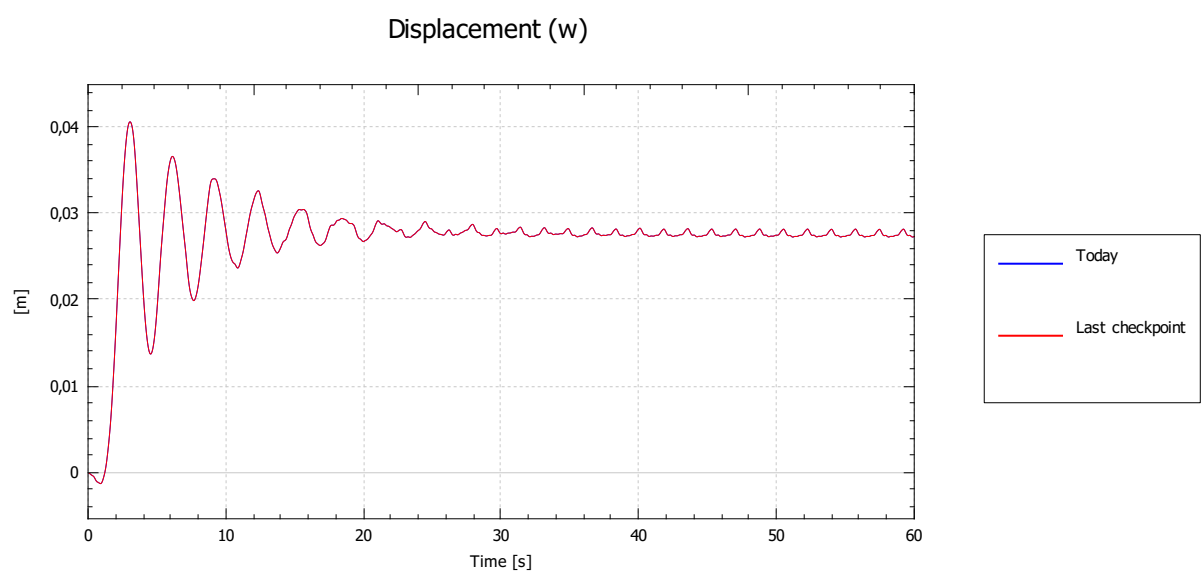
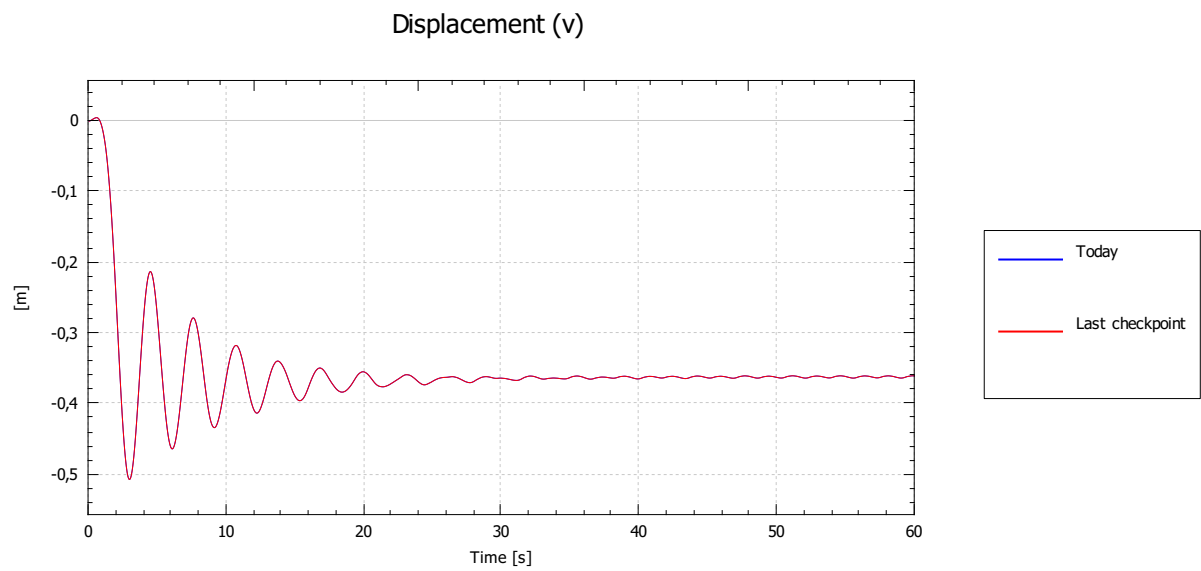
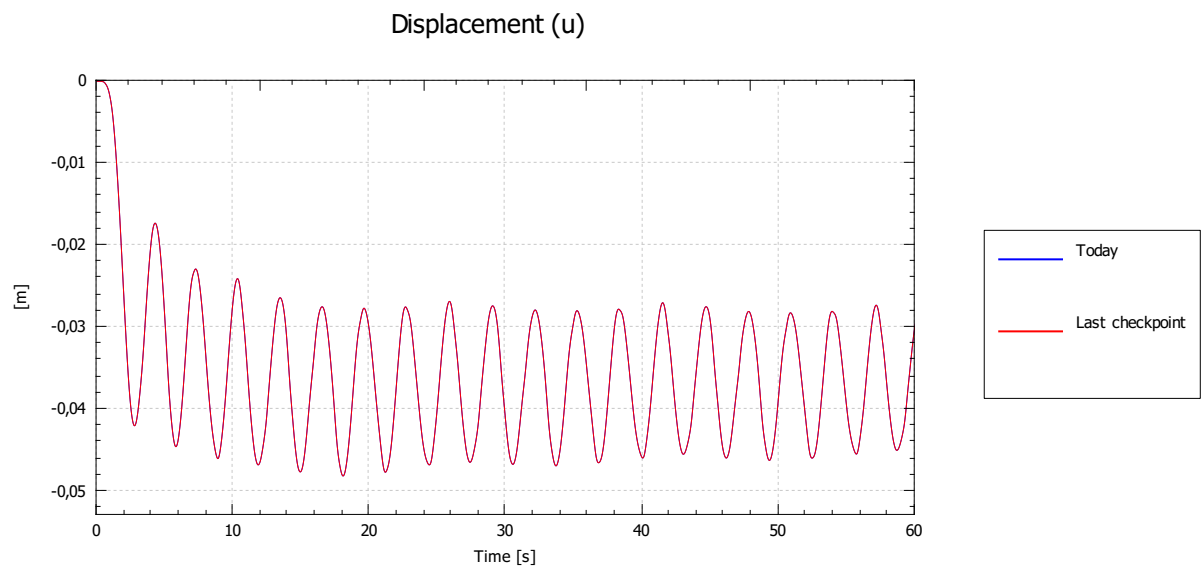
Tip deflection (in-plane)



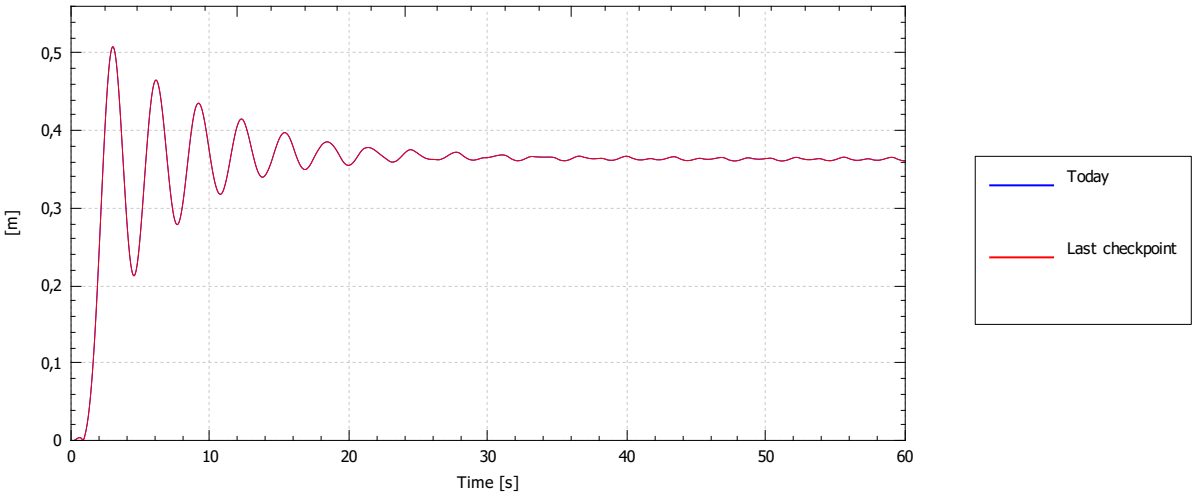
Root torque



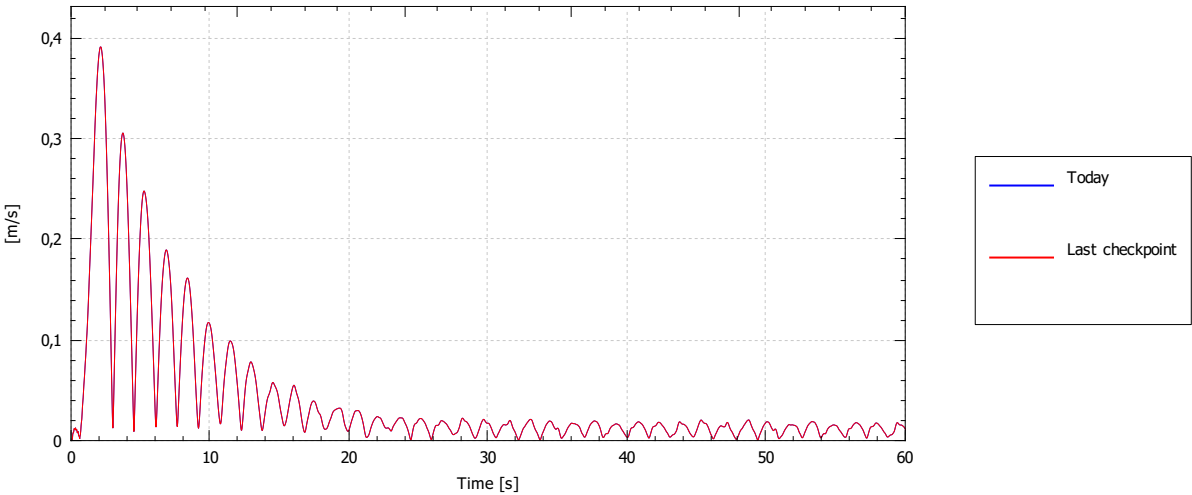




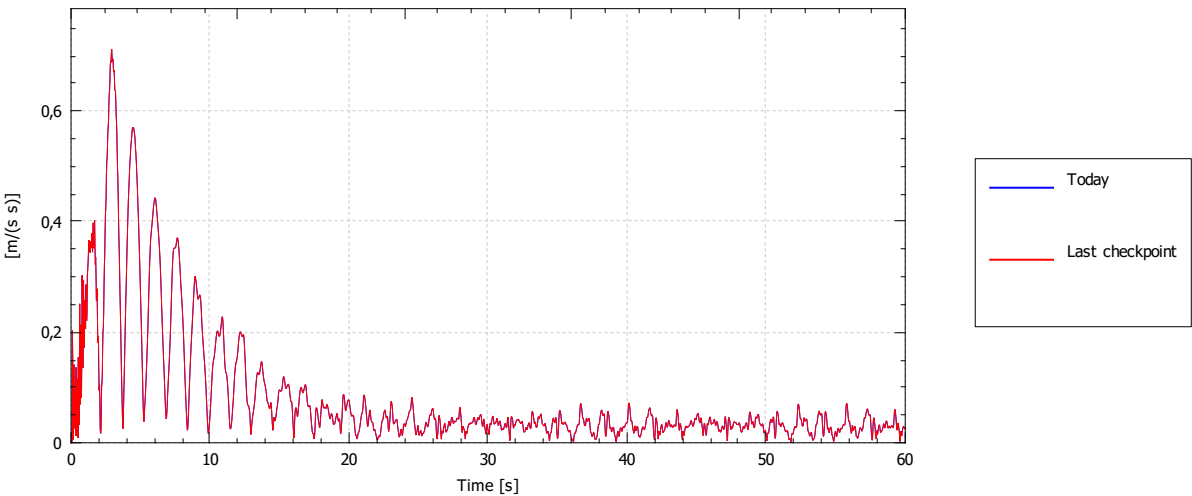
Displacement magnitude



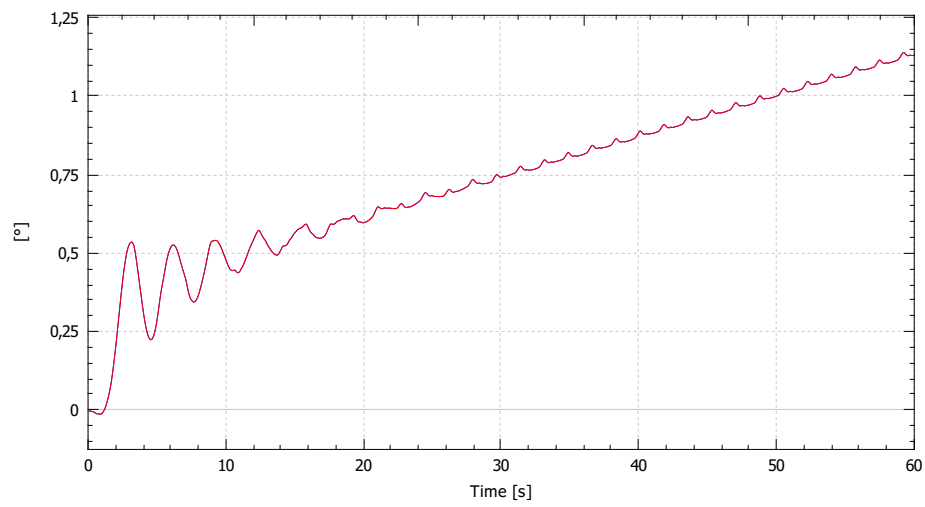
Speed



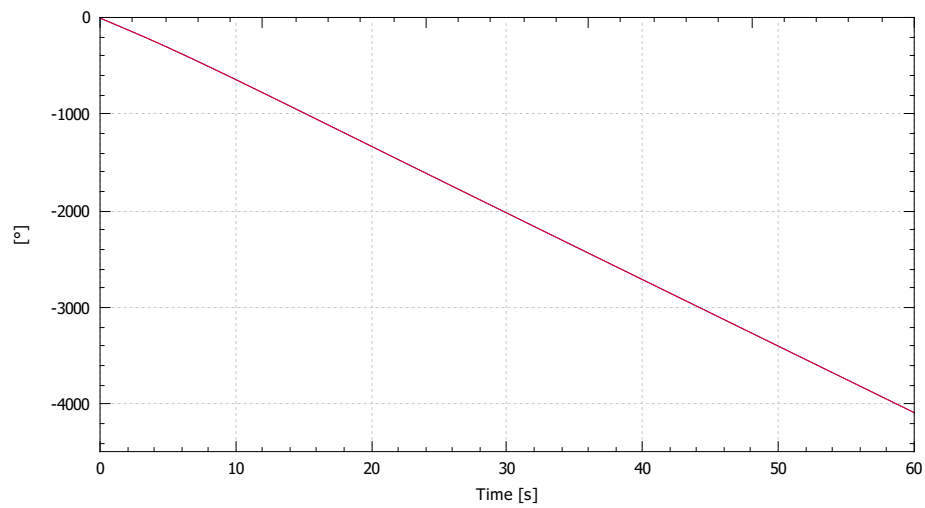
Acceleration, magnitude



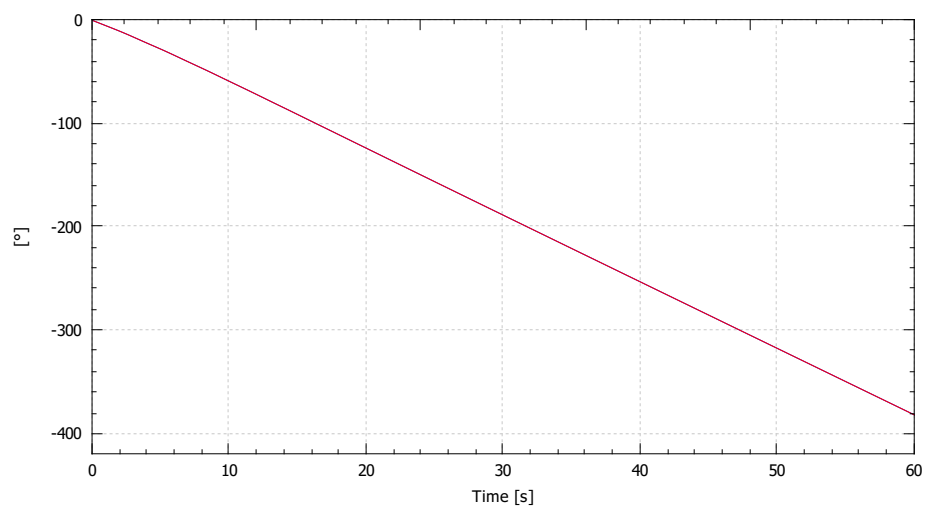
Rotational displacement (ru)



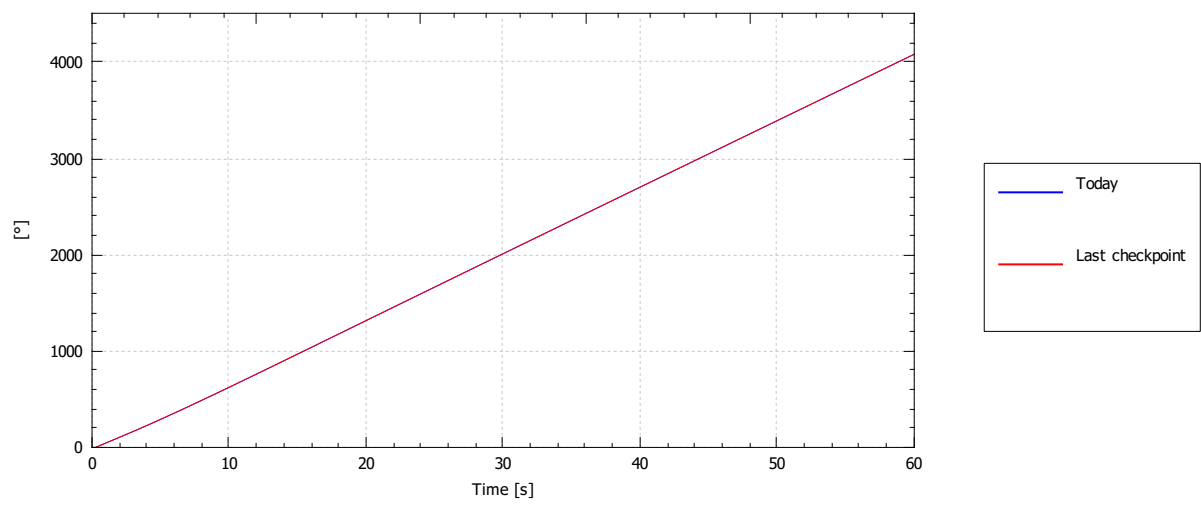
Rotational displacement (rv)



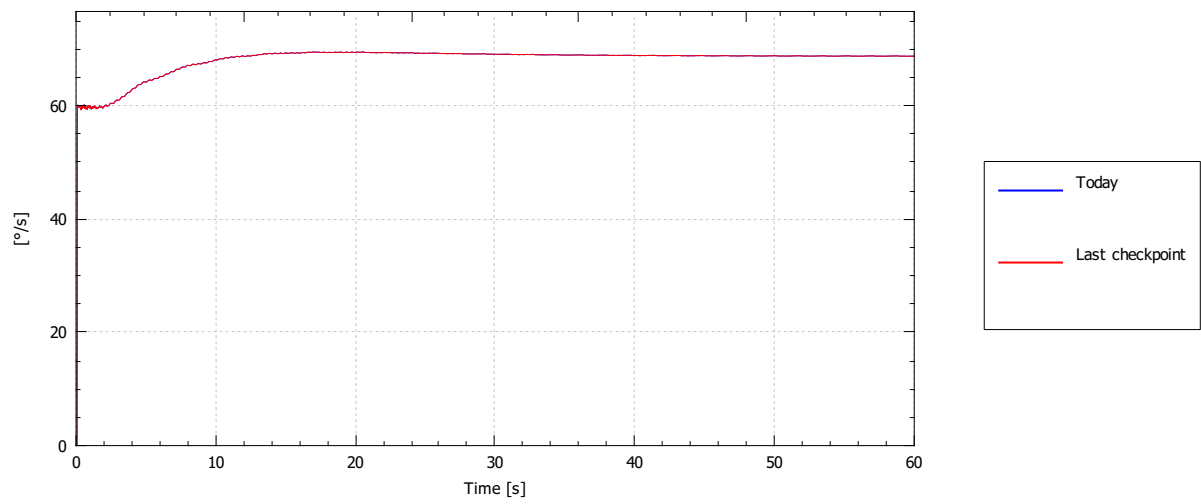
Rotational displacement (rw)



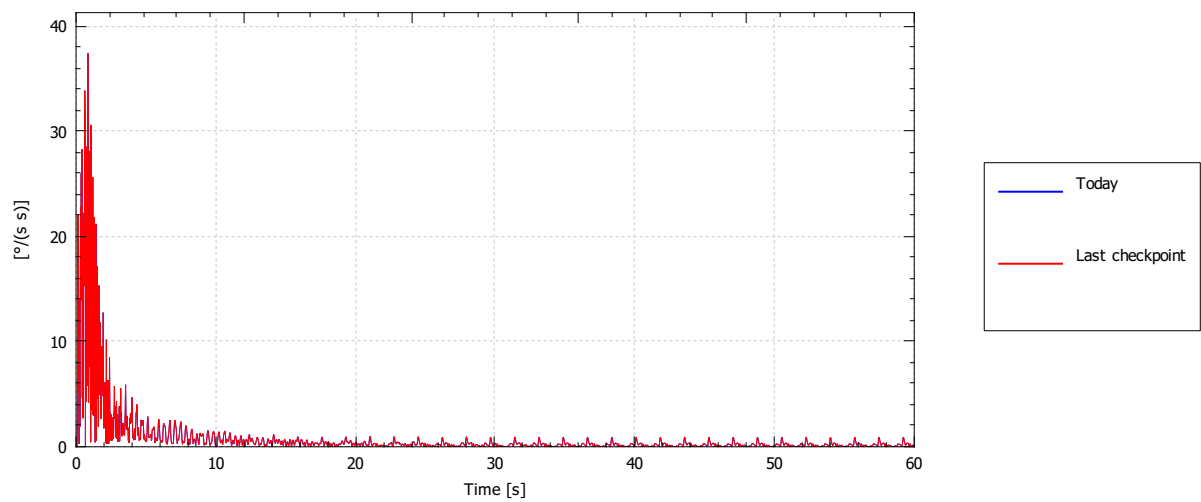
Rotational displacement magnitude



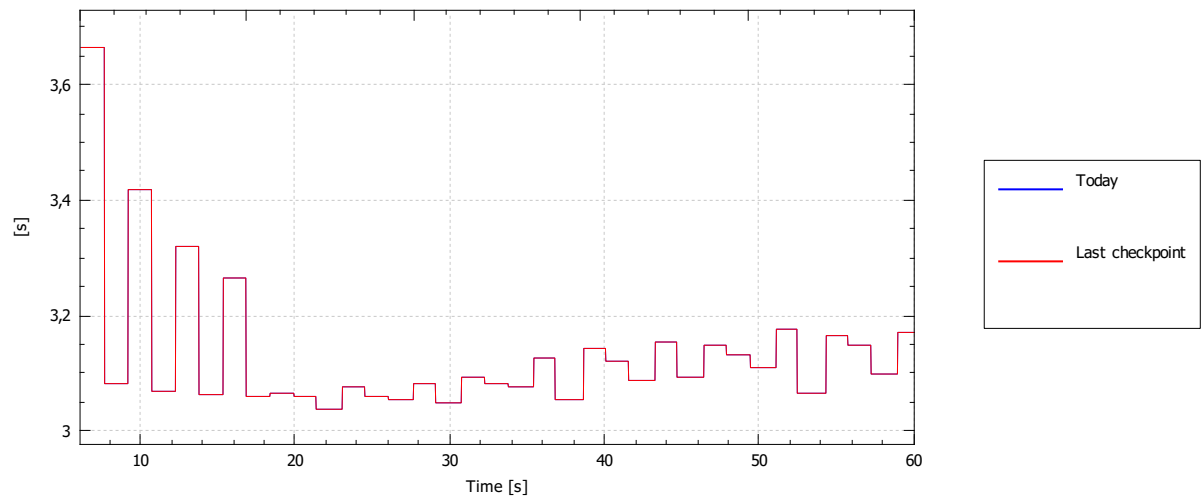
Rotational speed



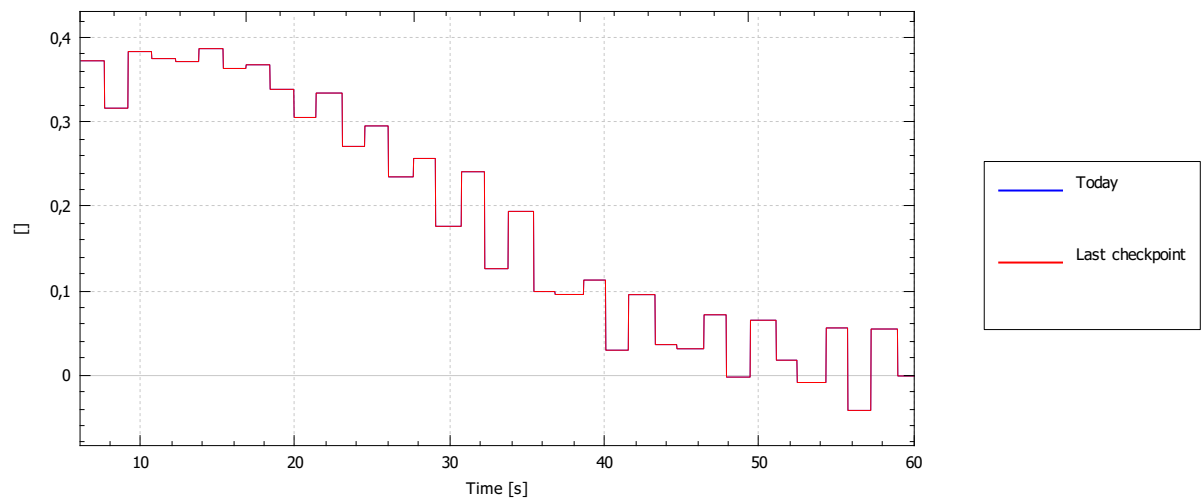
Rotational acceleration mag



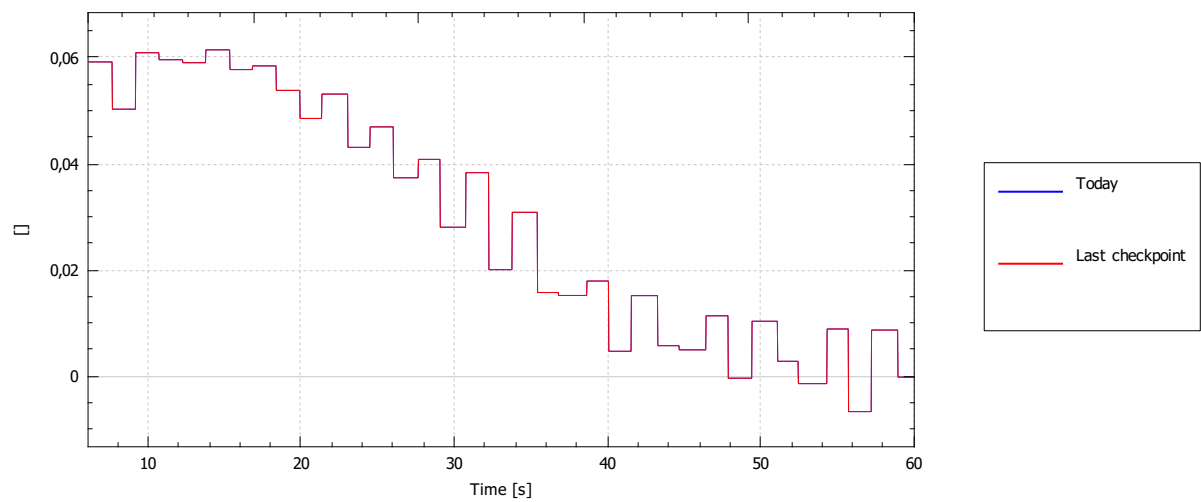
Displacement period



Displacement logarithmic decrement

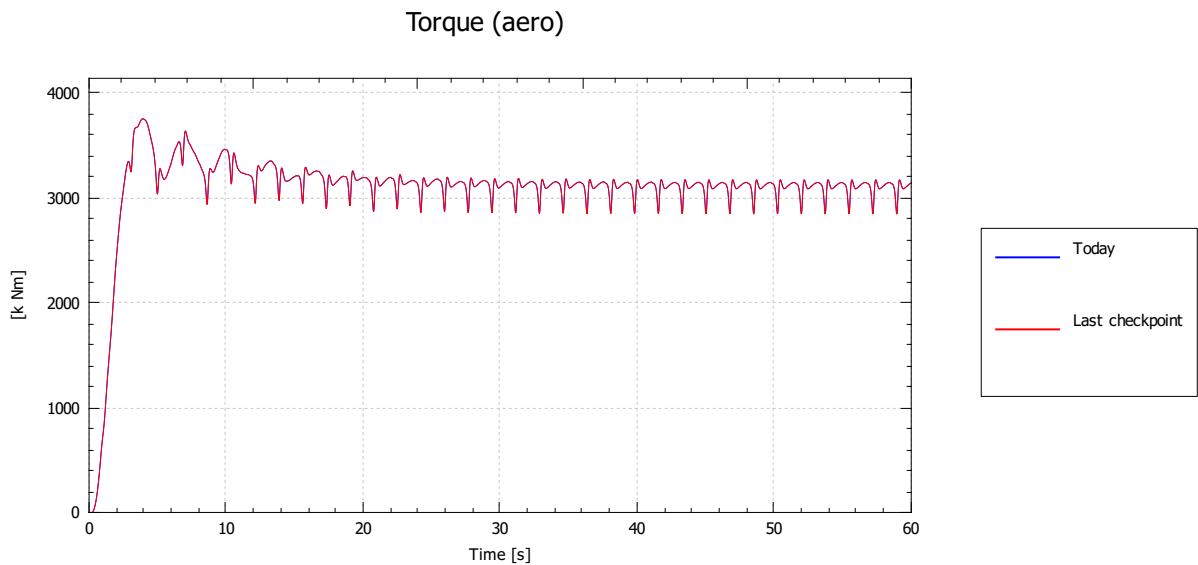
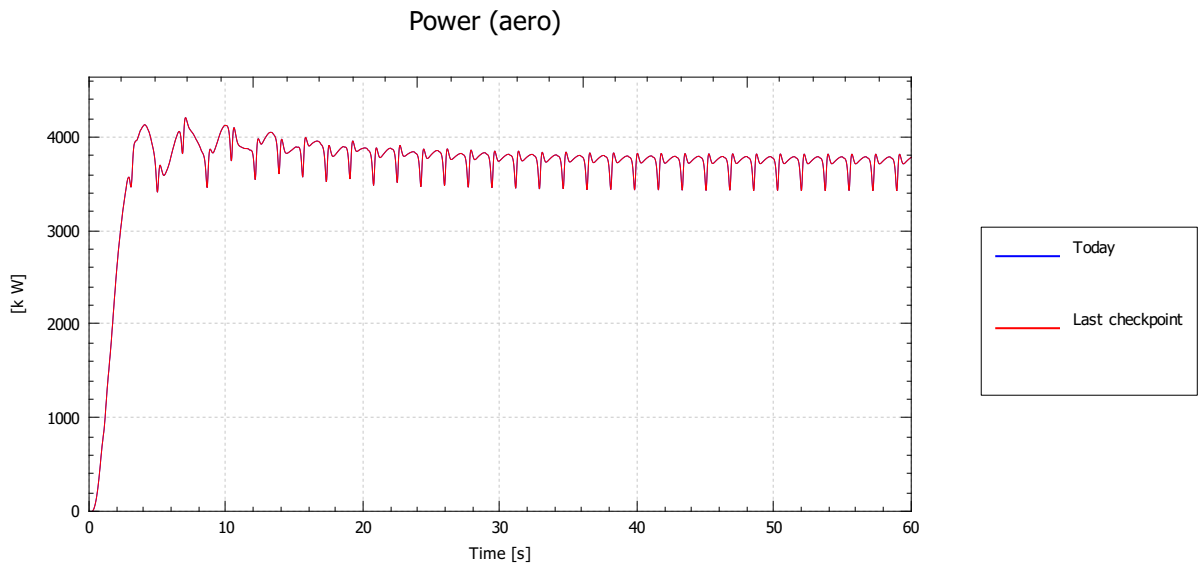


Displacement damping ratio

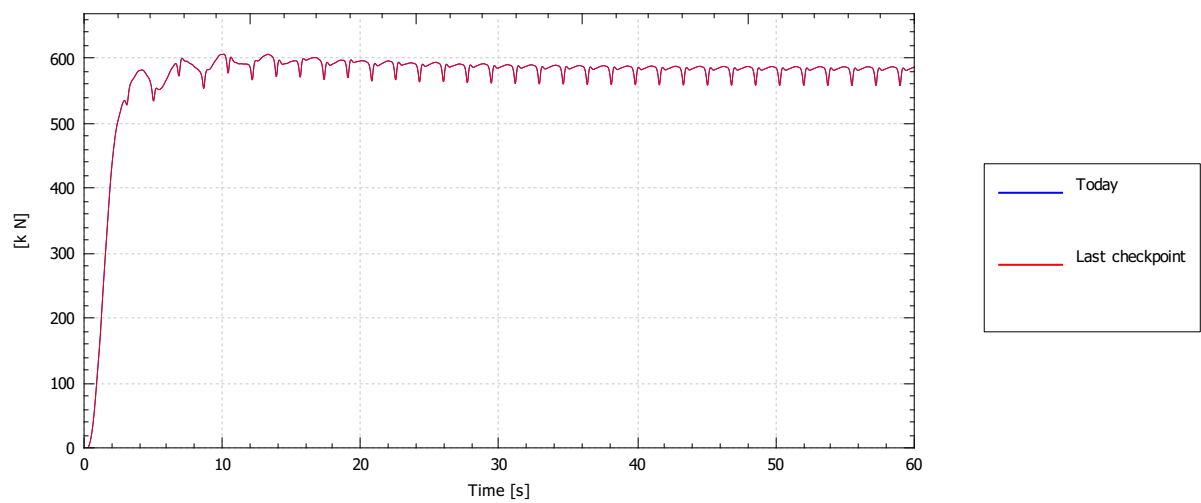


Load case: Target RPM

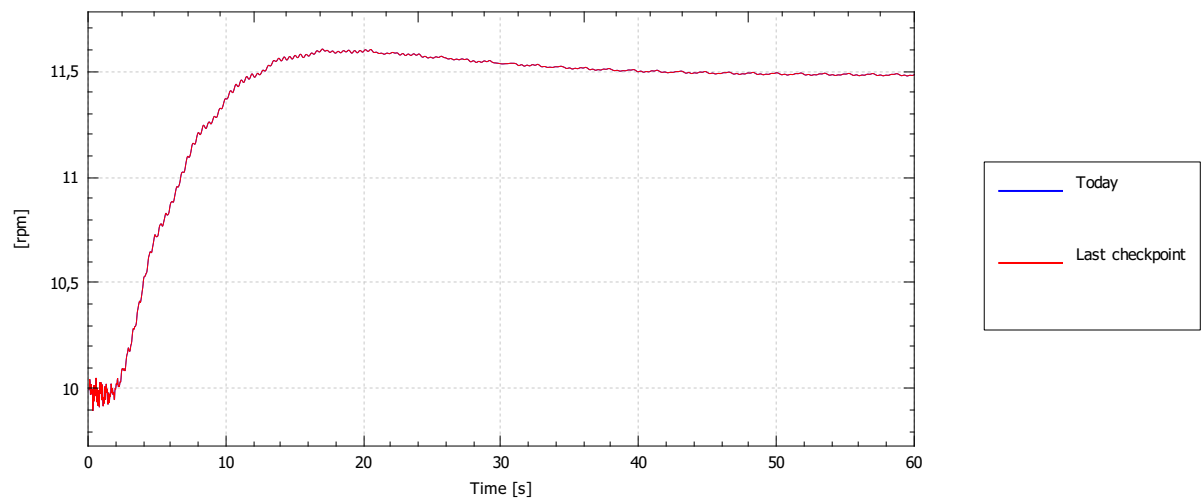
Rotor



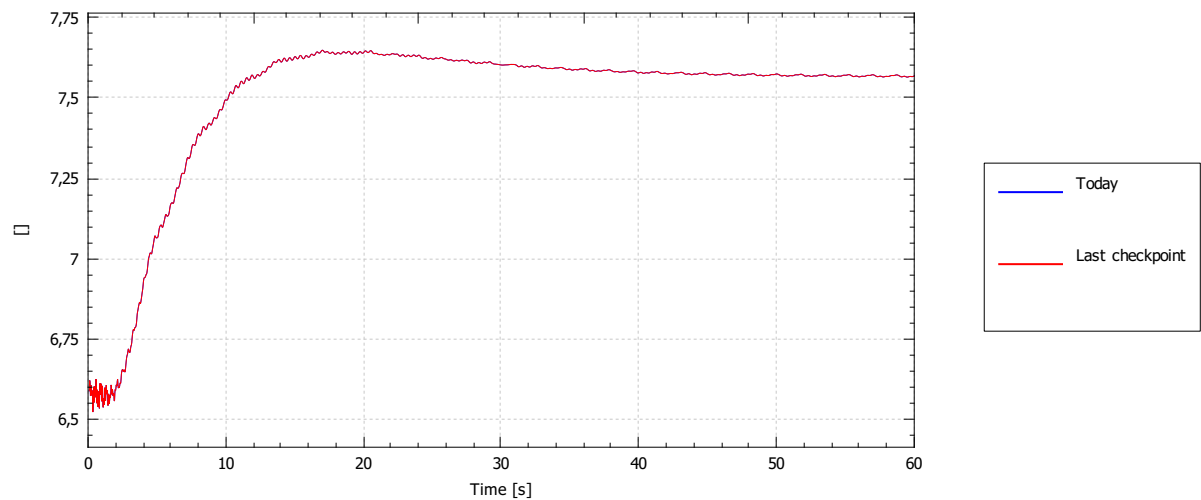
Thrust (aero)



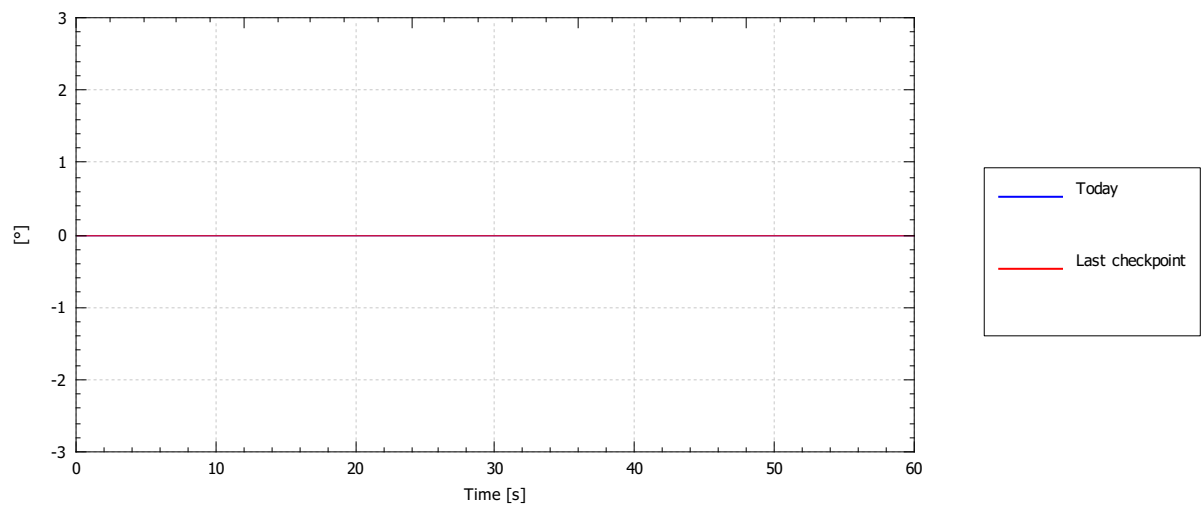
RPM



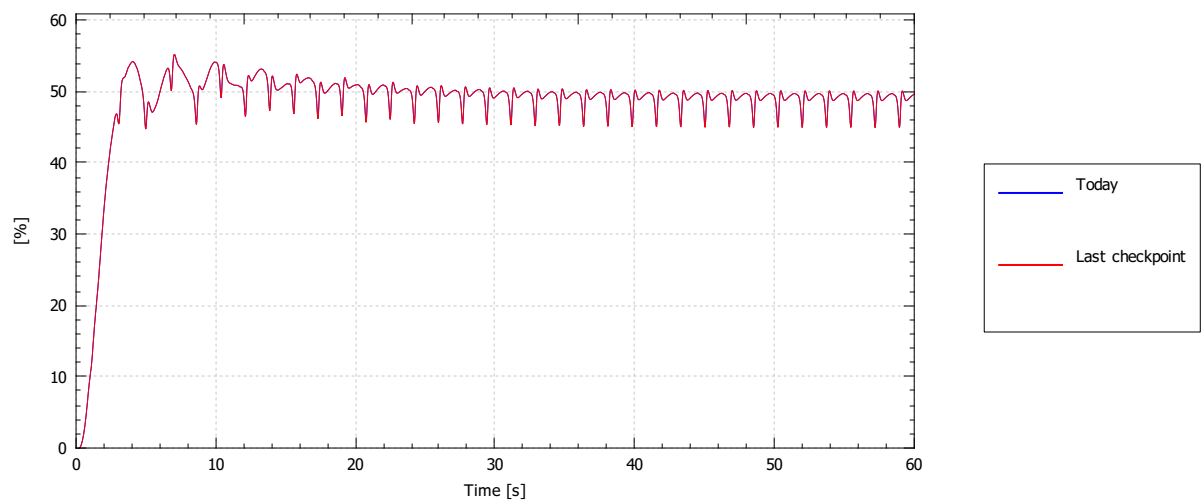
TSR



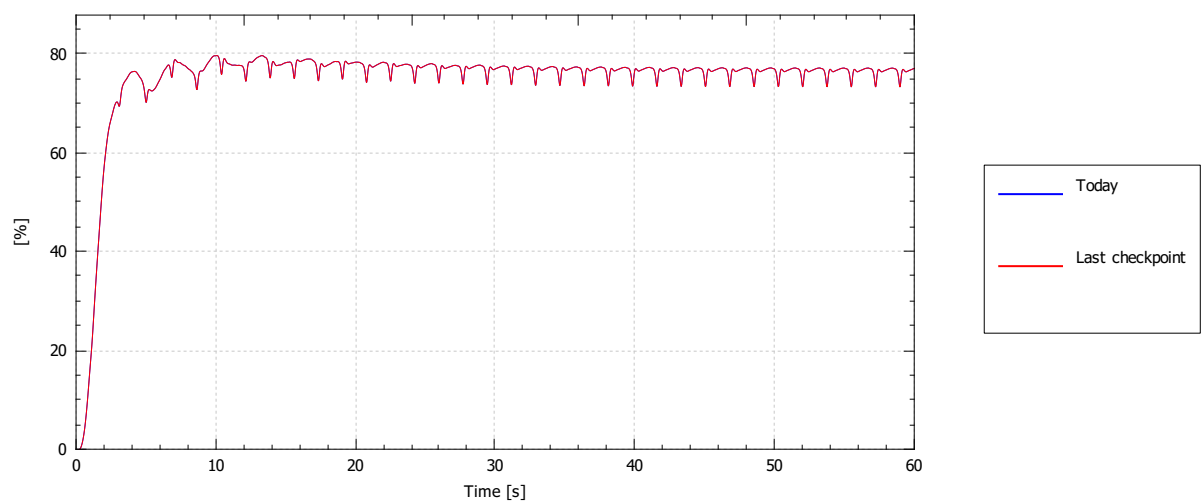
Representative demanded pitch angle



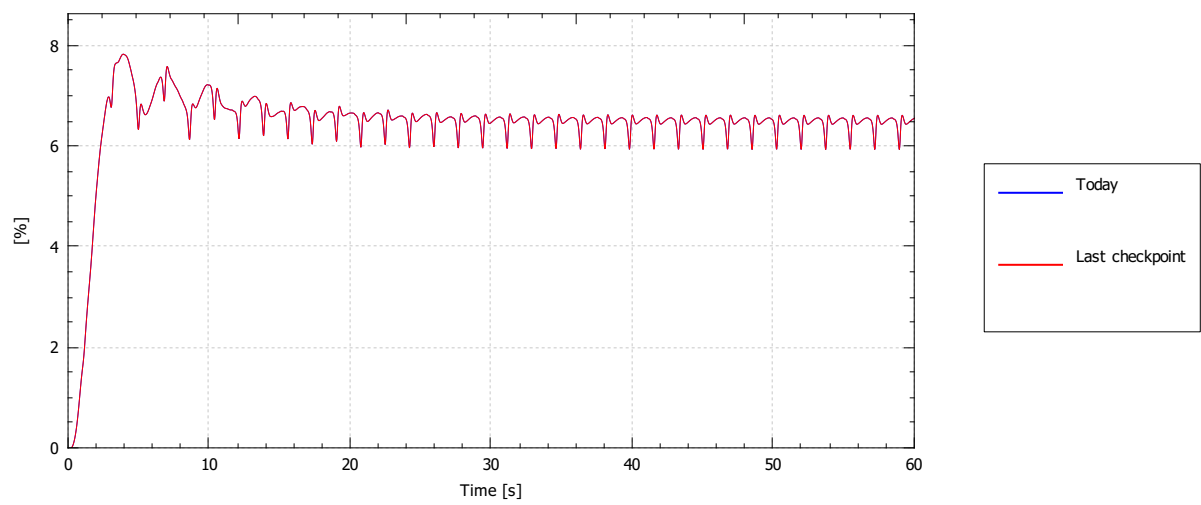
Power coef. (CP)



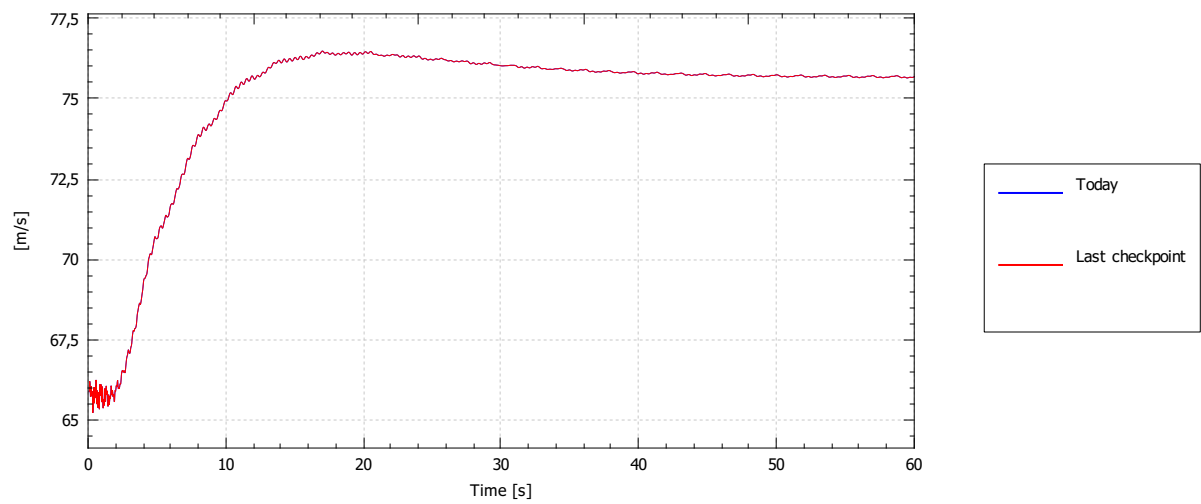
Thrust coef. (CT)



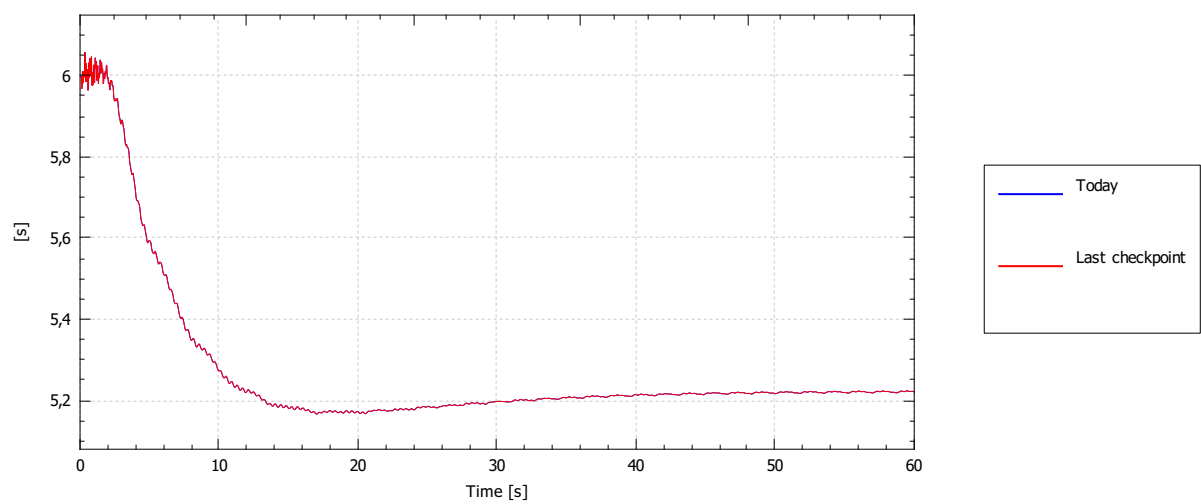
Torque coef. (CQ)



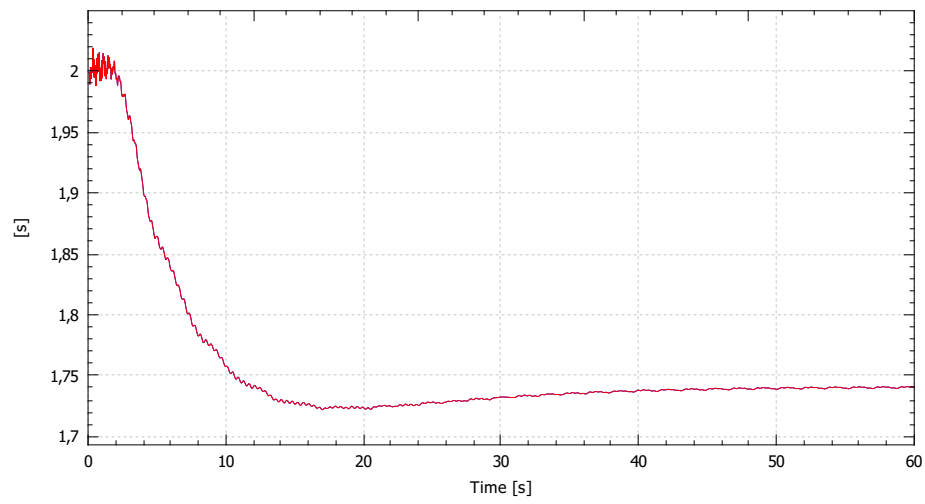
Tip speed



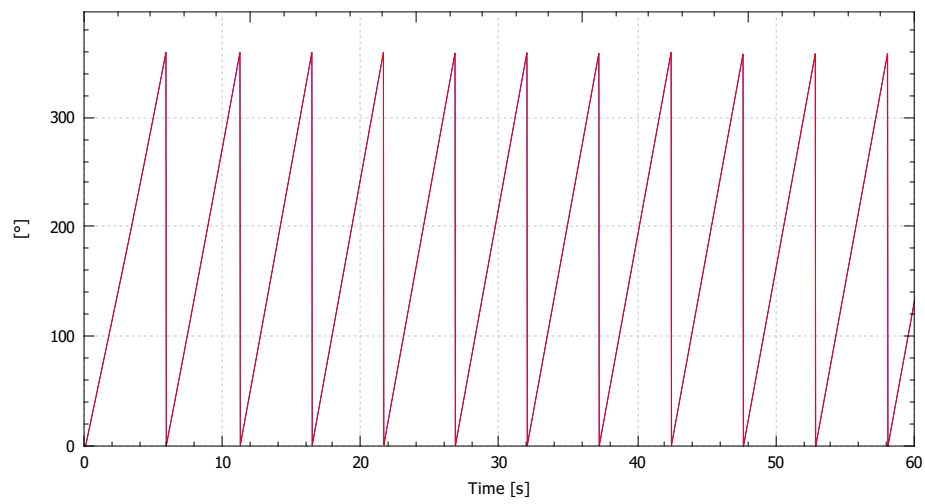
1P (one revolution)



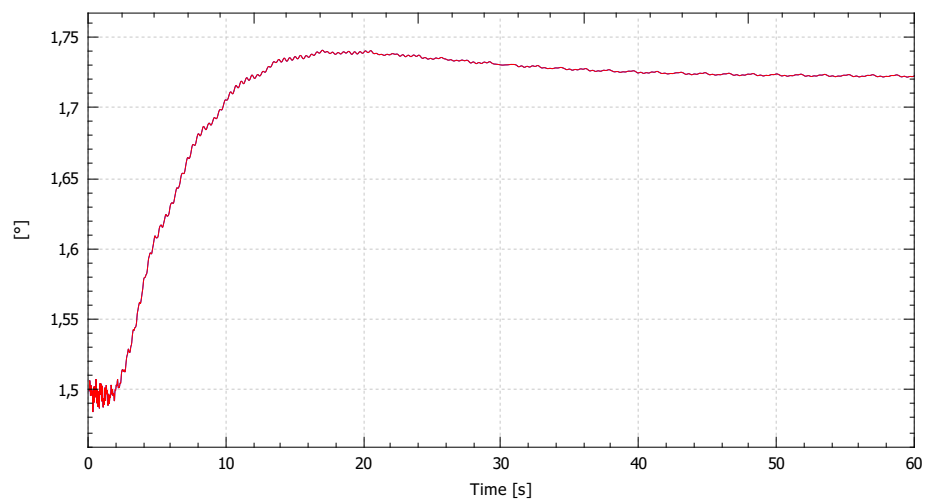
nP (blade passing)



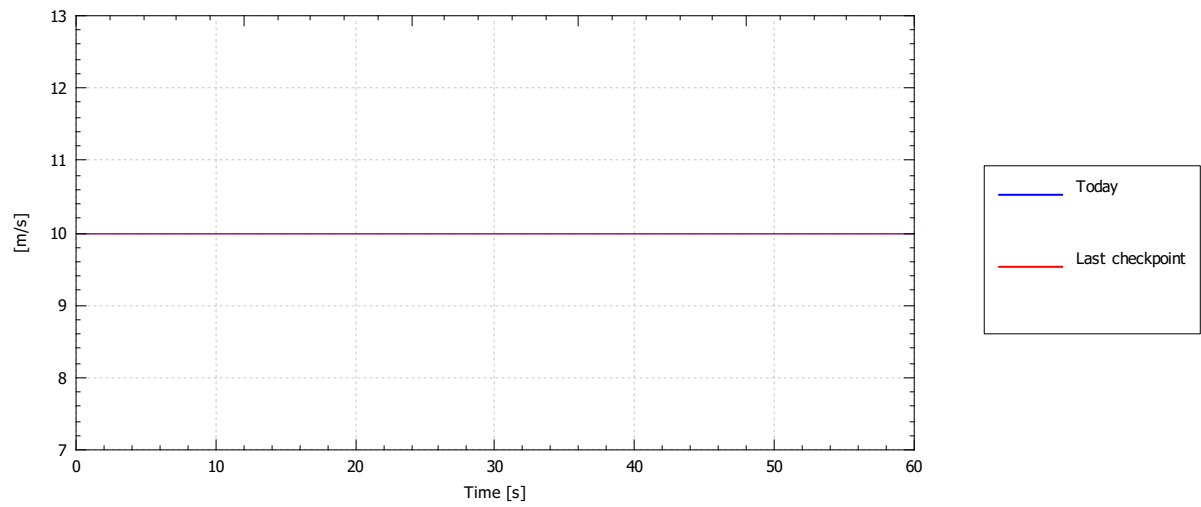
Azimuth angle



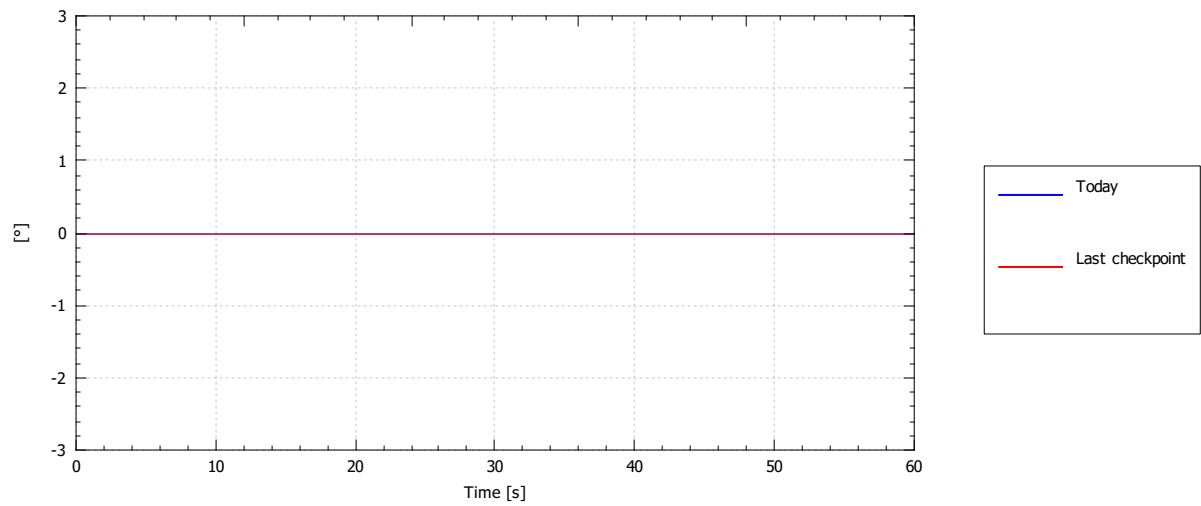
Rotation per timestep



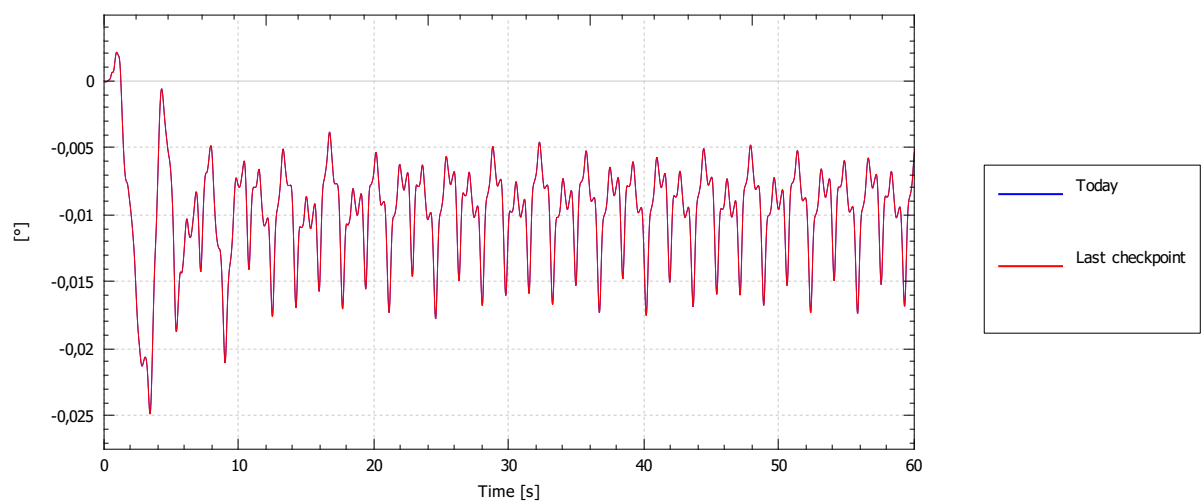
Wind speed at hub, magnitude



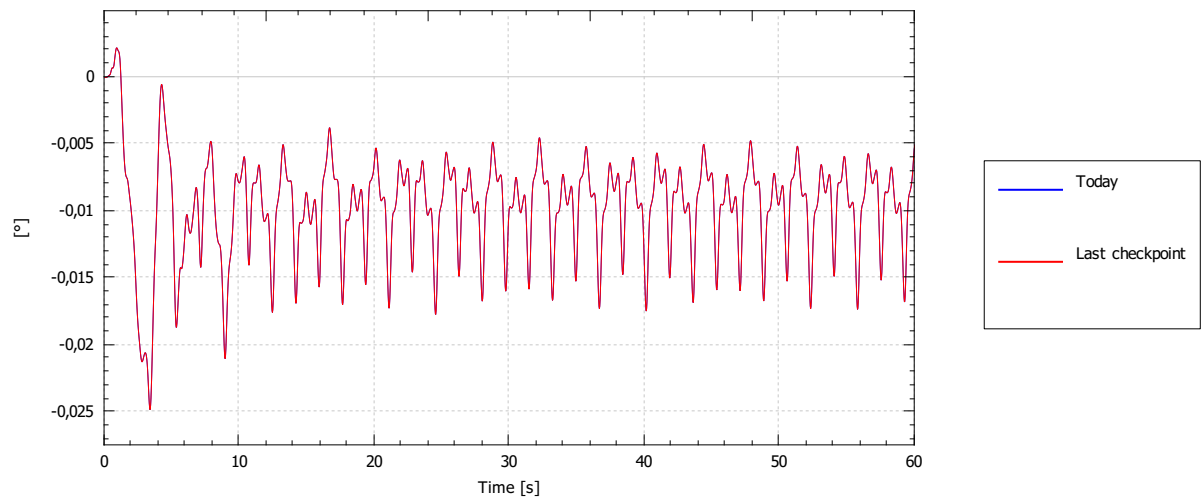
Wind angle at hub



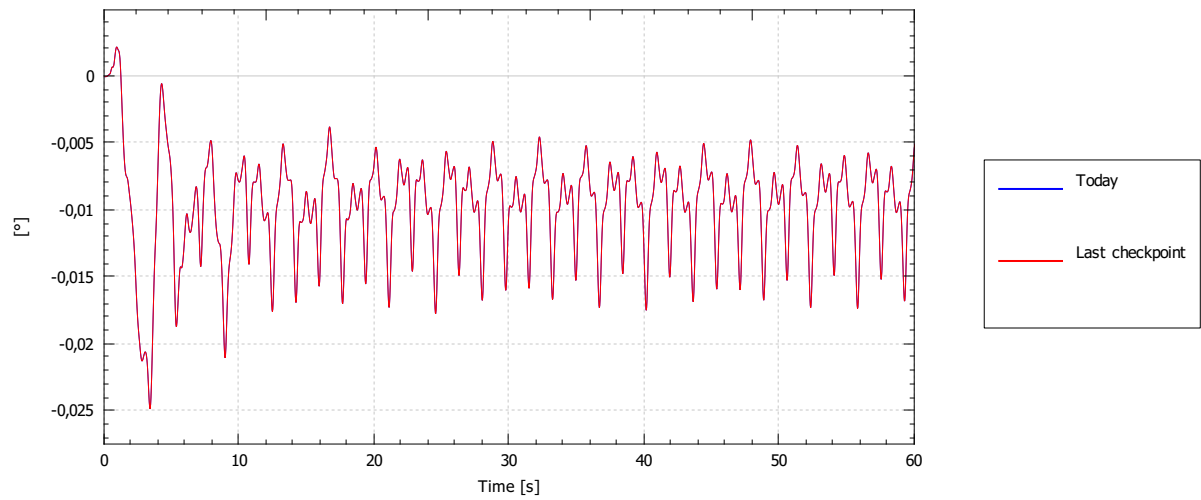
Yaw angle relative to forward



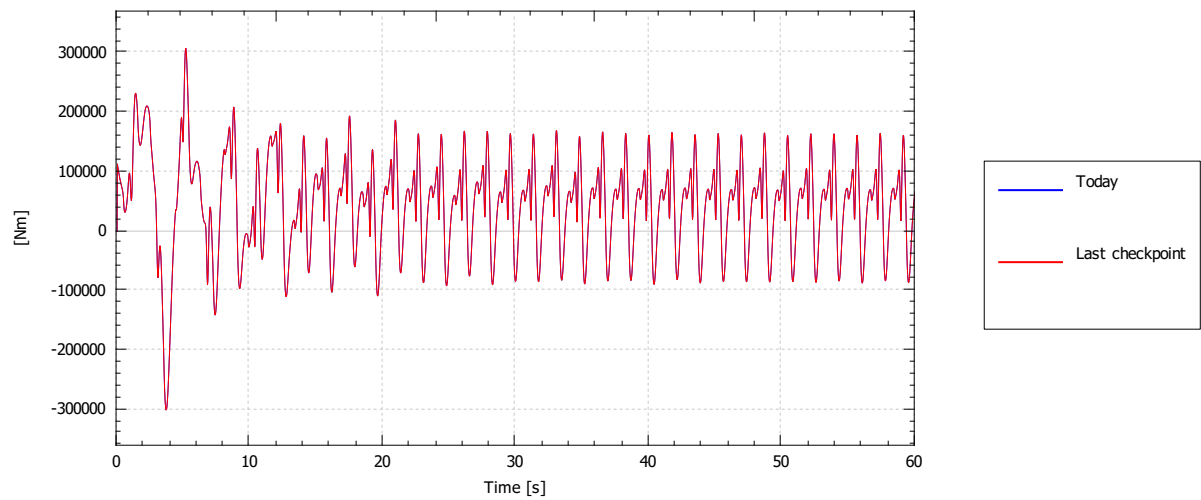
Yaw angle to reference direction



Yaw error

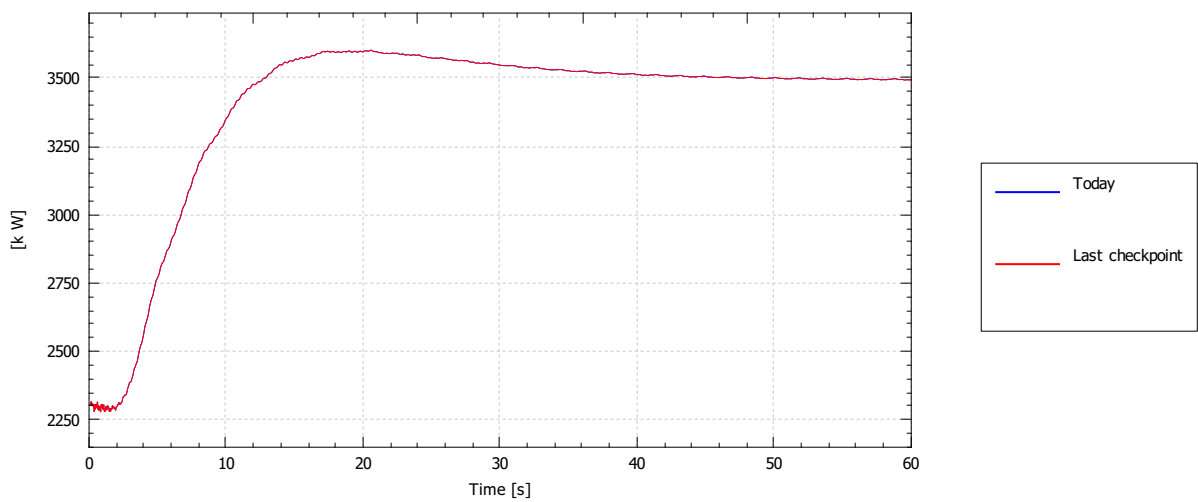


Torque about yaw axis

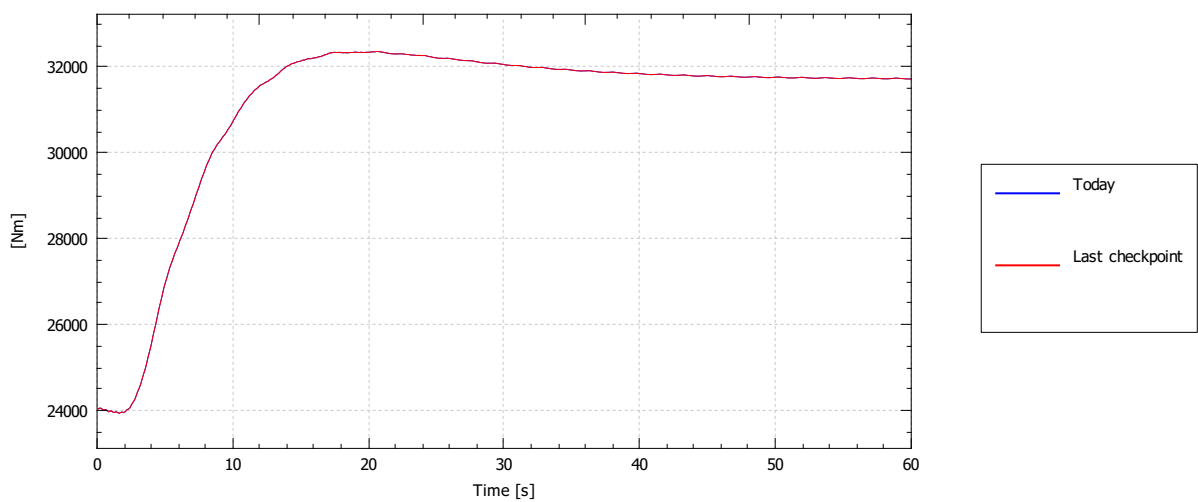


Generator

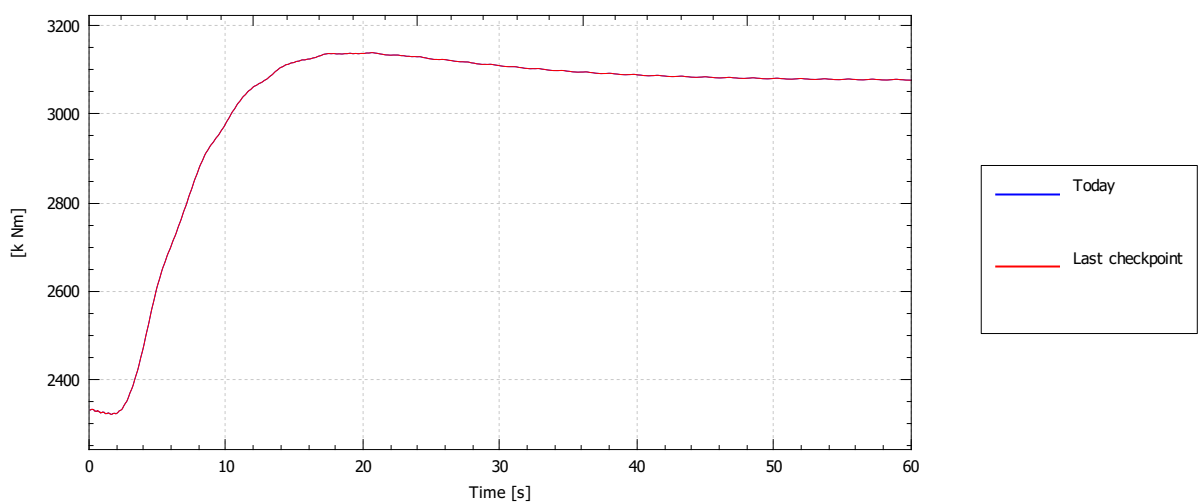
Power (electrical)



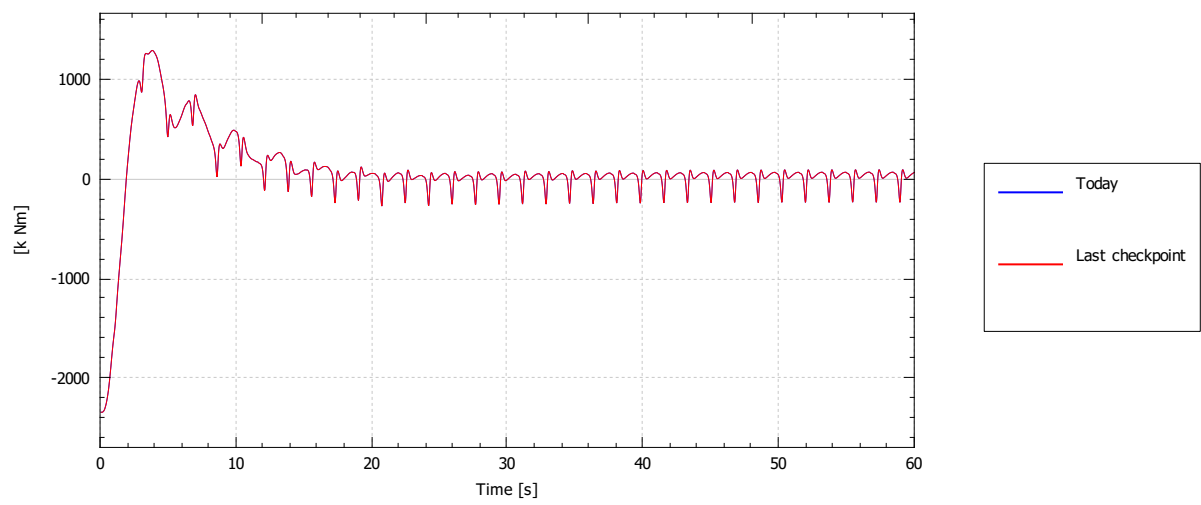
Torque



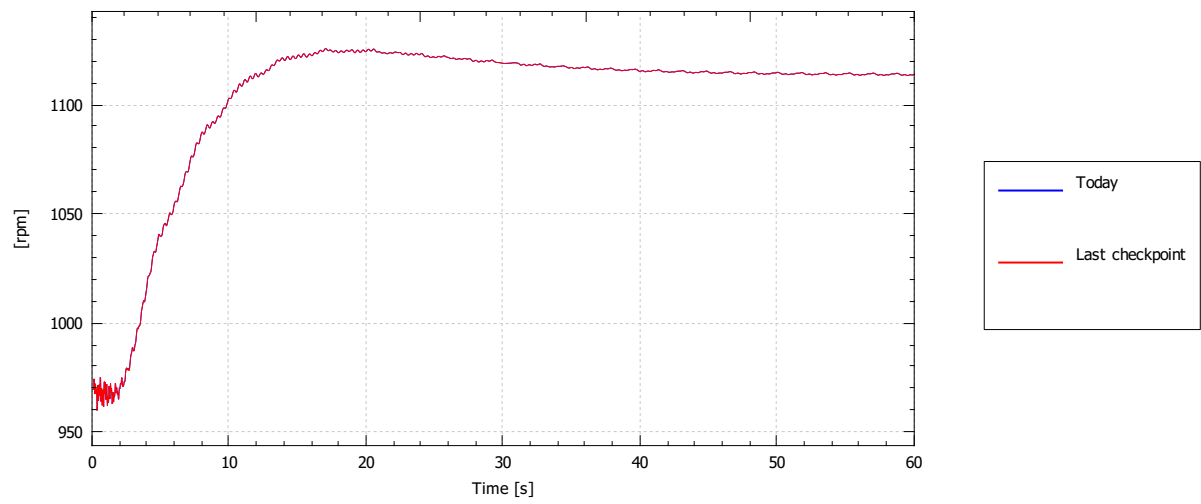
Torque on main shaft



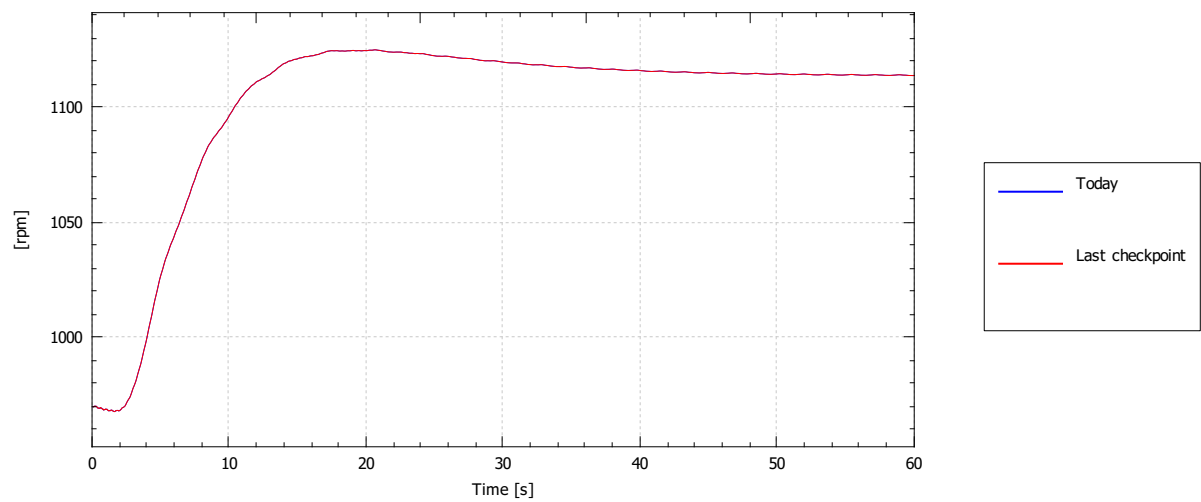
Torque diff. on main shaft



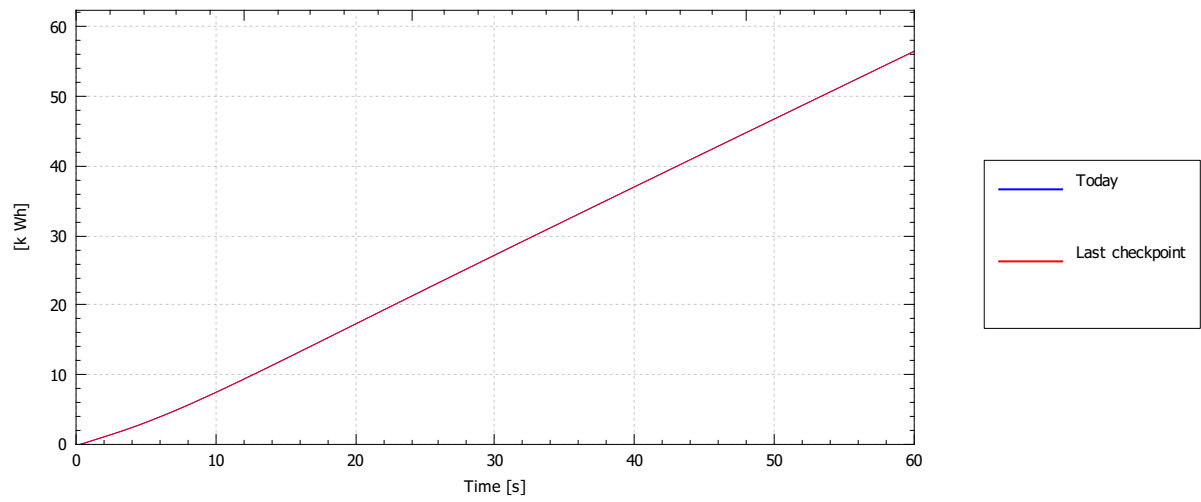
RPM



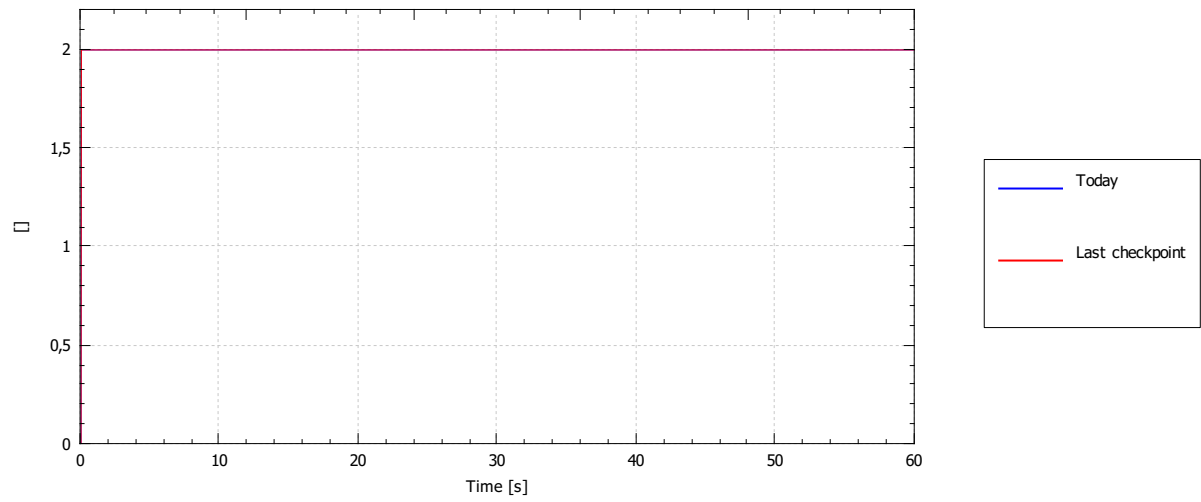
Filtered RPM



Electricity production

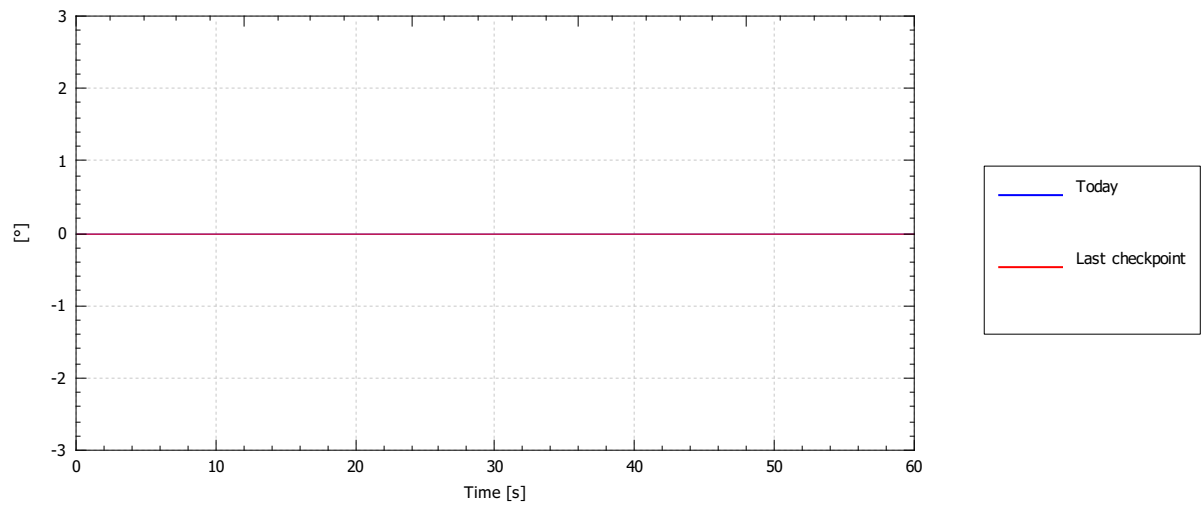


Region

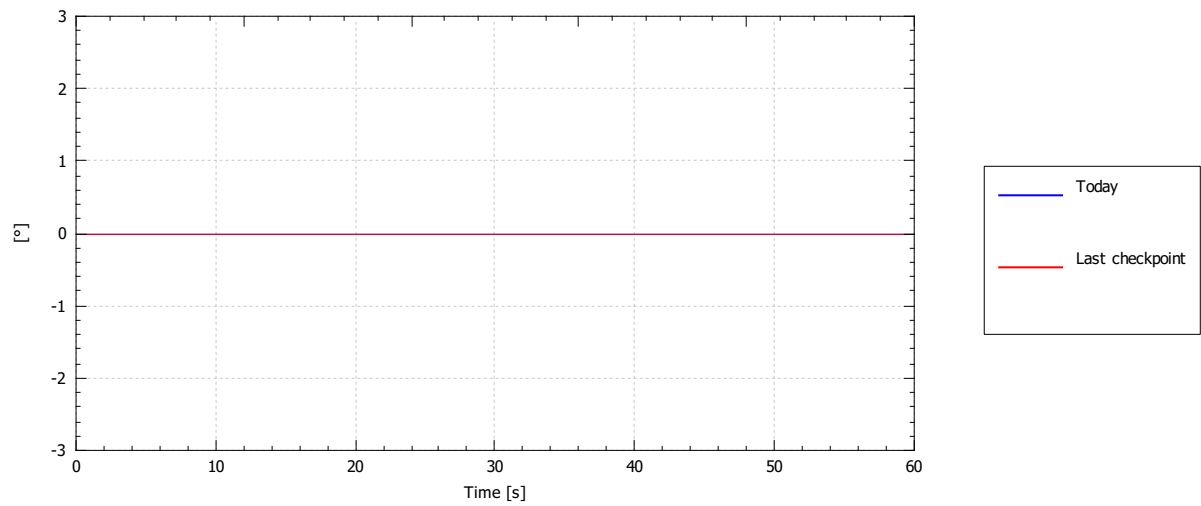


Demanded pitch controller

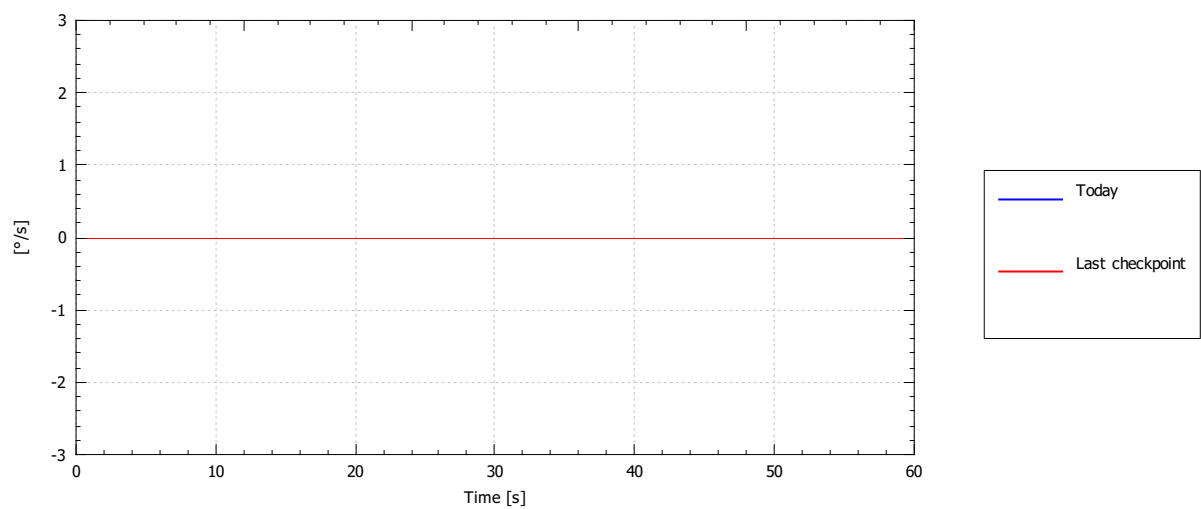
Demanded collective pitch angle



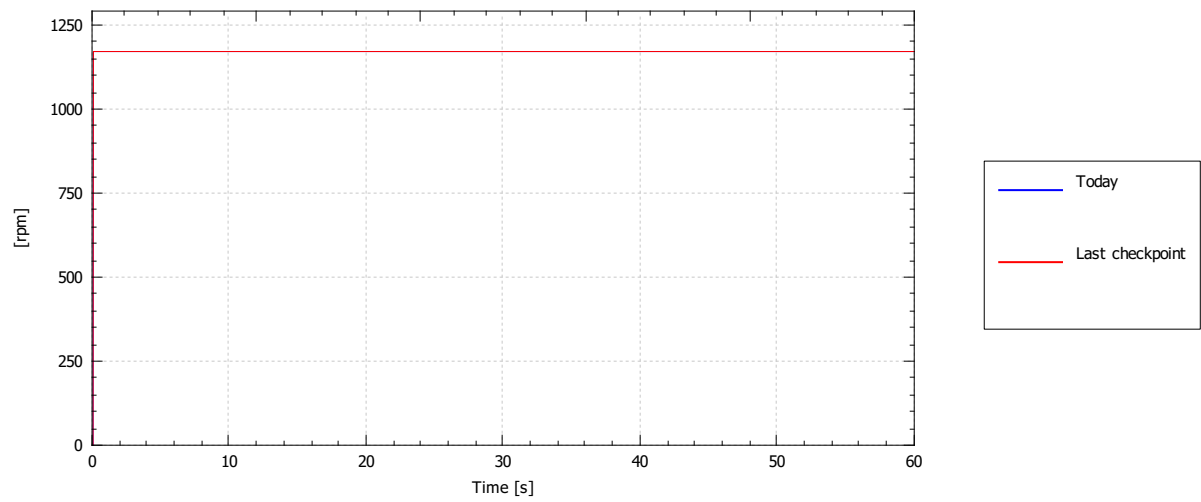
Cumulative demanded collective pitch angle



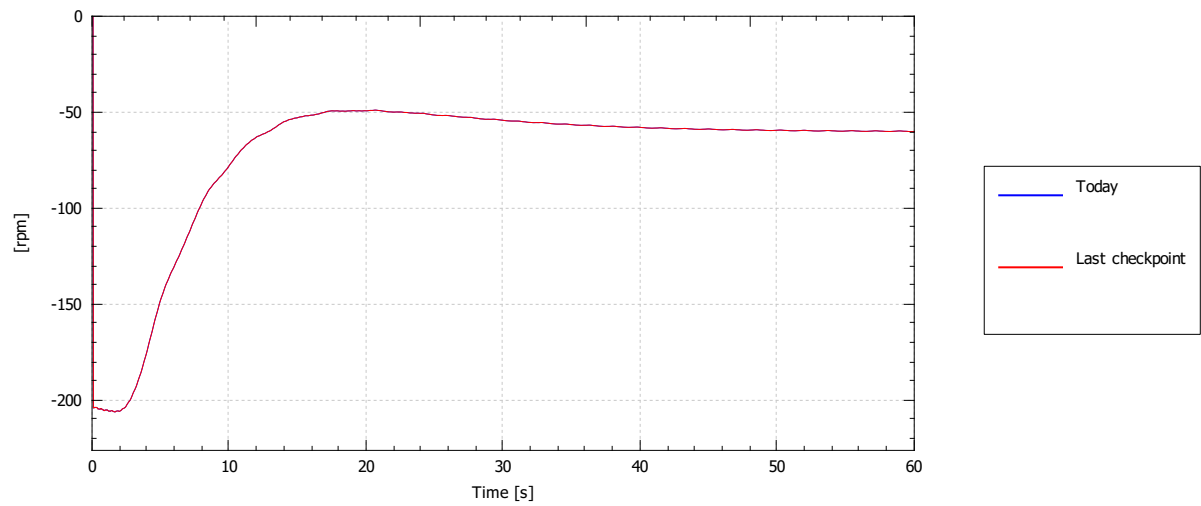
Demanded collective pitch angle rate



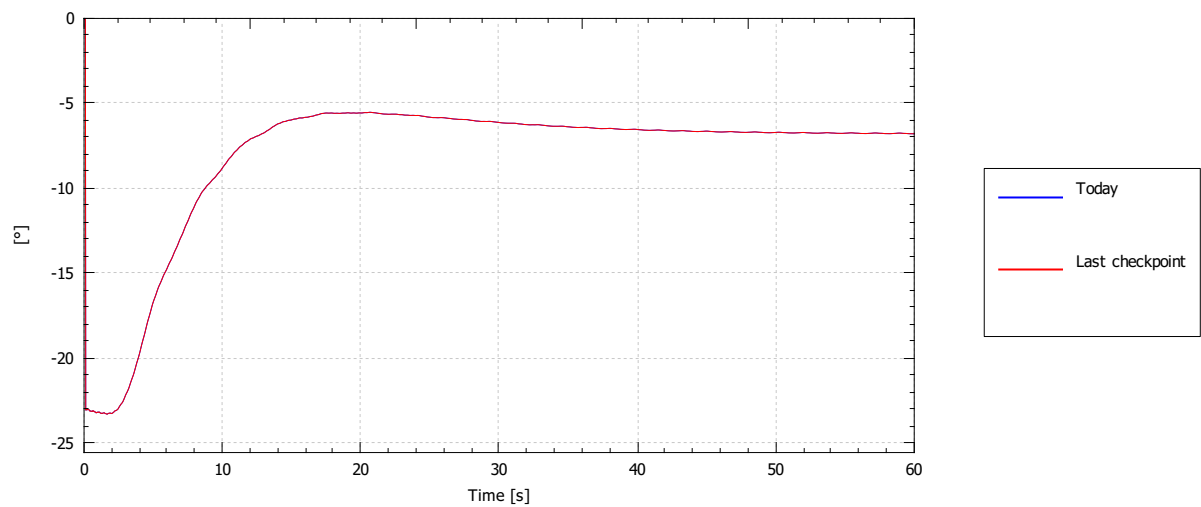
Set point



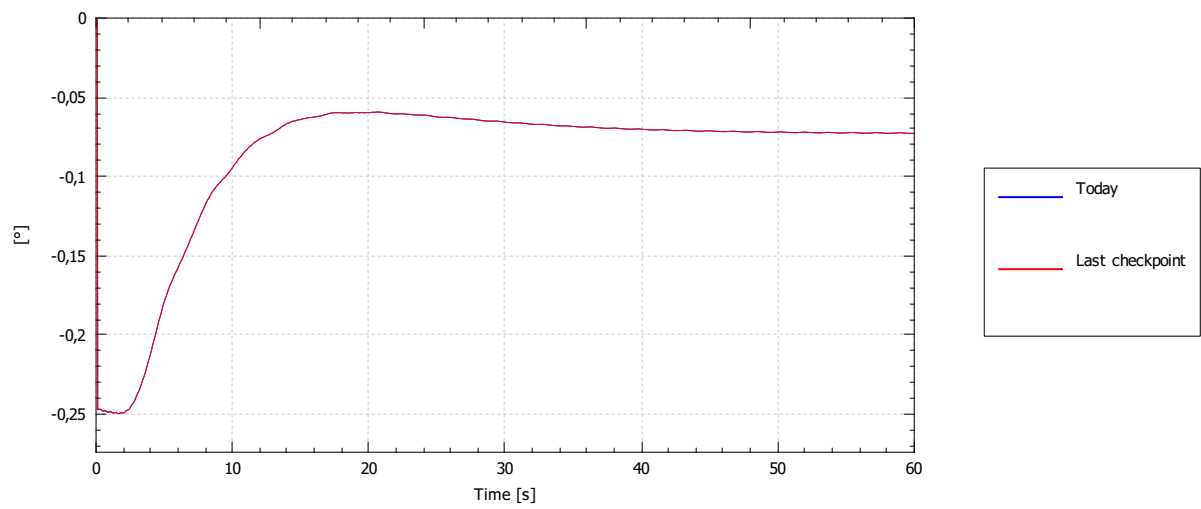
RPM error



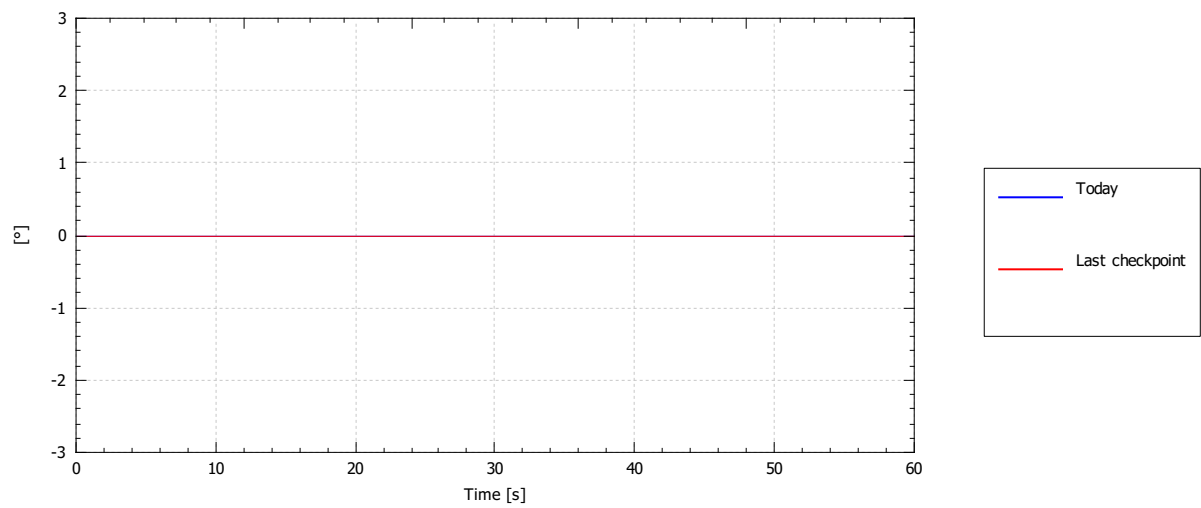
P term



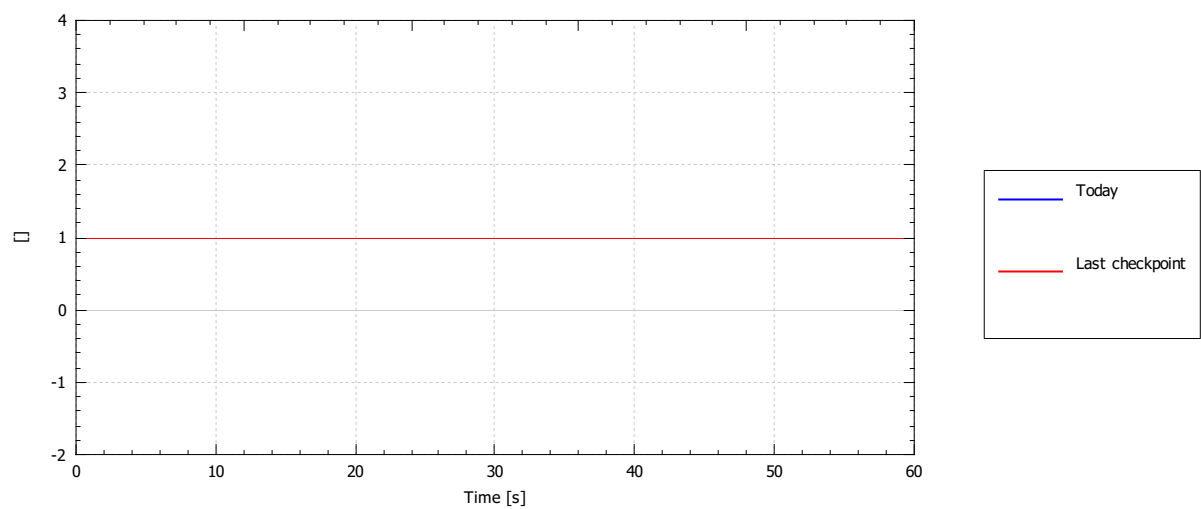
I term

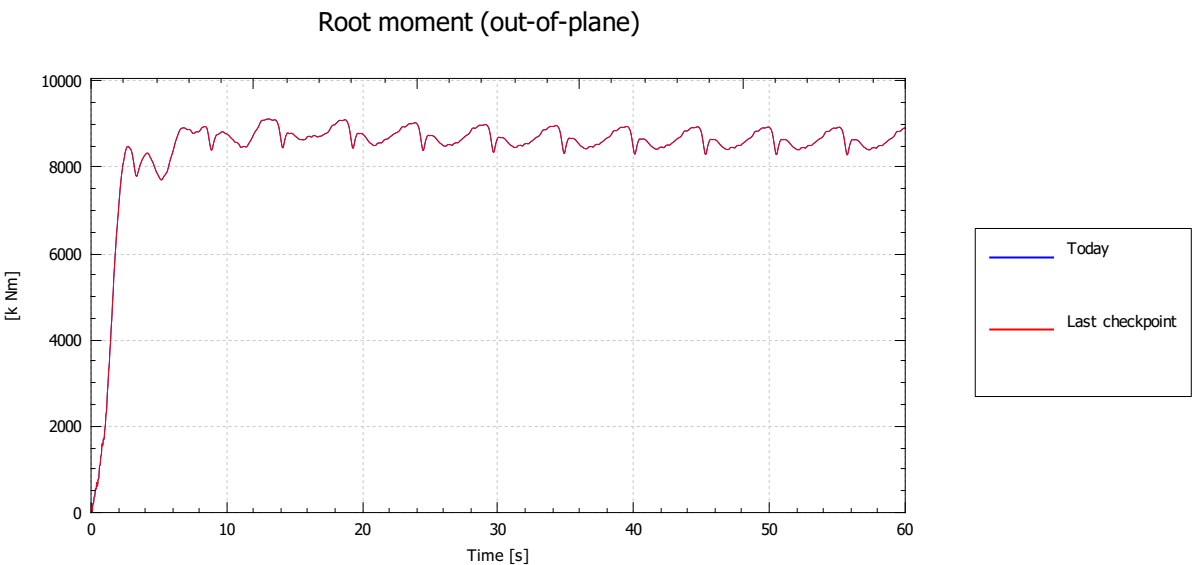
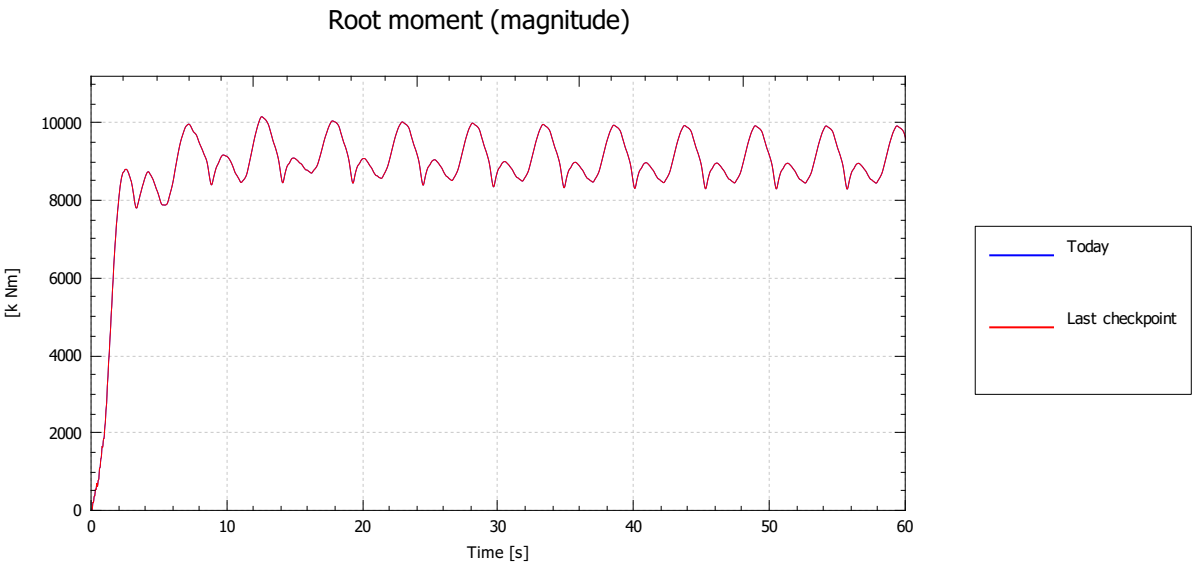
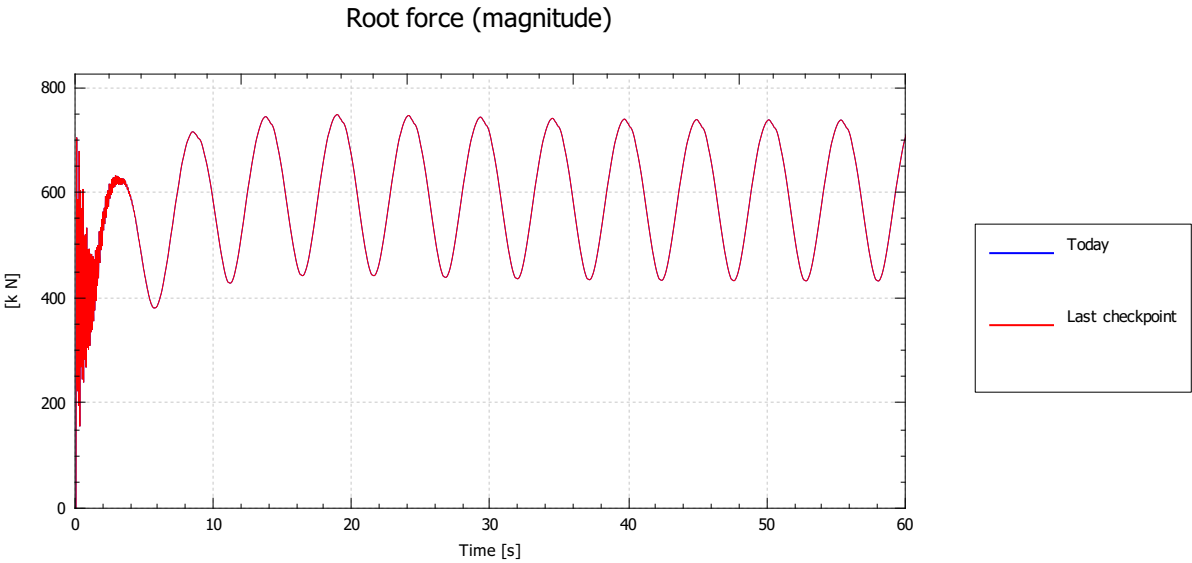


D term

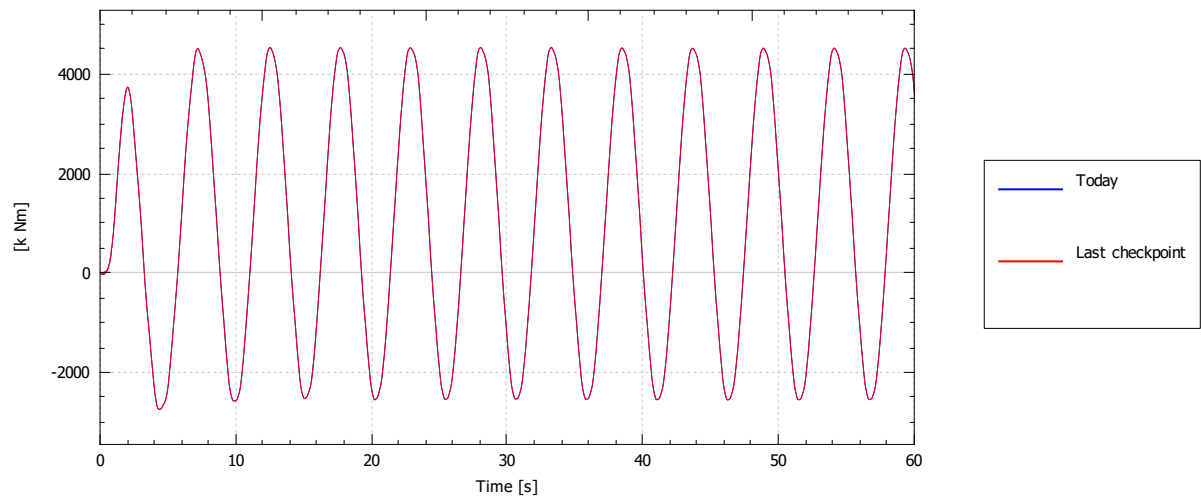


Gain scheduling factor

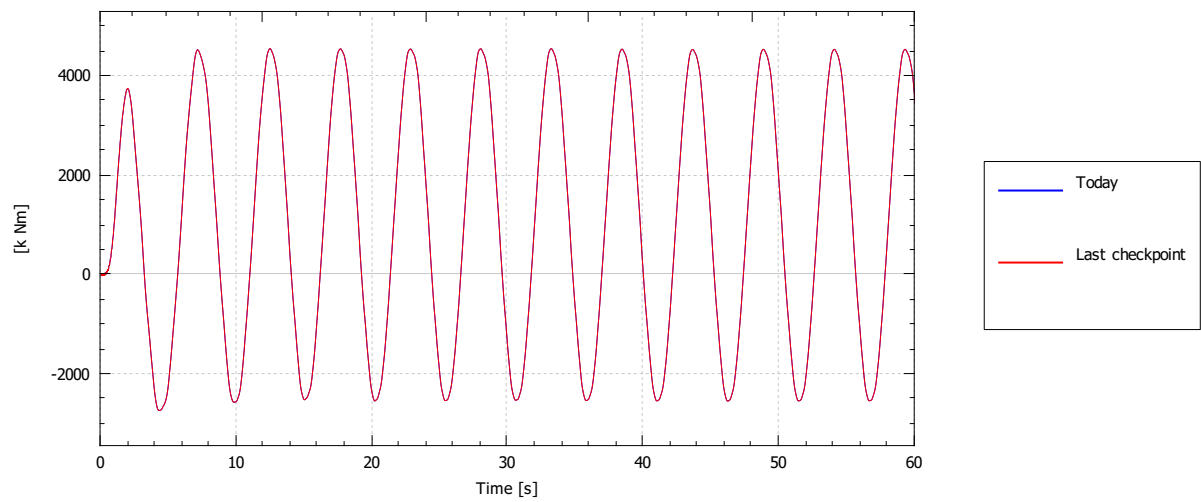




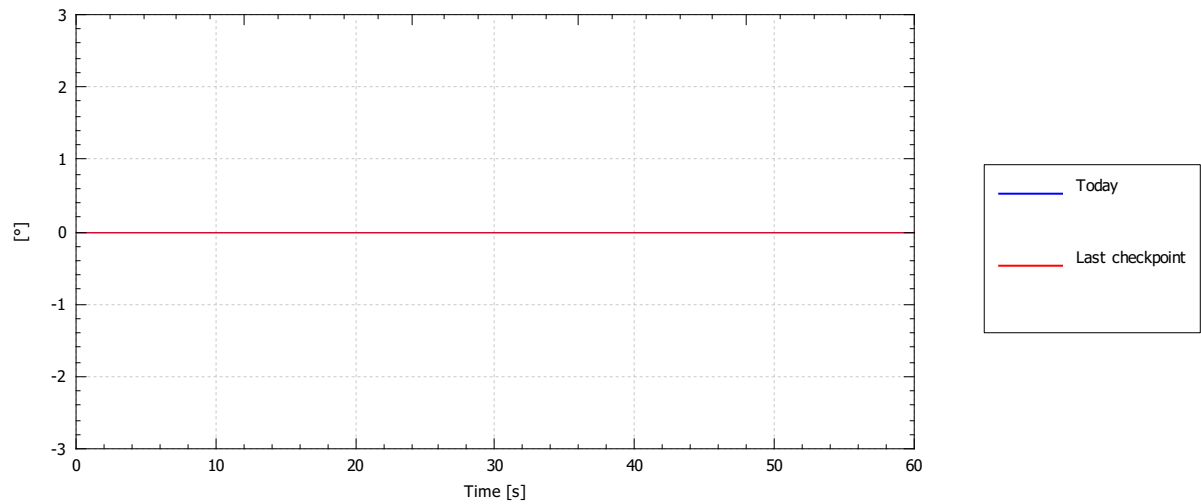
Root moment (in-plane)



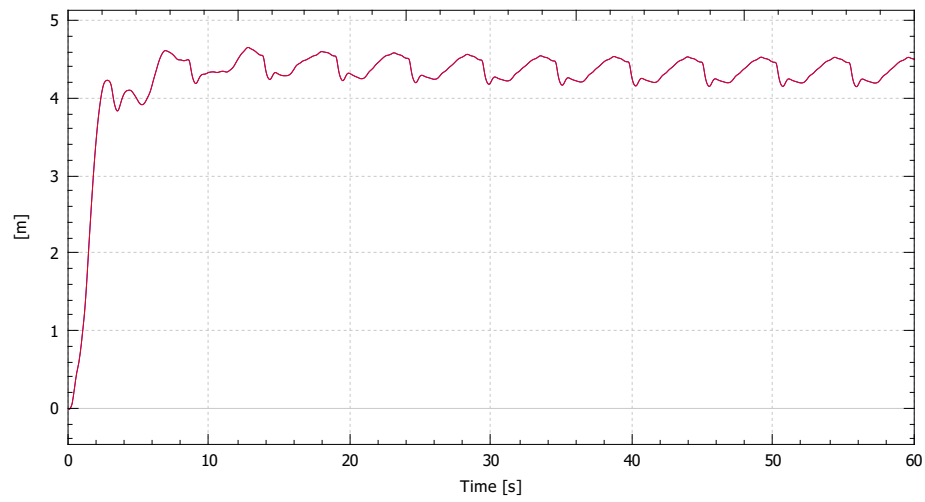
Root moment about shaft



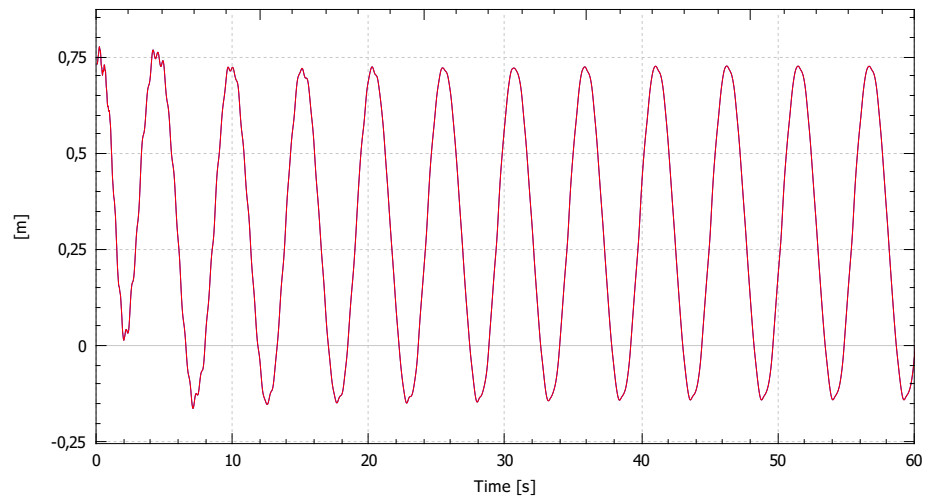
Pitch angle



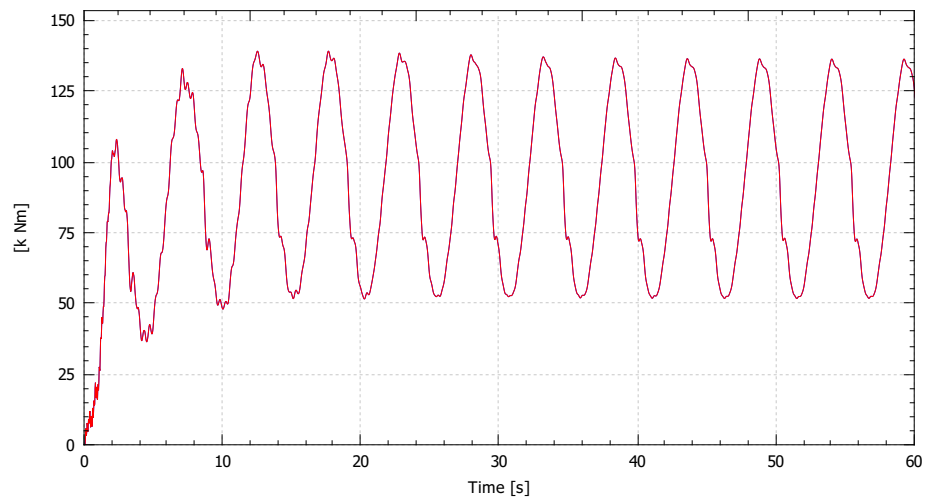
Tip deflection (out-of-plane)

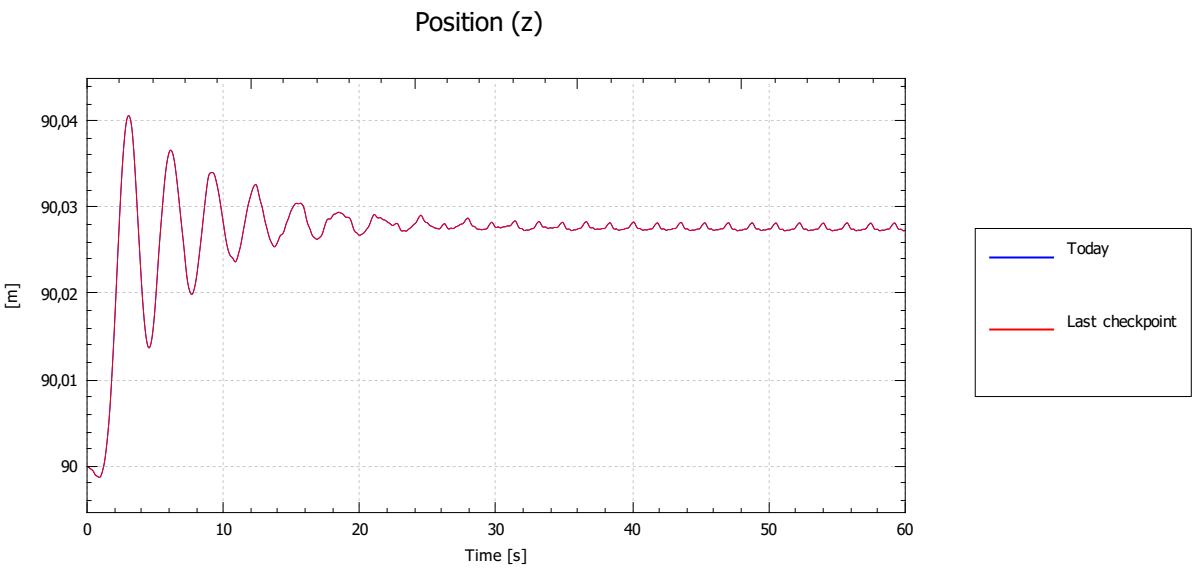
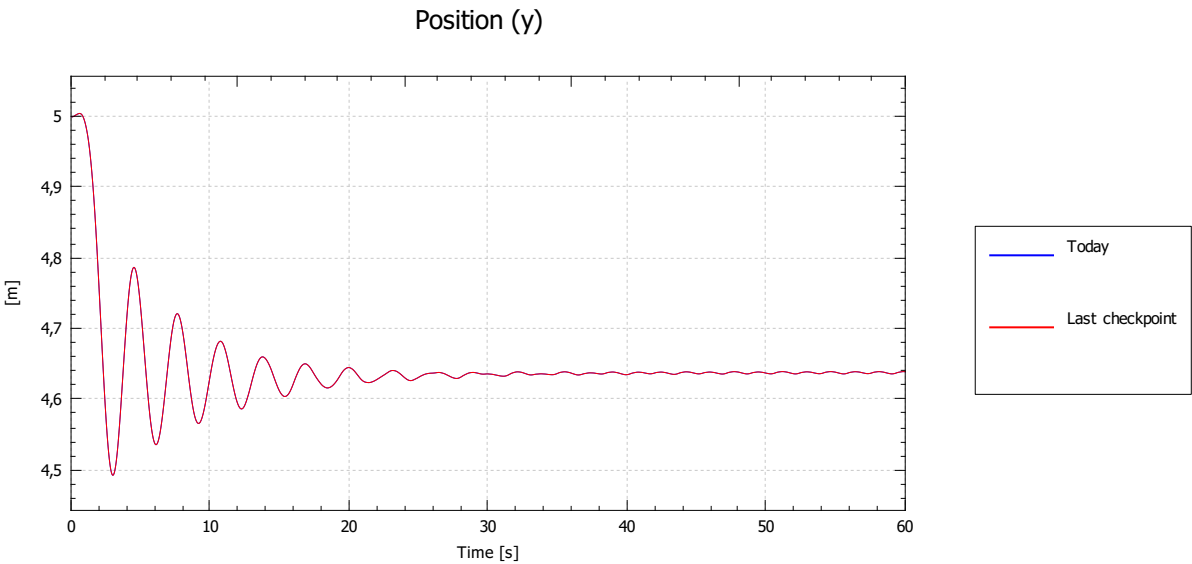
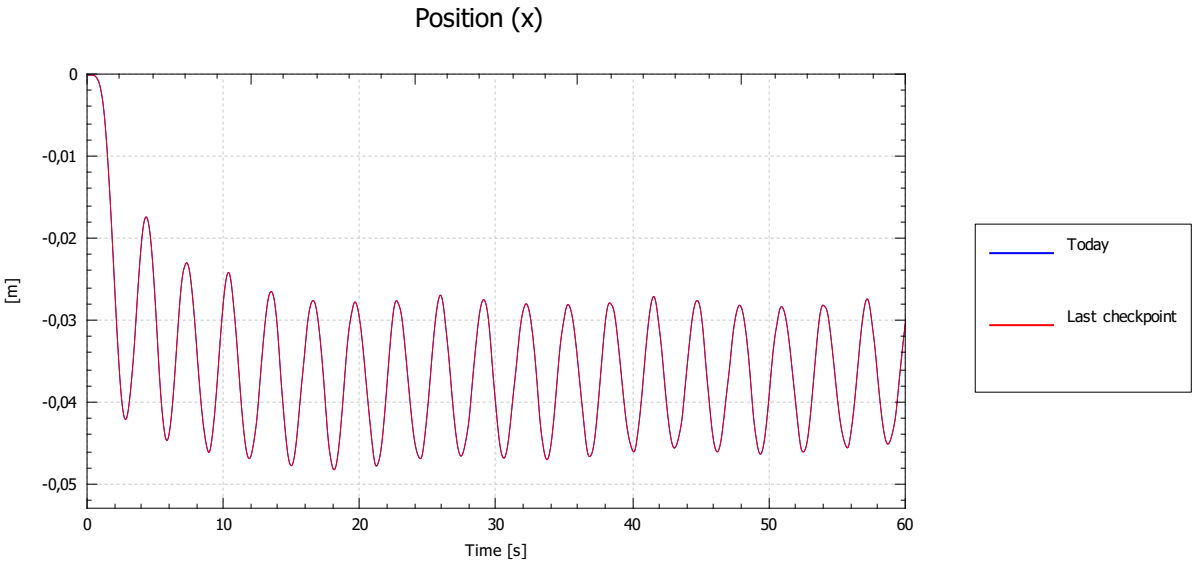


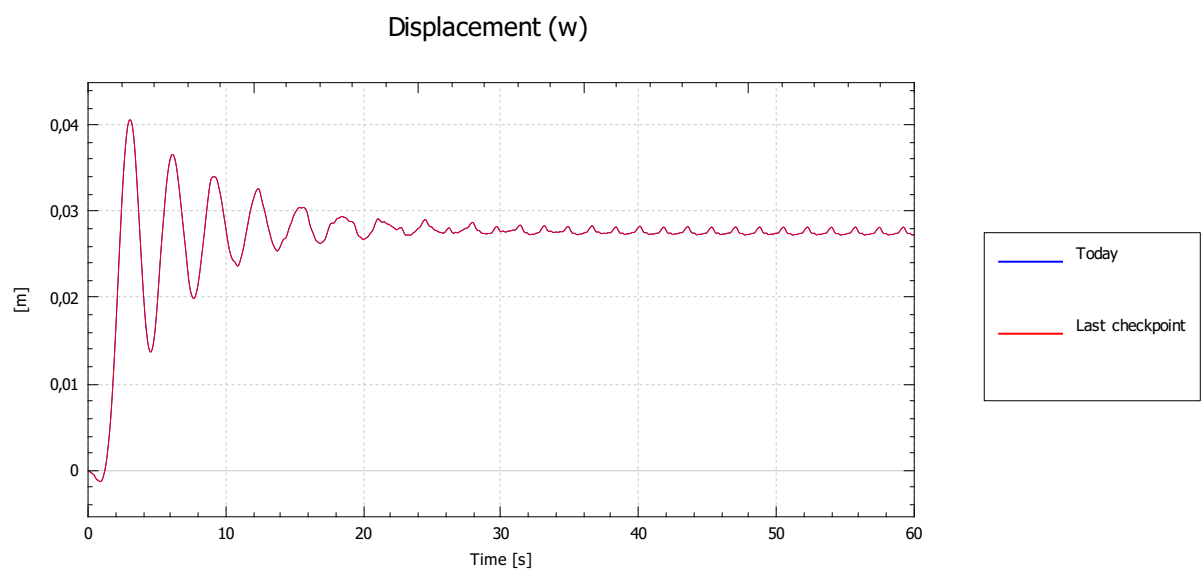
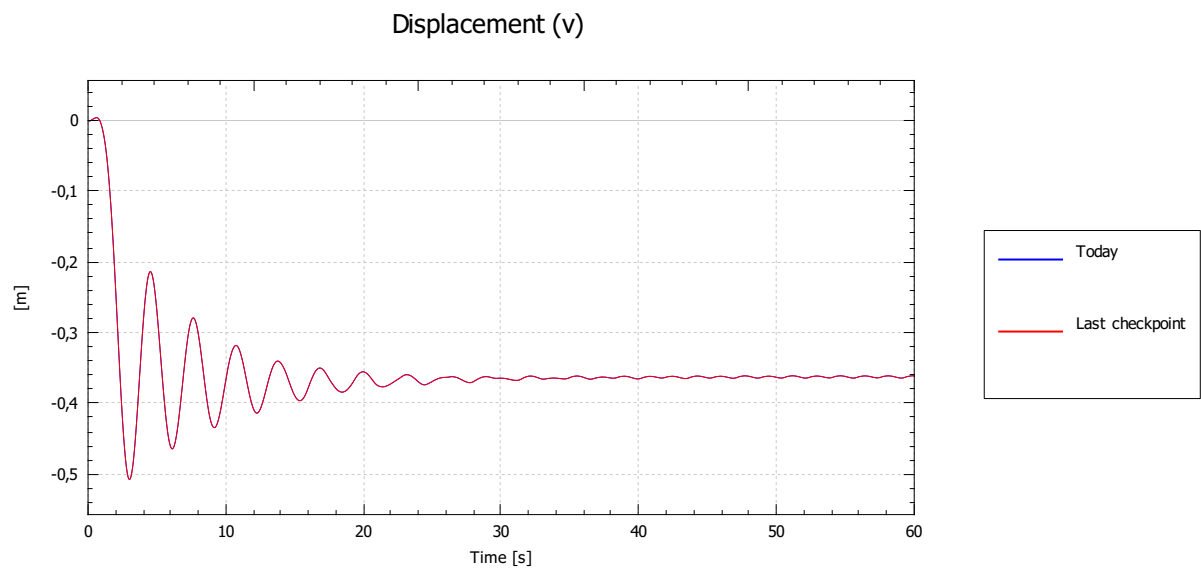
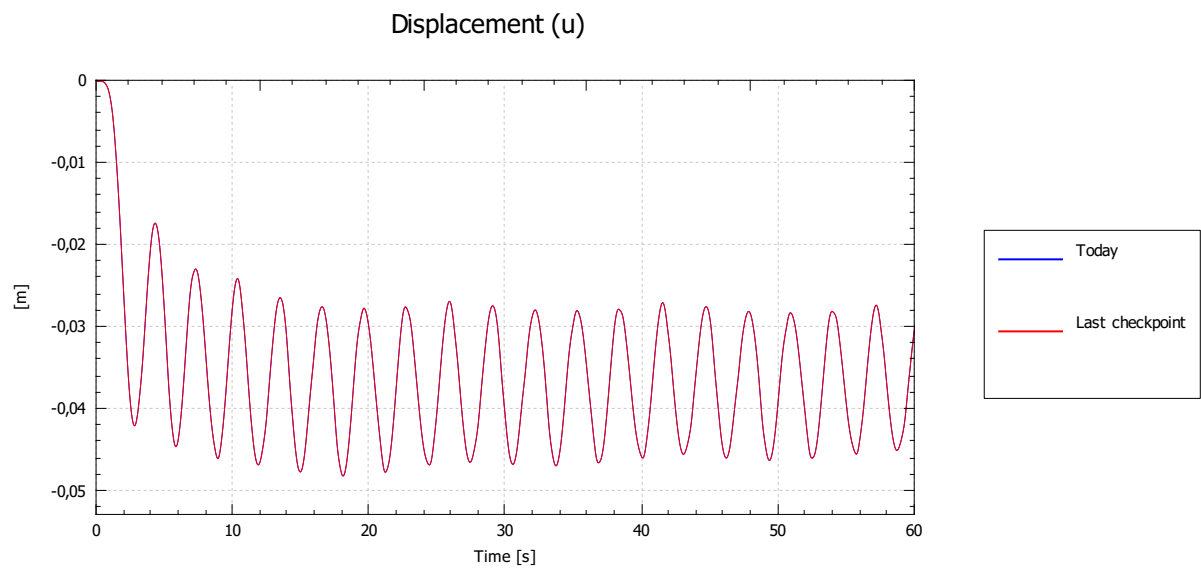
Tip deflection (in-plane)



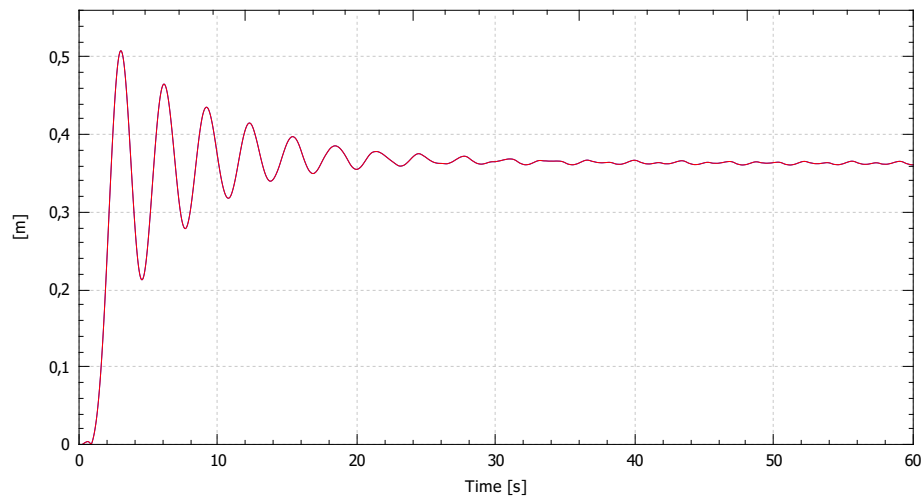
Root torque



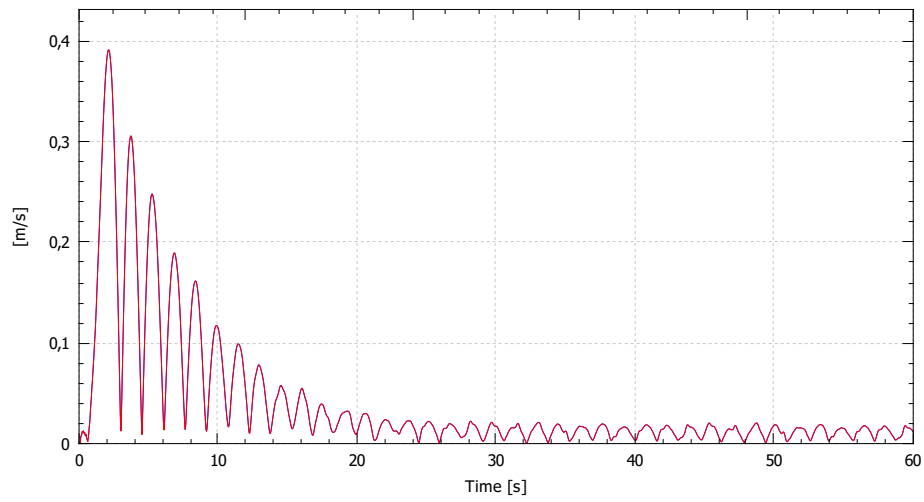




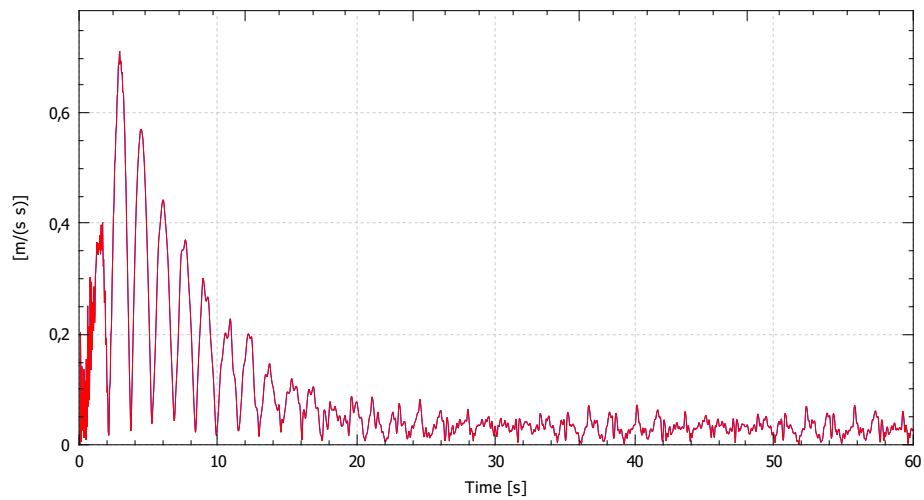
Displacement magnitude



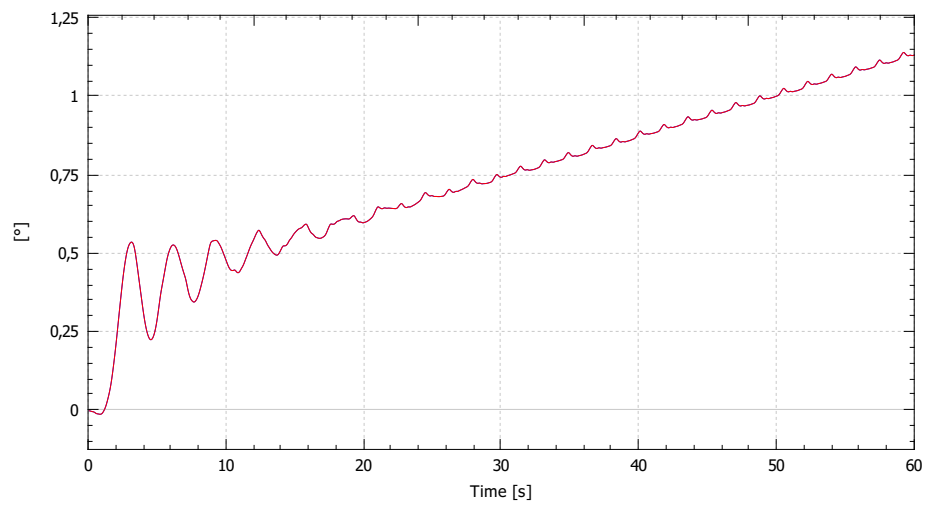
Speed



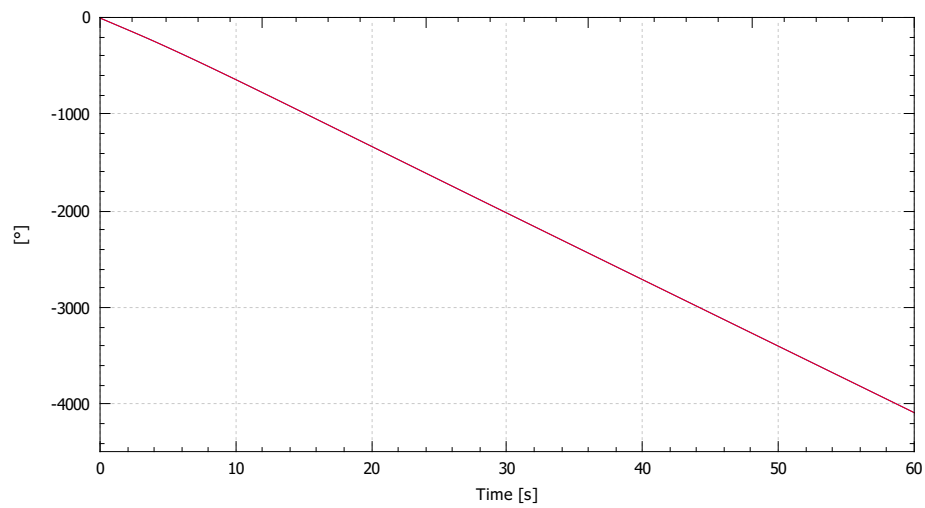
Acceleration, magnitude



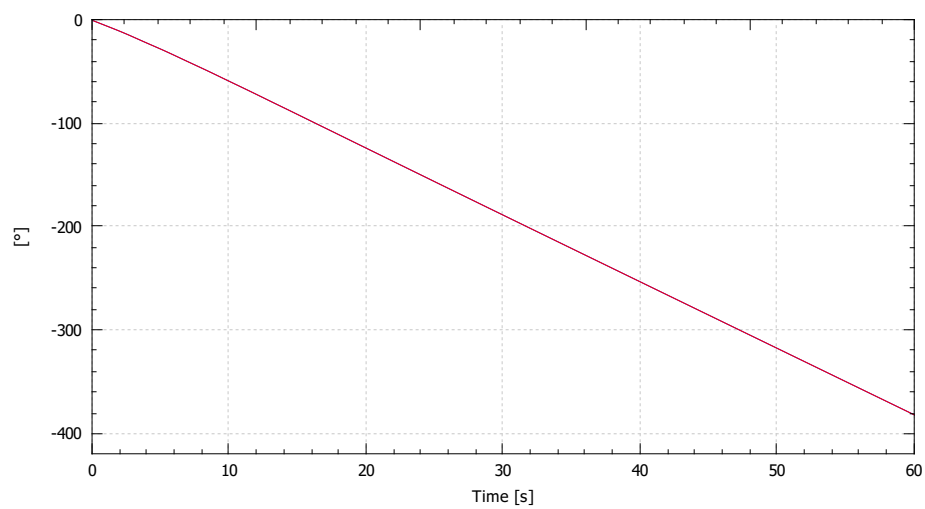
Rotational displacement (ru)



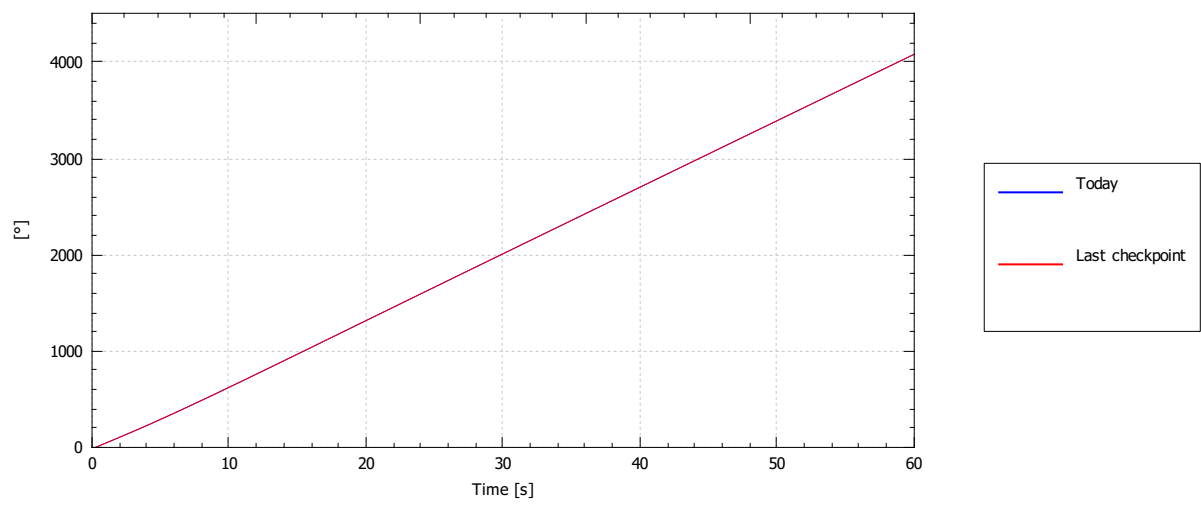
Rotational displacement (rv)



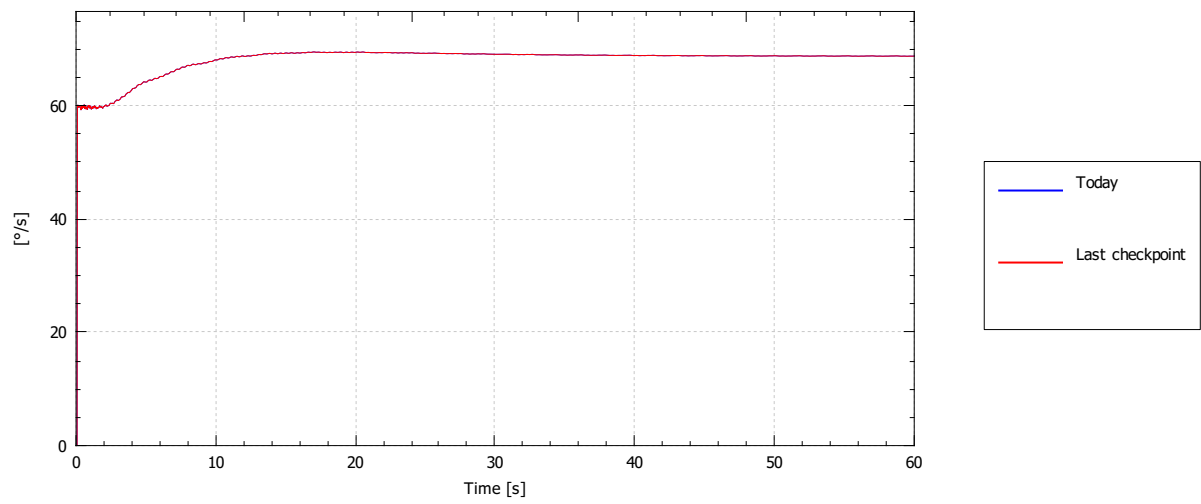
Rotational displacement (rw)



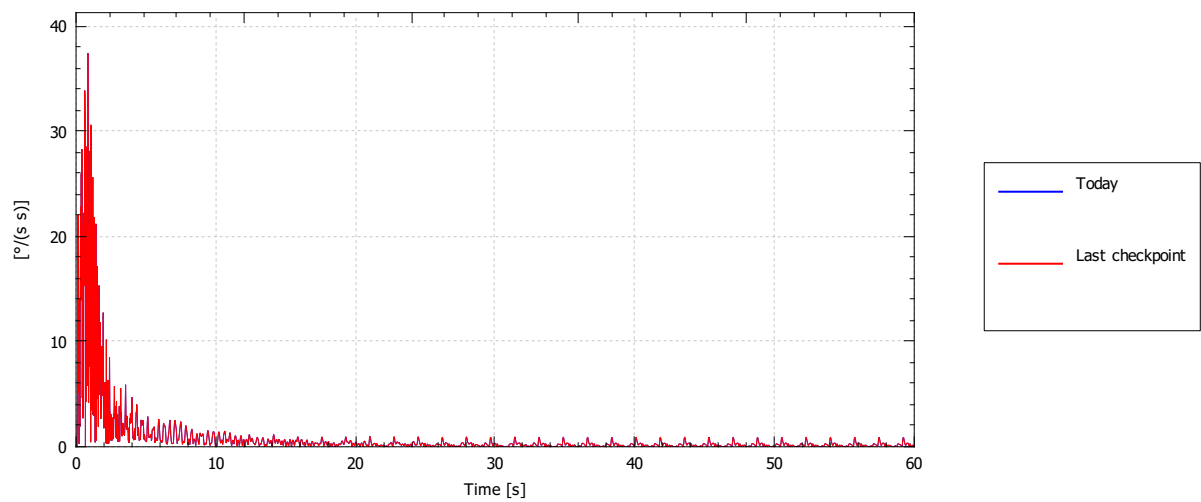
Rotational displacement magnitude



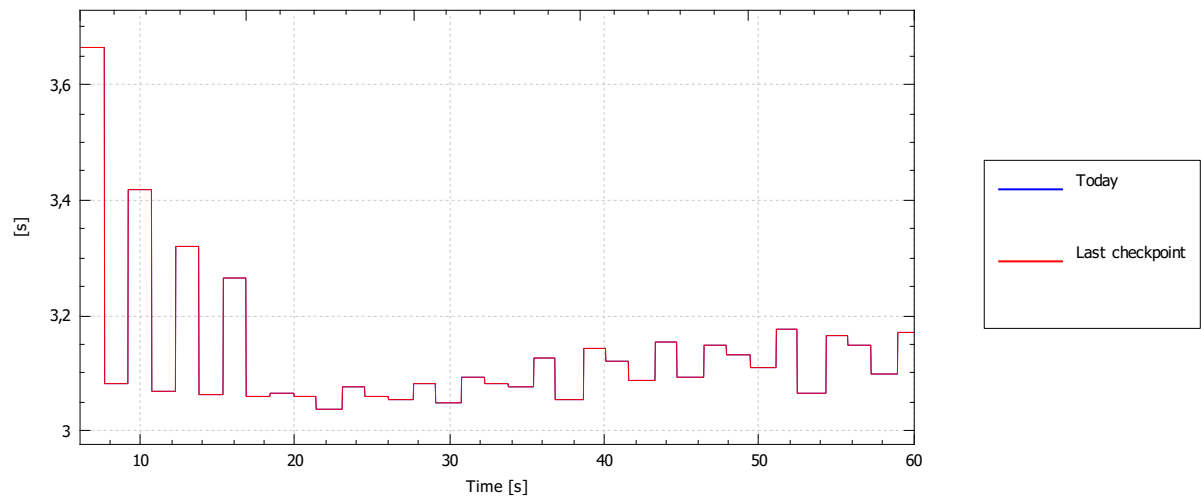
Rotational speed



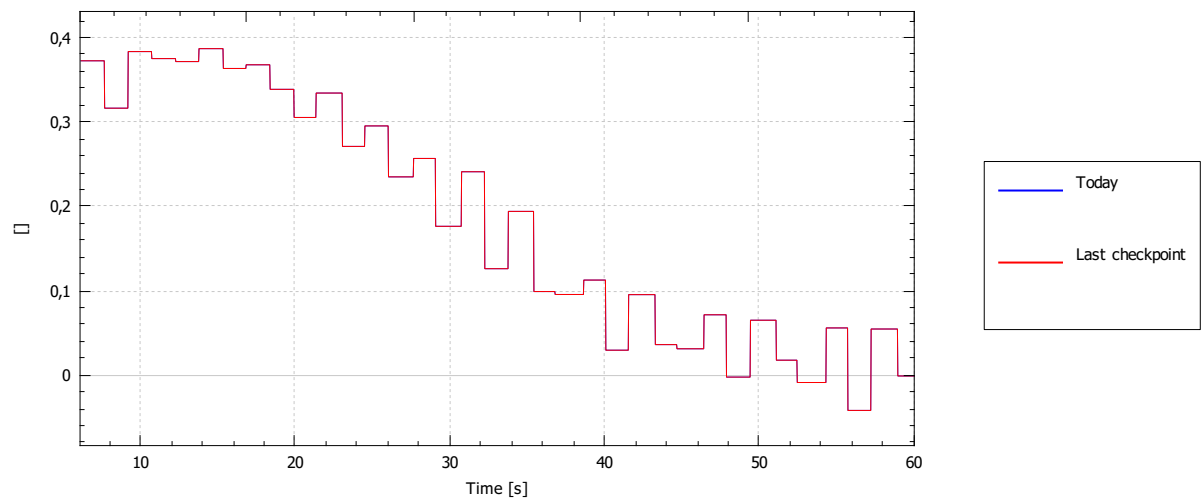
Rotational acceleration mag



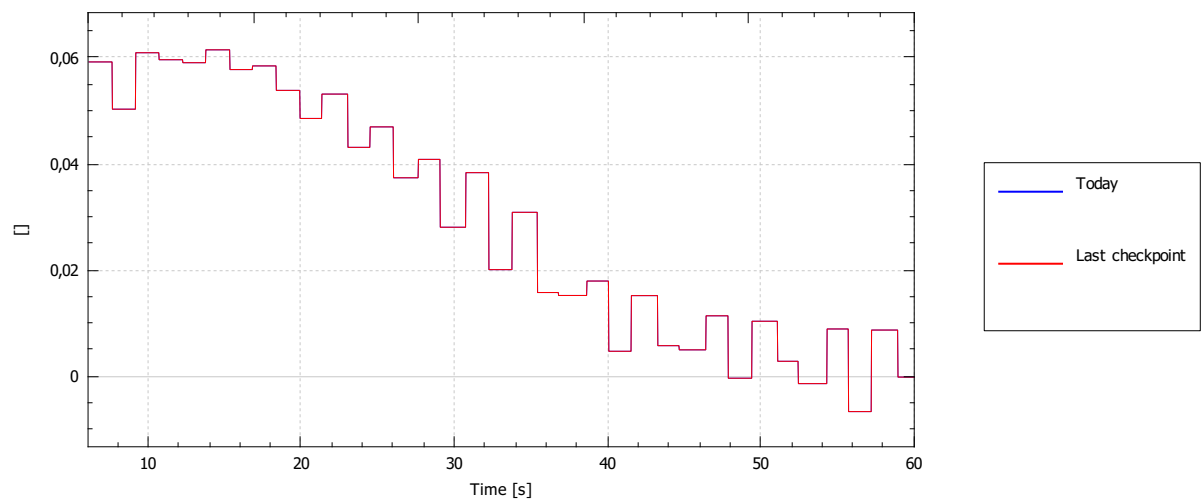
Displacement period



Displacement logarithmic decrement

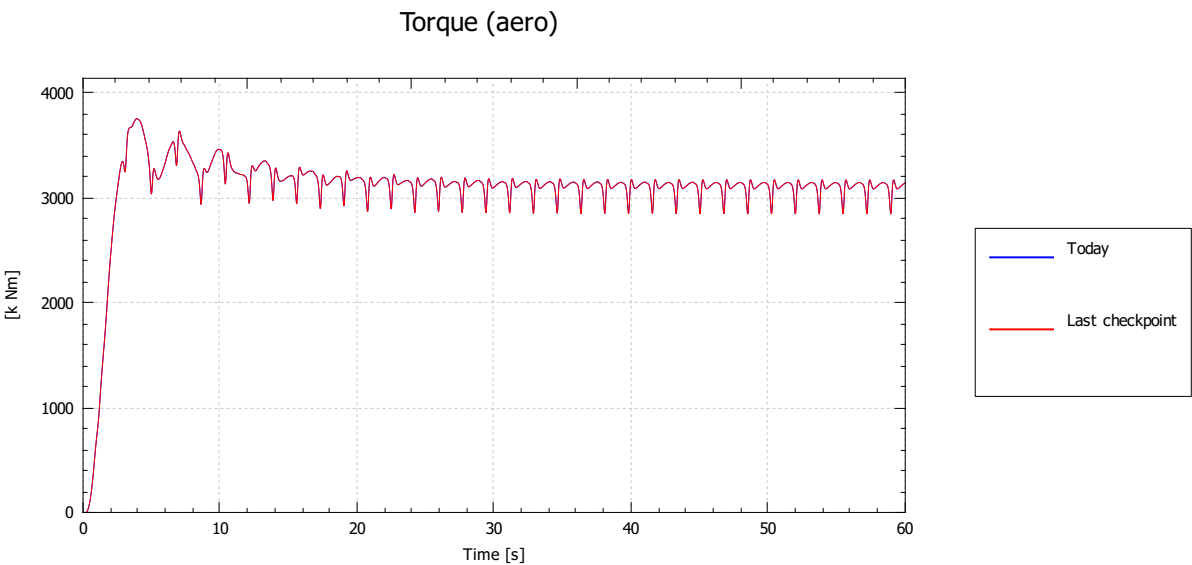
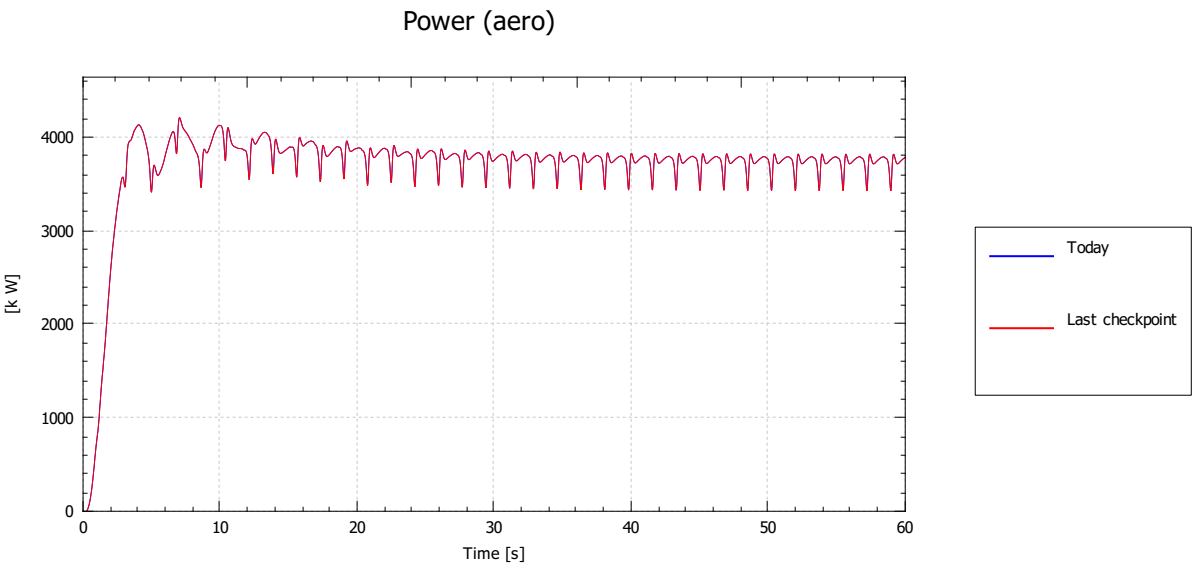


Displacement damping ratio

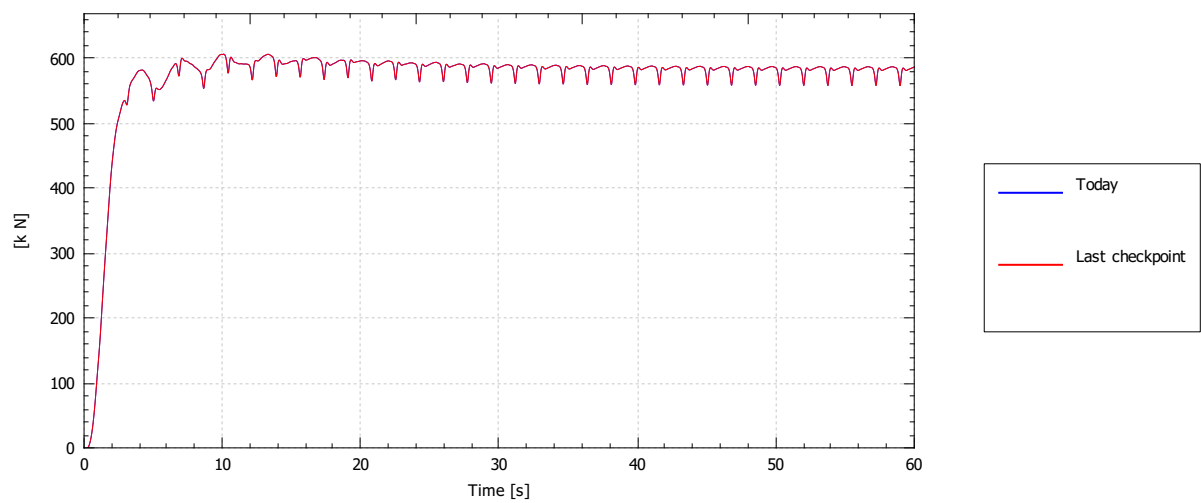


Load case: Target cut-in RPM

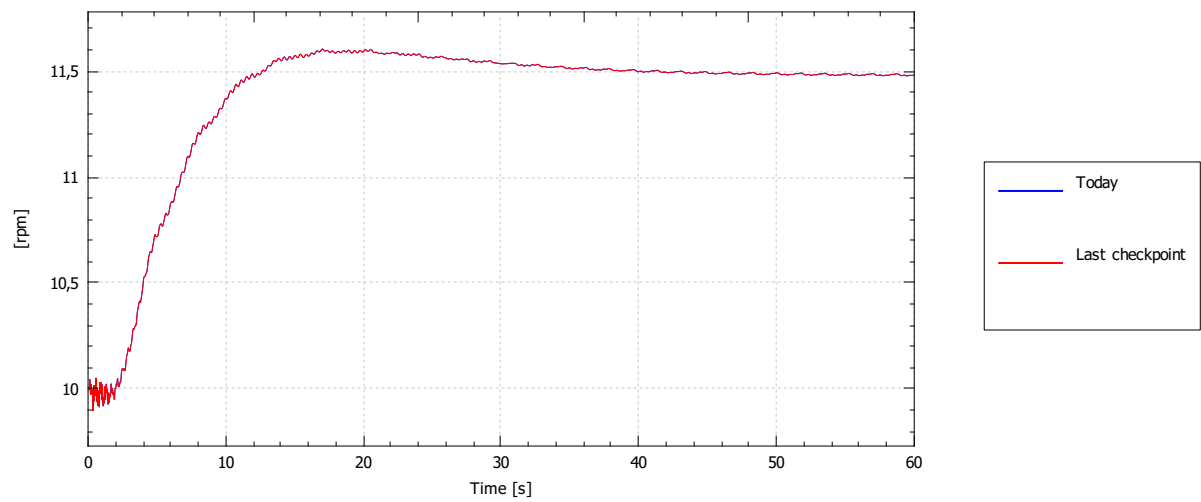
Rotor



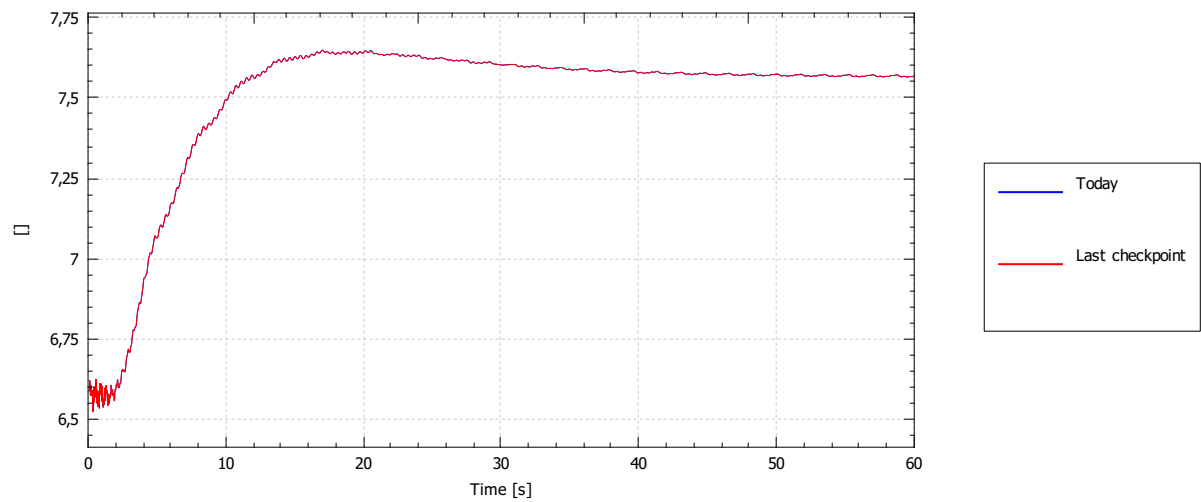
Thrust (aero)



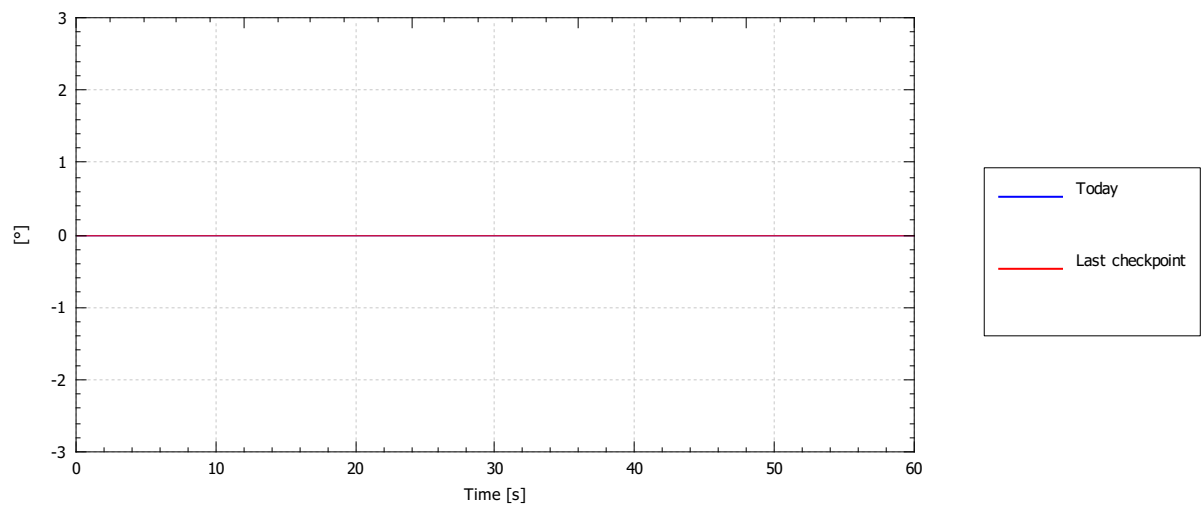
RPM



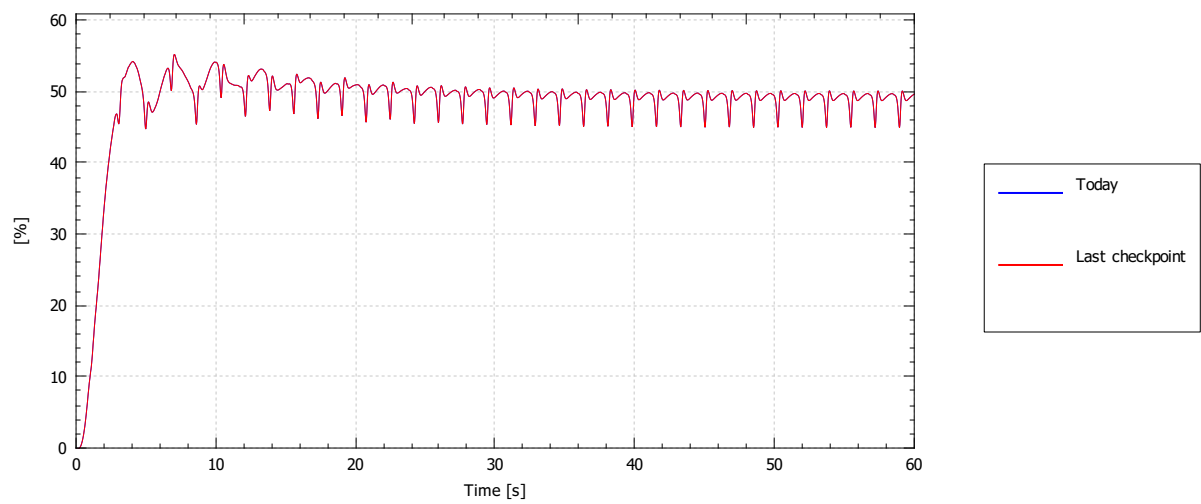
TSR



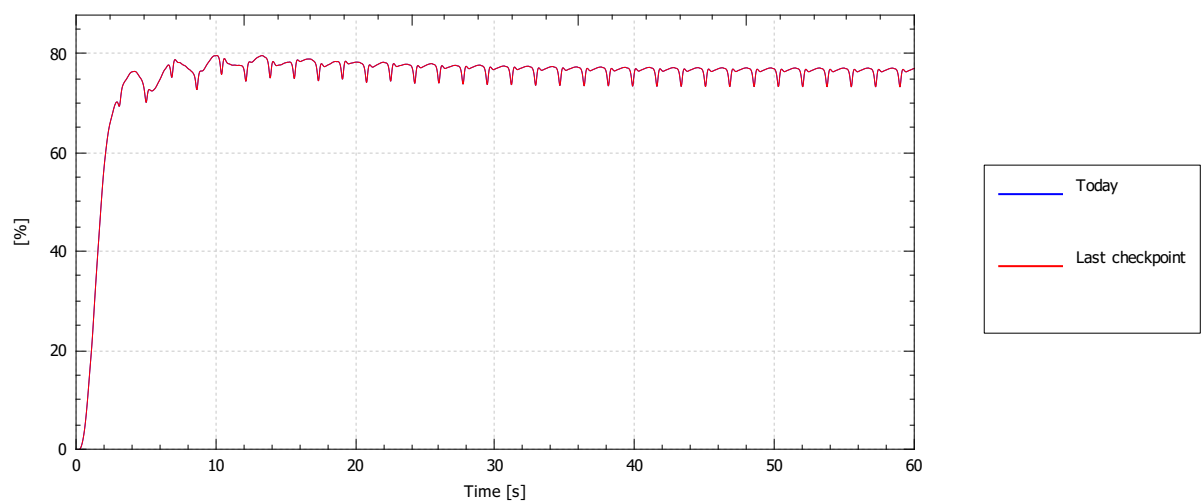
Representative demanded pitch angle



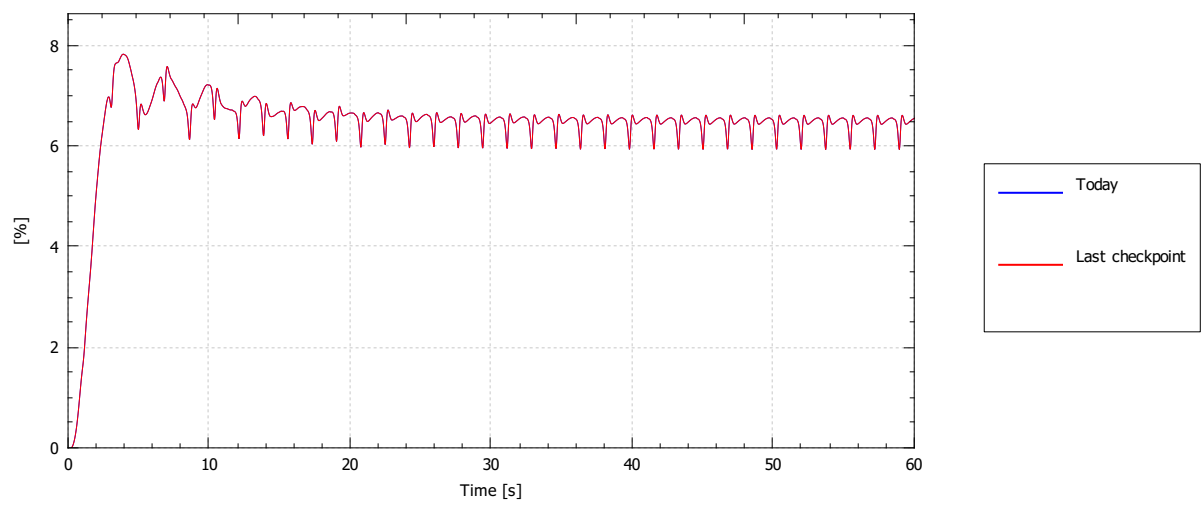
Power coef. (CP)



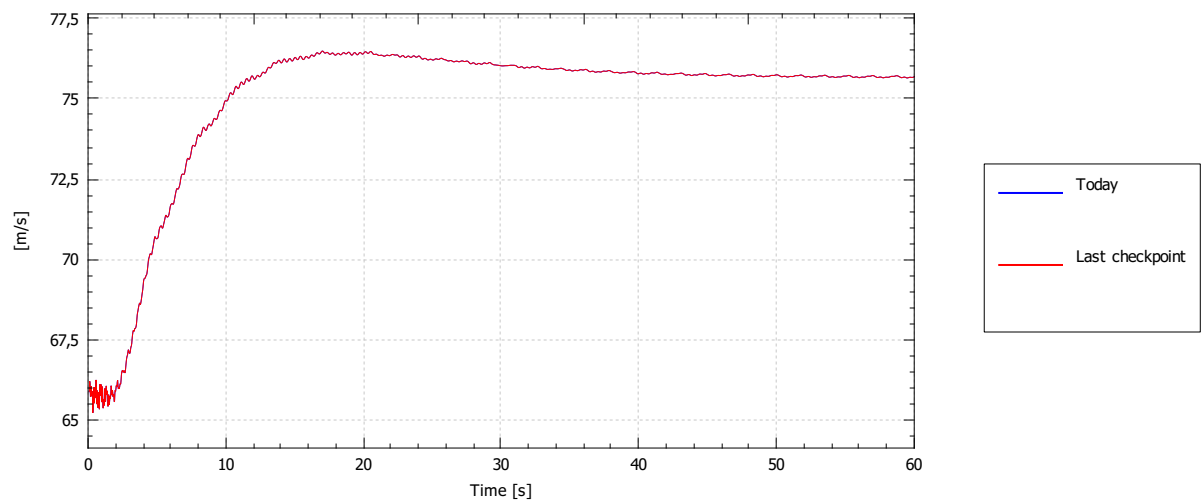
Thrust coef. (CT)



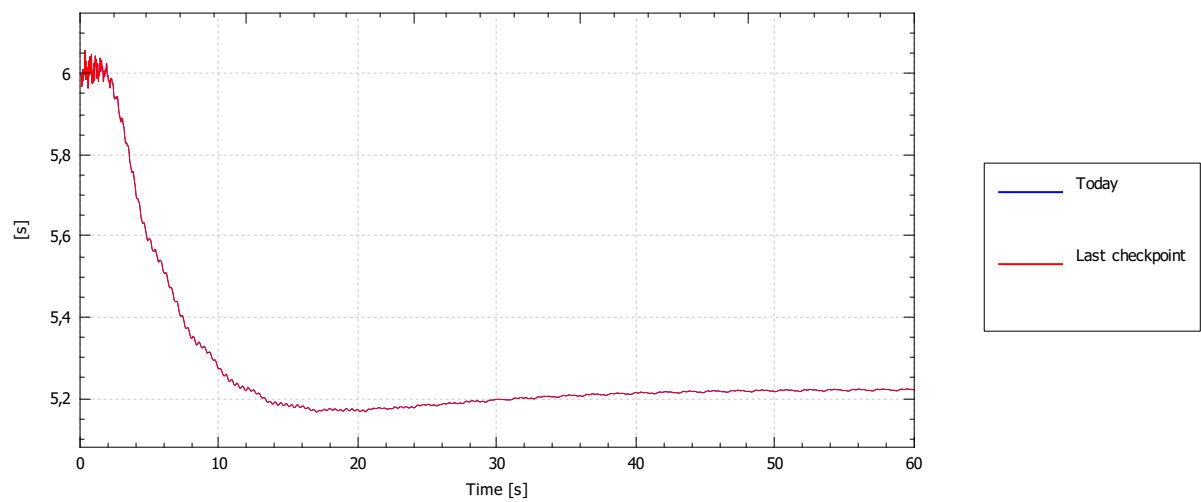
Torque coef. (CQ)



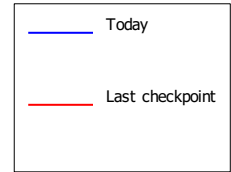
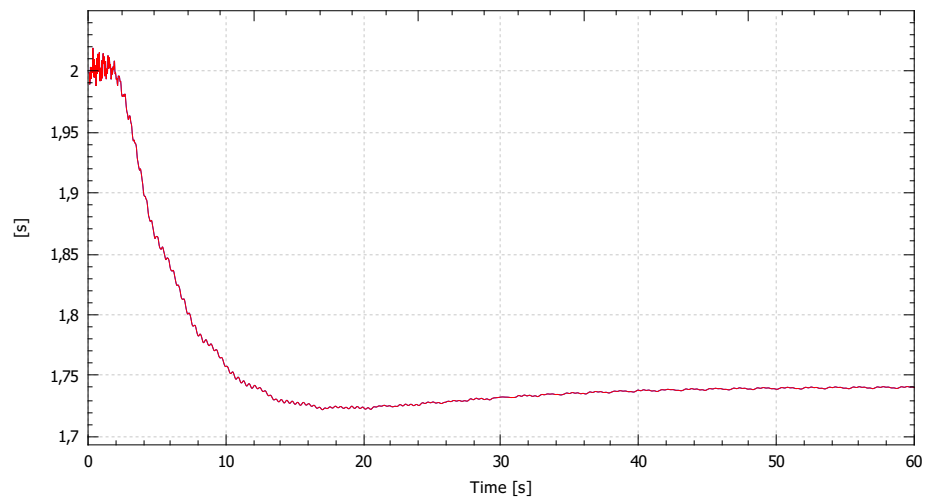
Tip speed



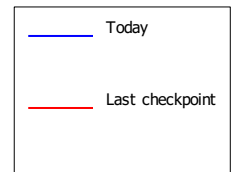
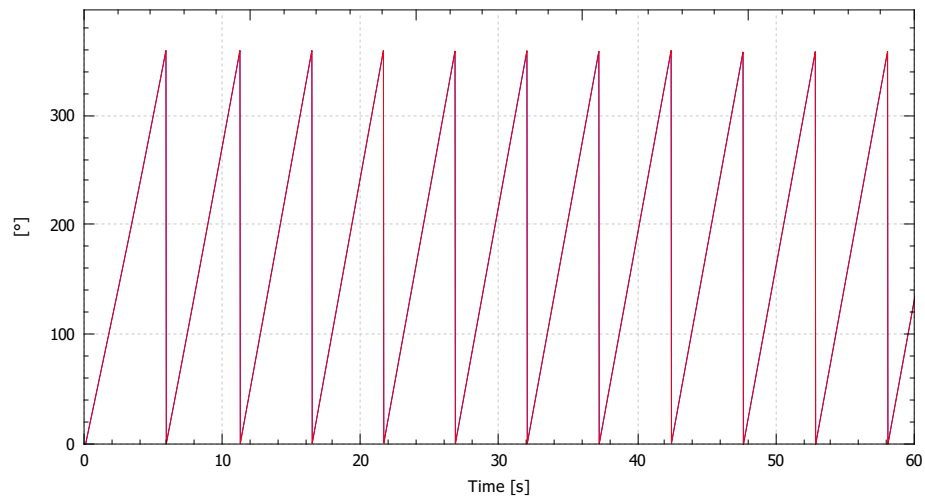
1P (one revolution)



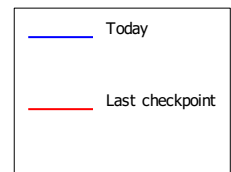
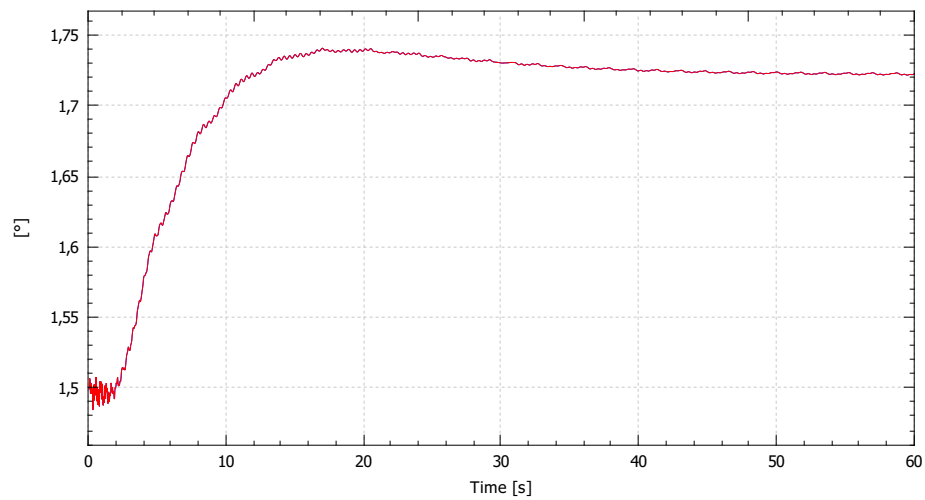
nP (blade passing)



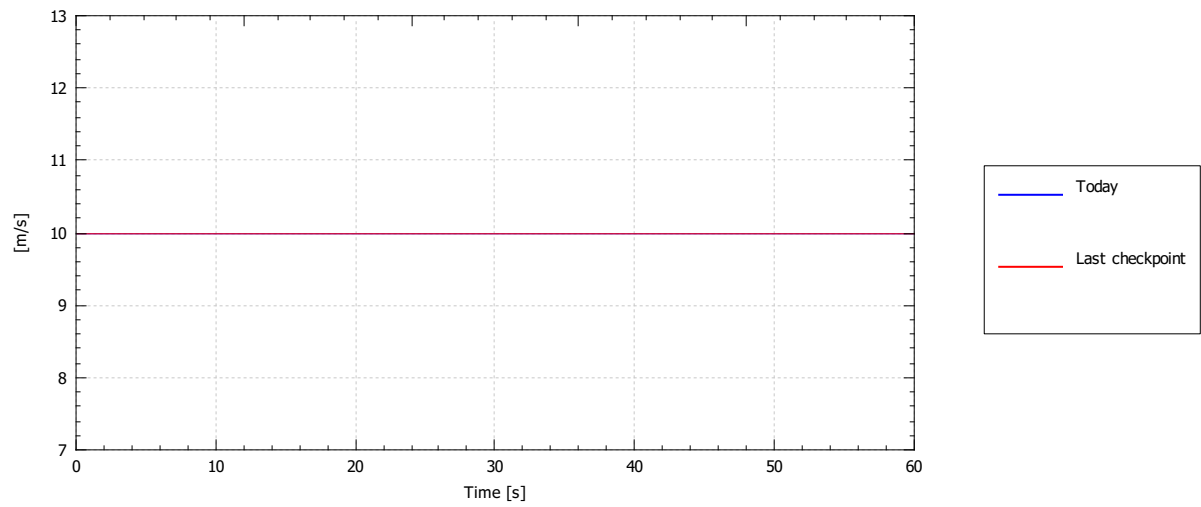
Azimuth angle



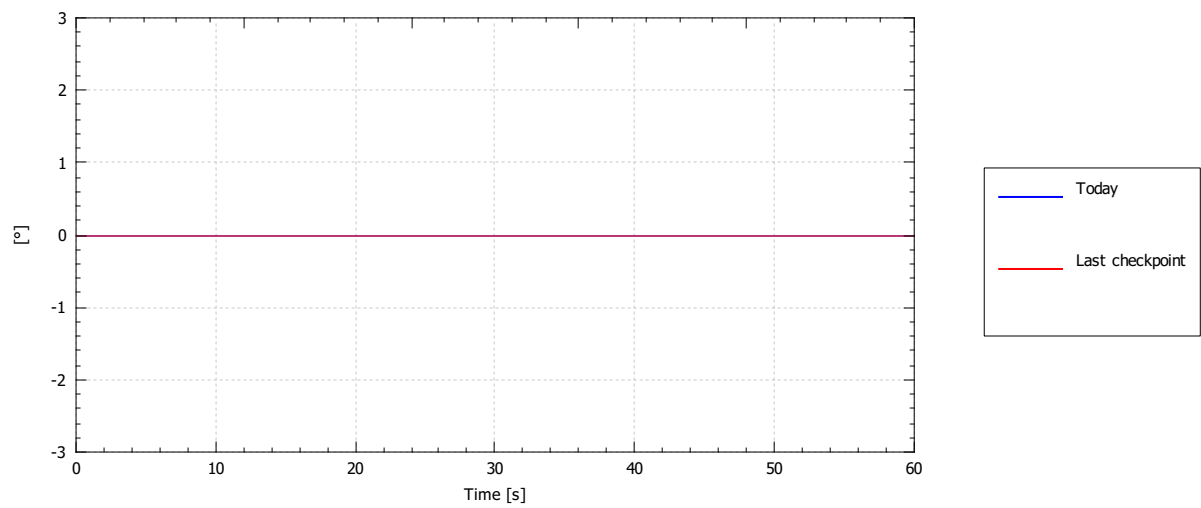
Rotation per timestep



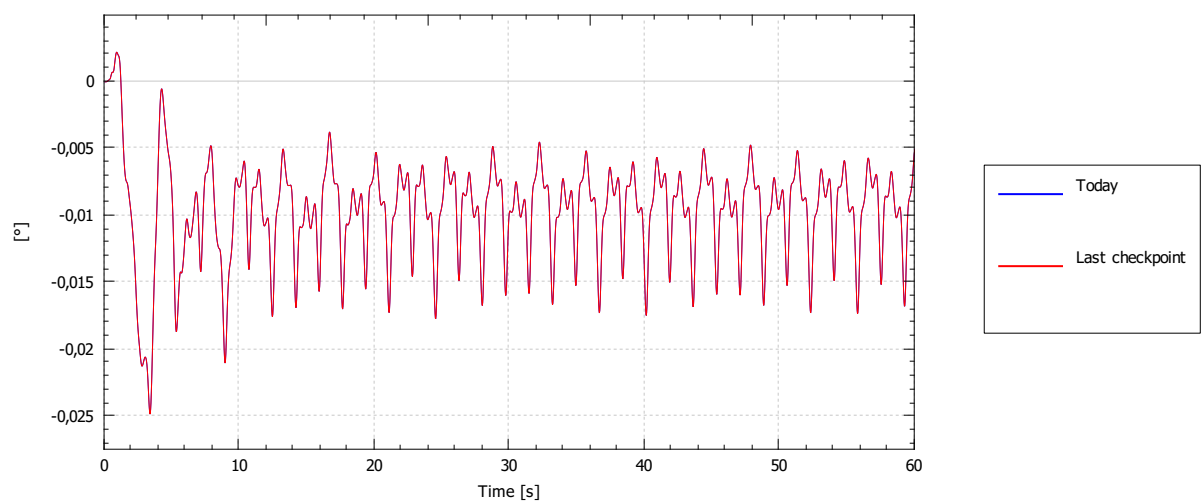
Wind speed at hub, magnitude



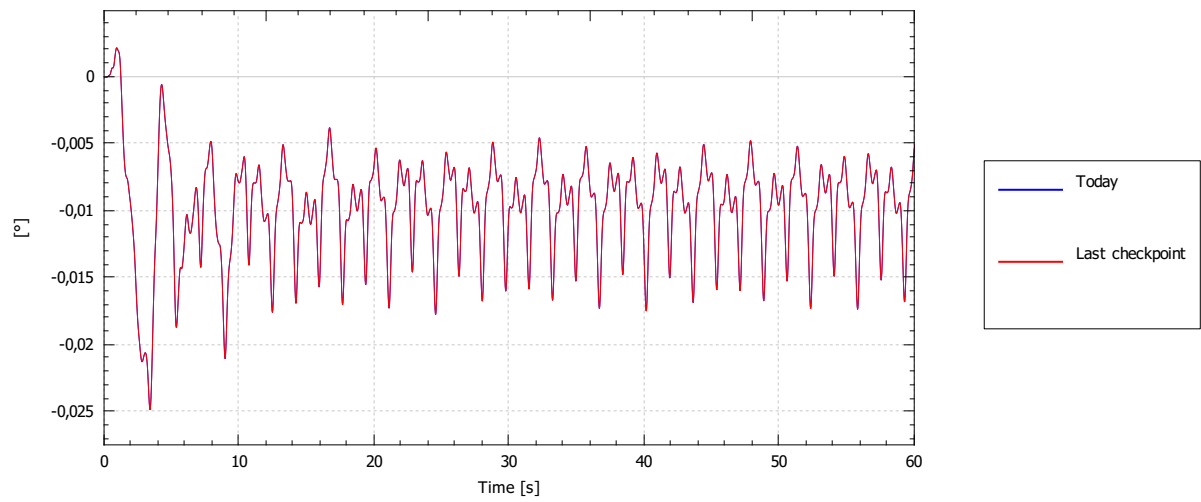
Wind angle at hub



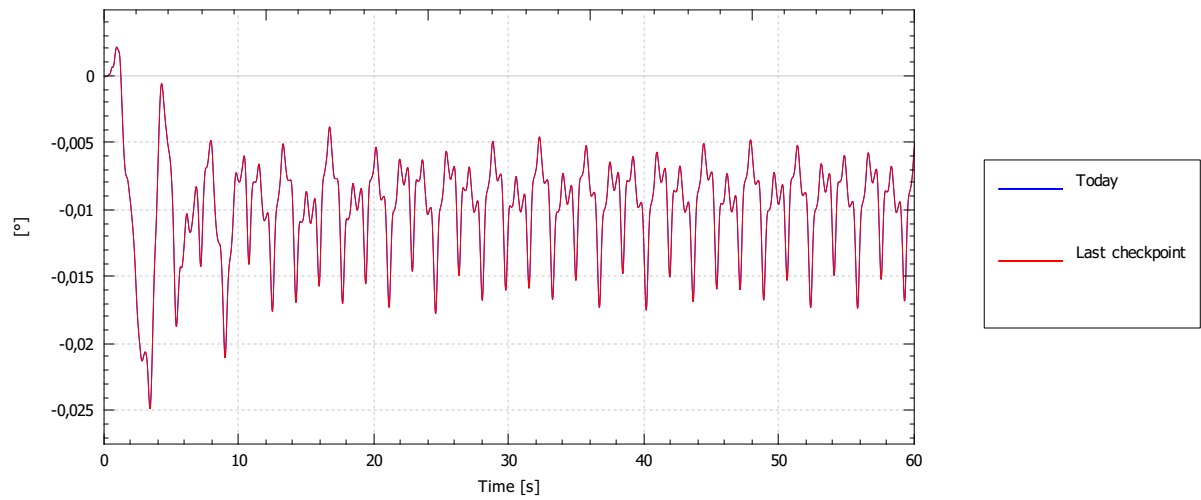
Yaw angle relative to forward



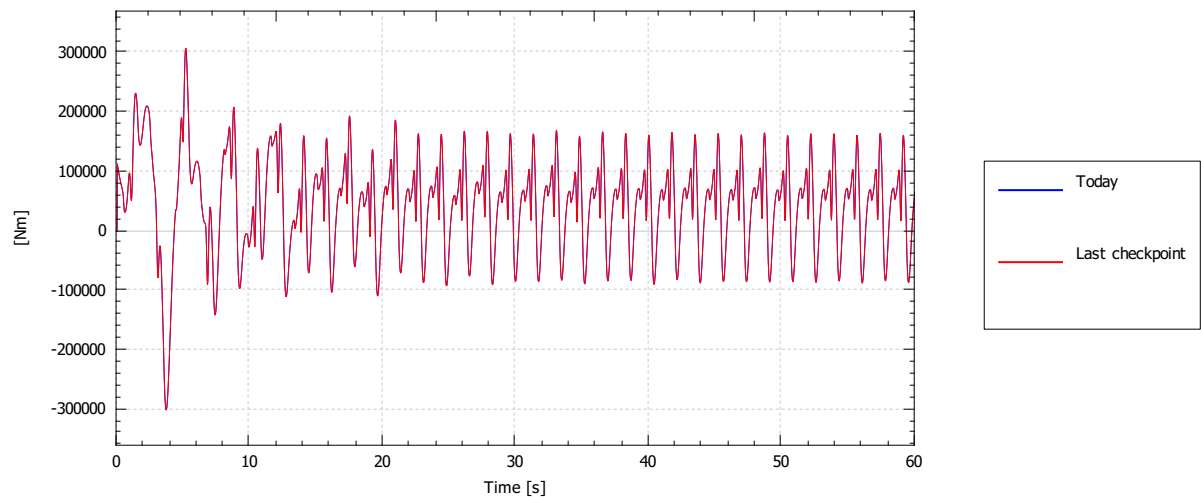
Yaw angle to reference direction



Yaw error

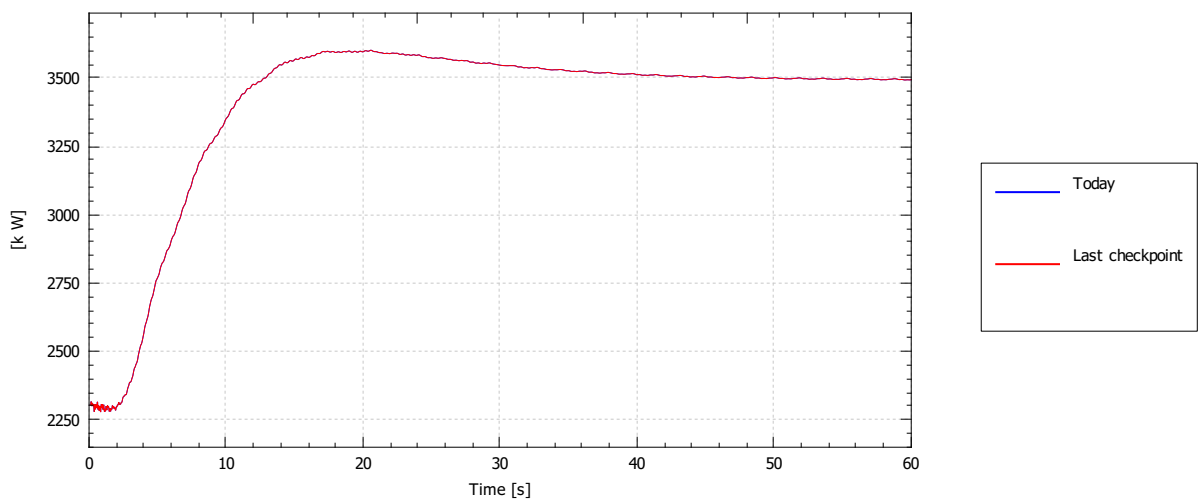


Torque about yaw axis

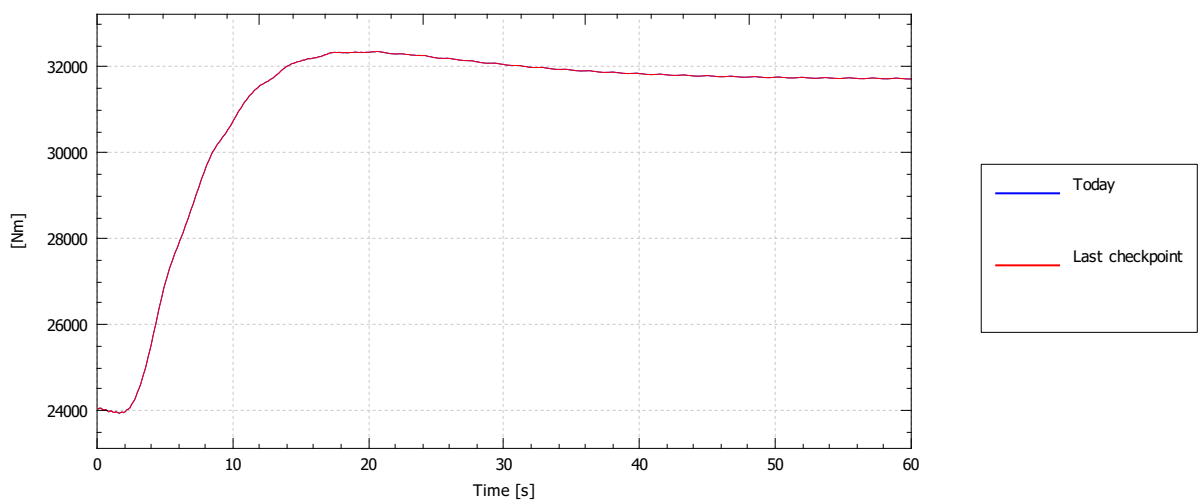


Generator

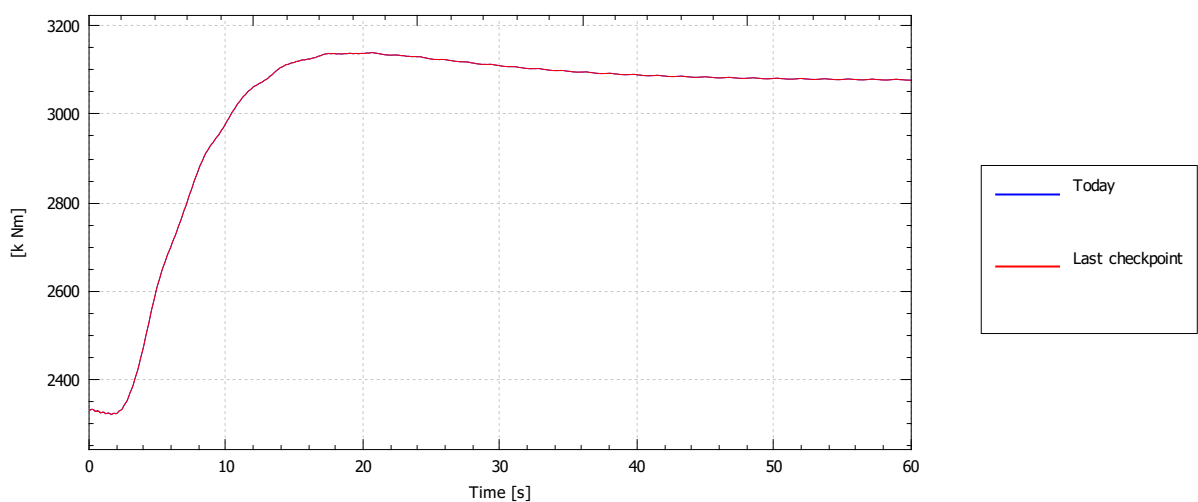
Power (electrical)



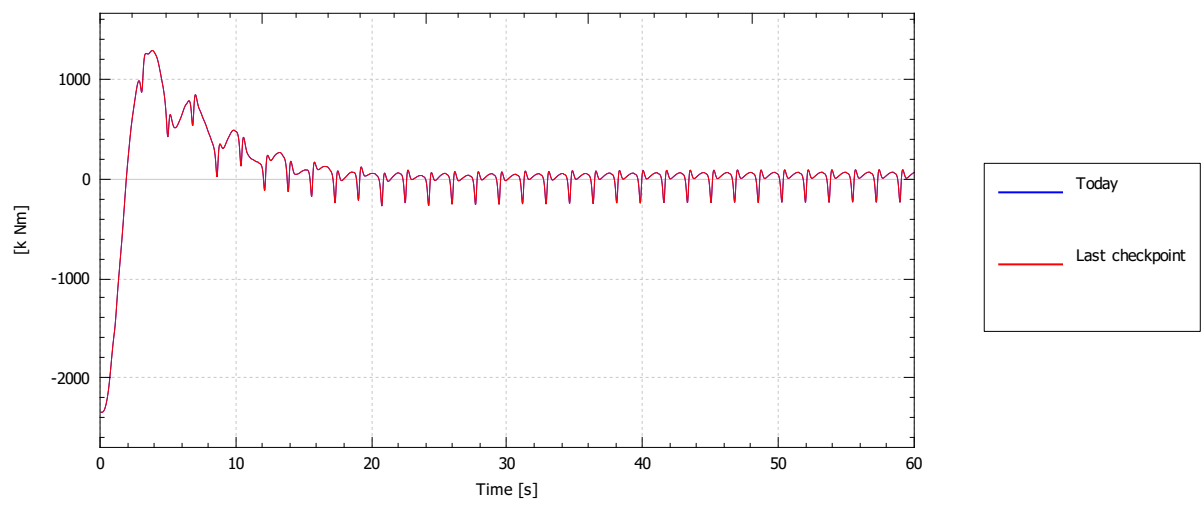
Torque



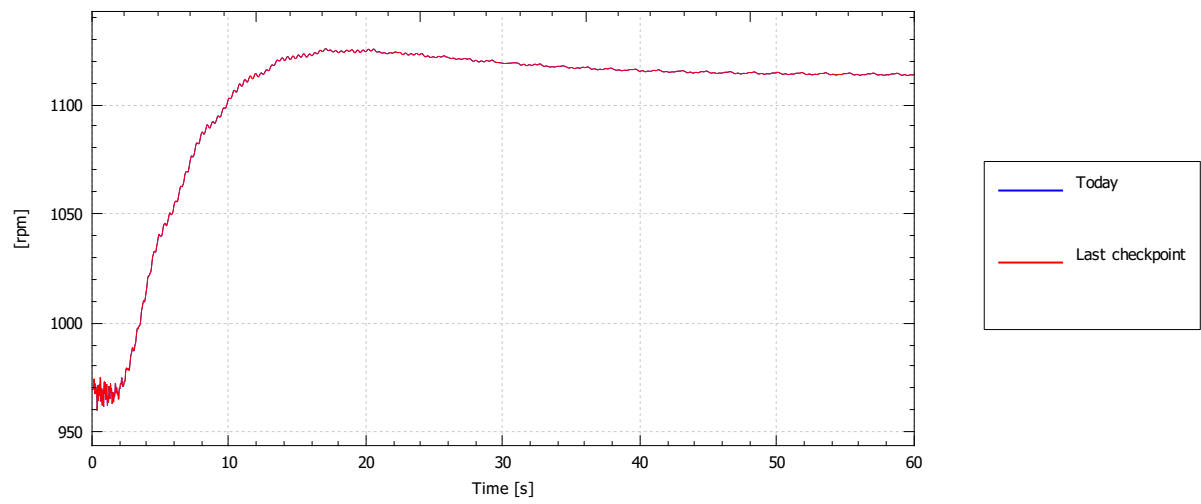
Torque on main shaft



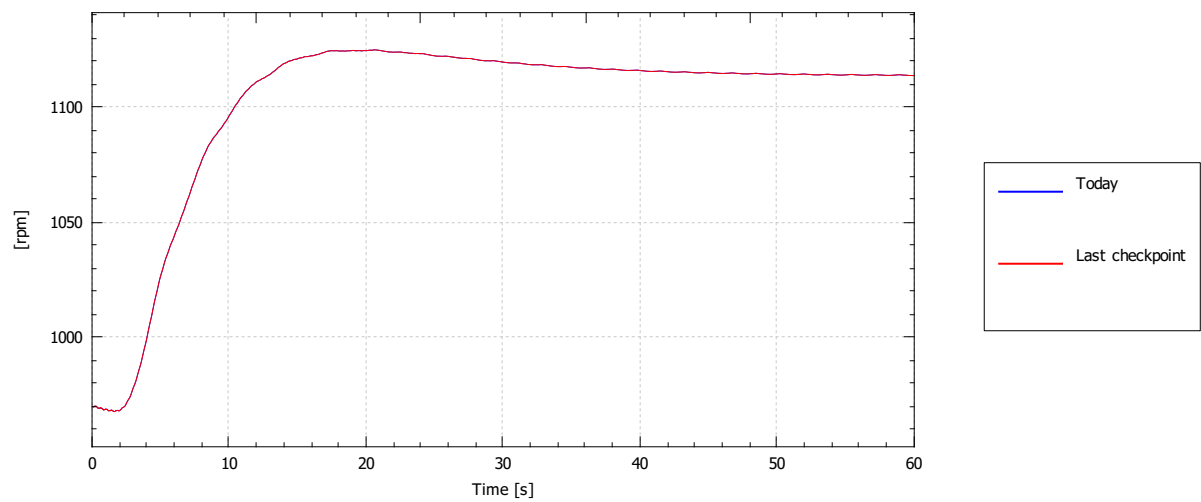
Torque diff. on main shaft



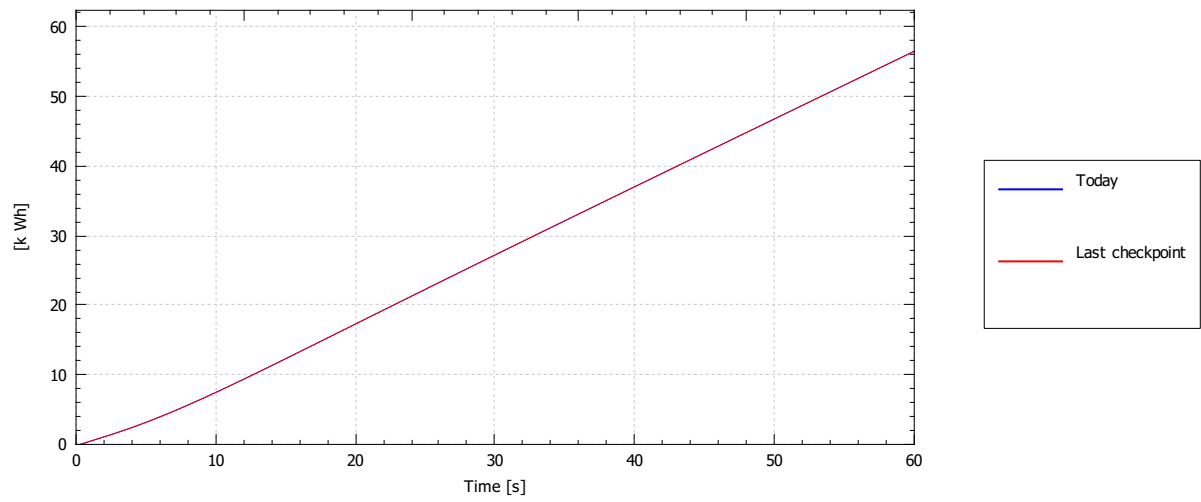
RPM



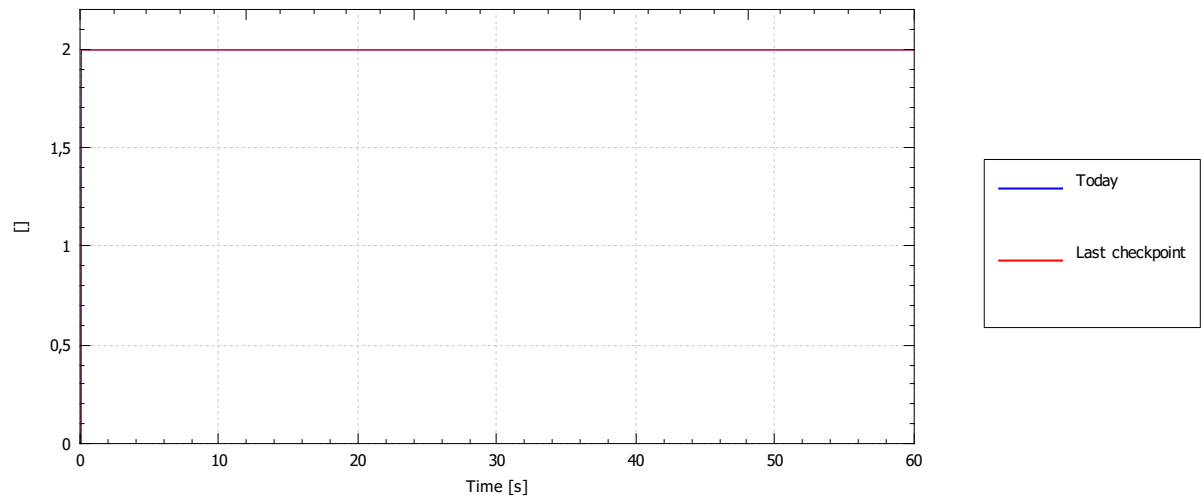
Filtered RPM



Electricity production

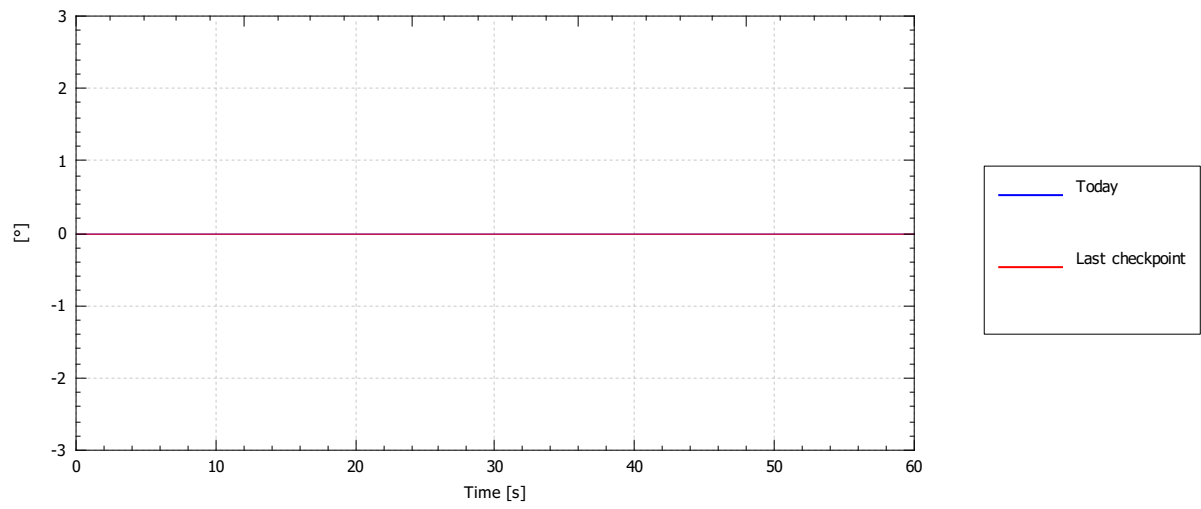


Region

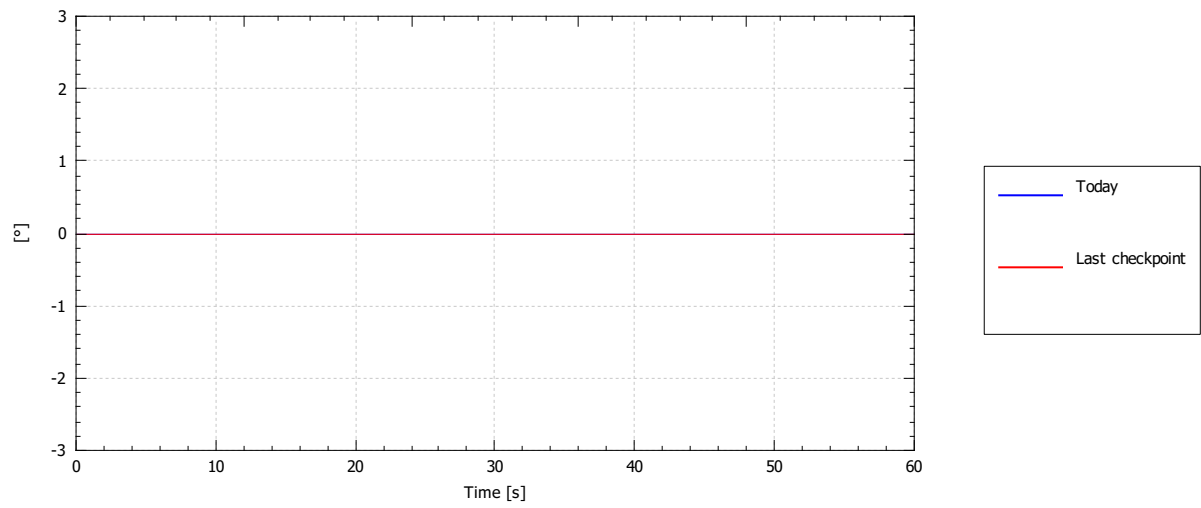


Demanded pitch controller

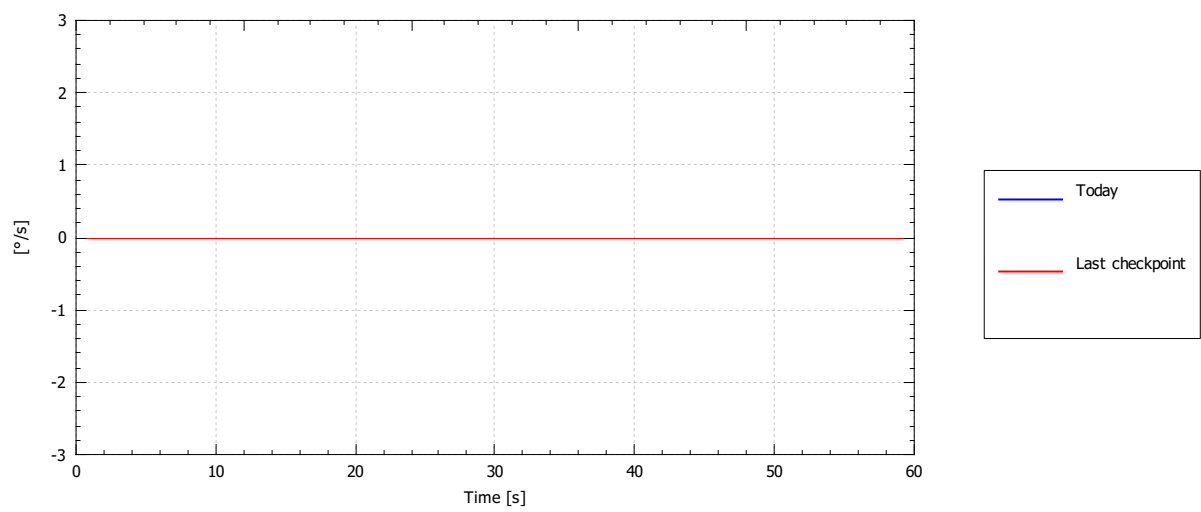
Demanded collective pitch angle



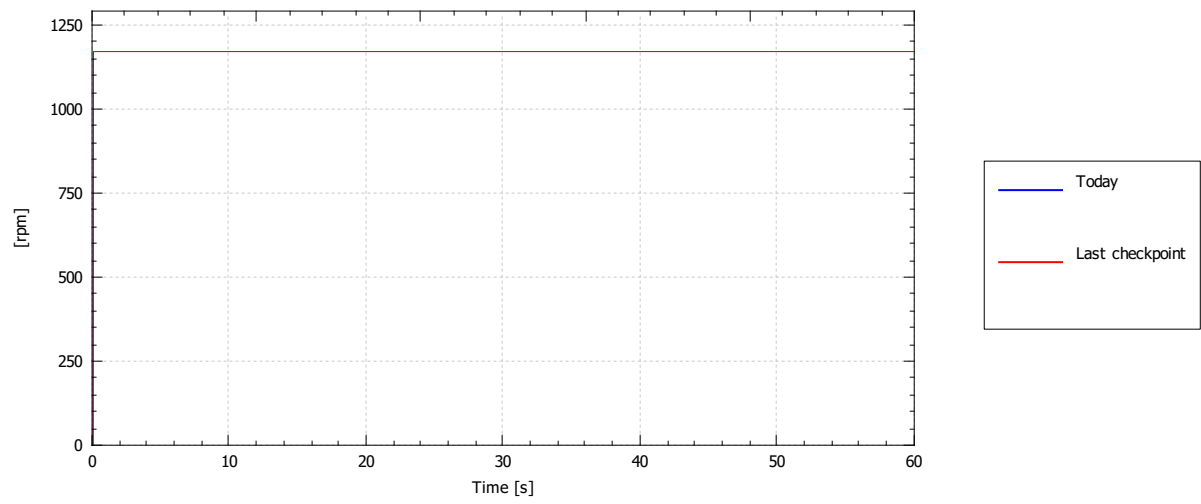
Cumulative demanded collective pitch angle



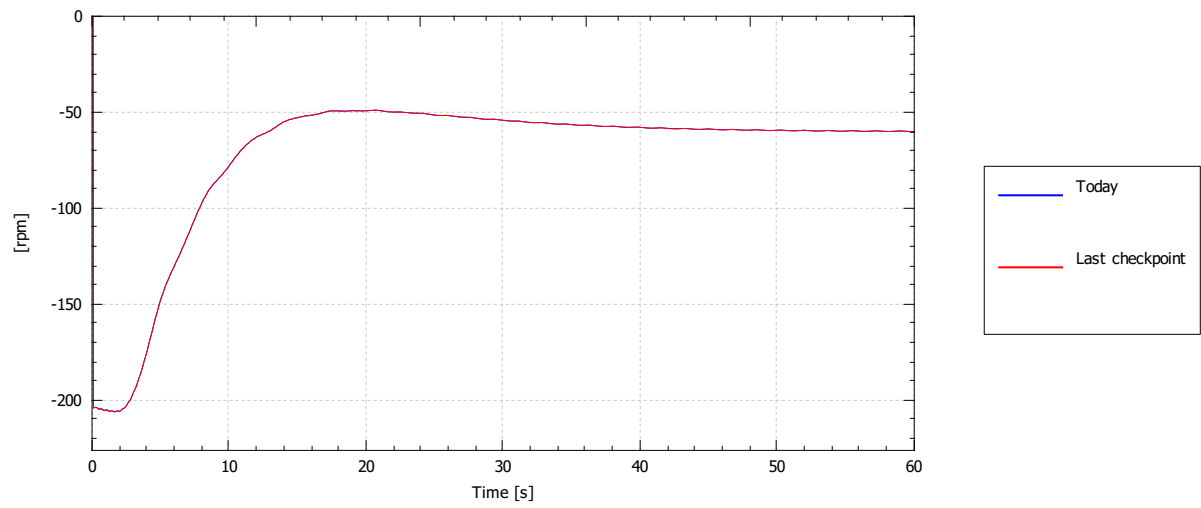
Demanded collective pitch angle rate



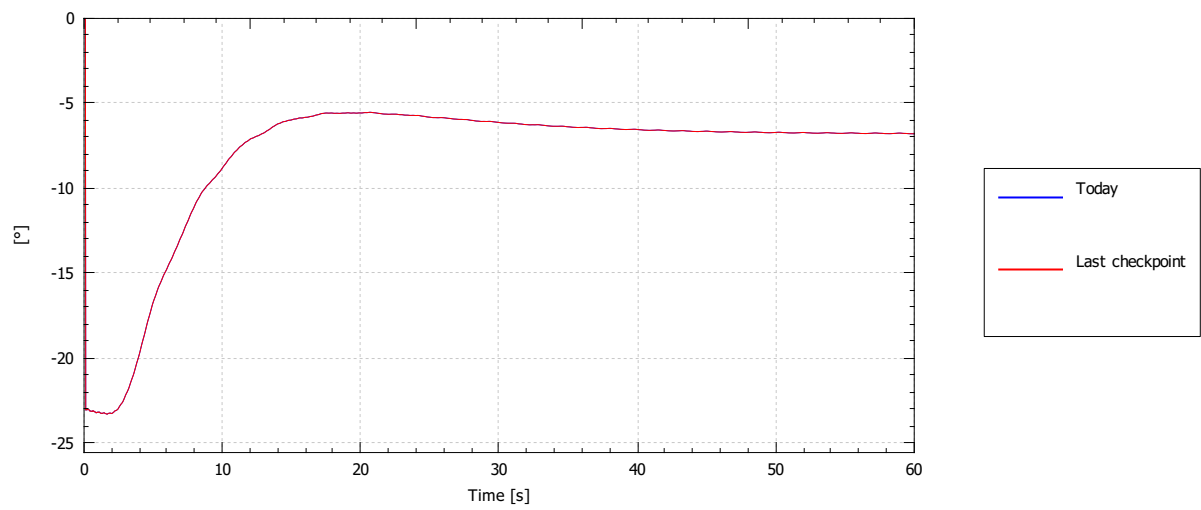
Set point



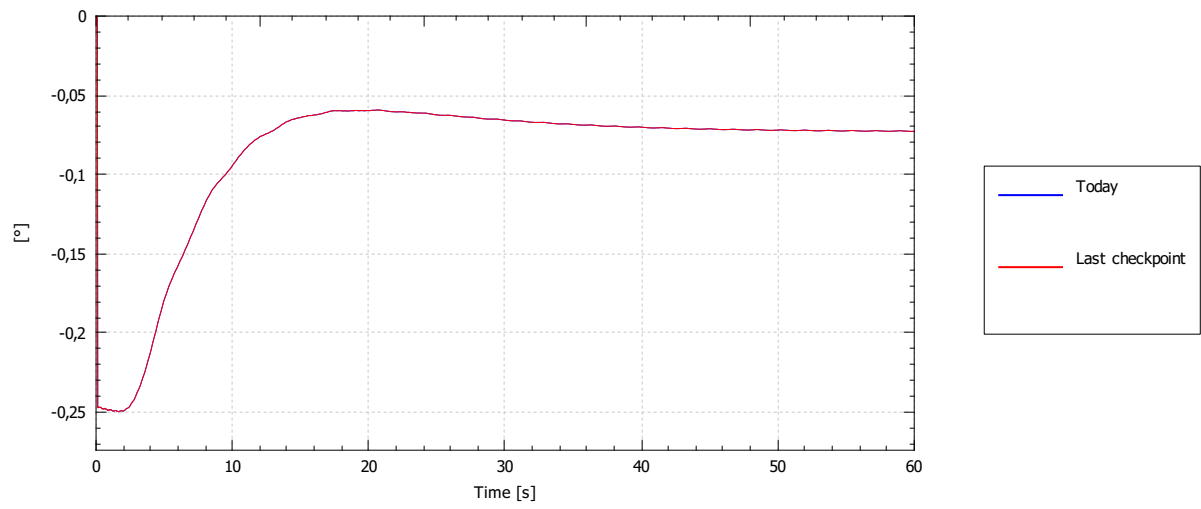
RPM error



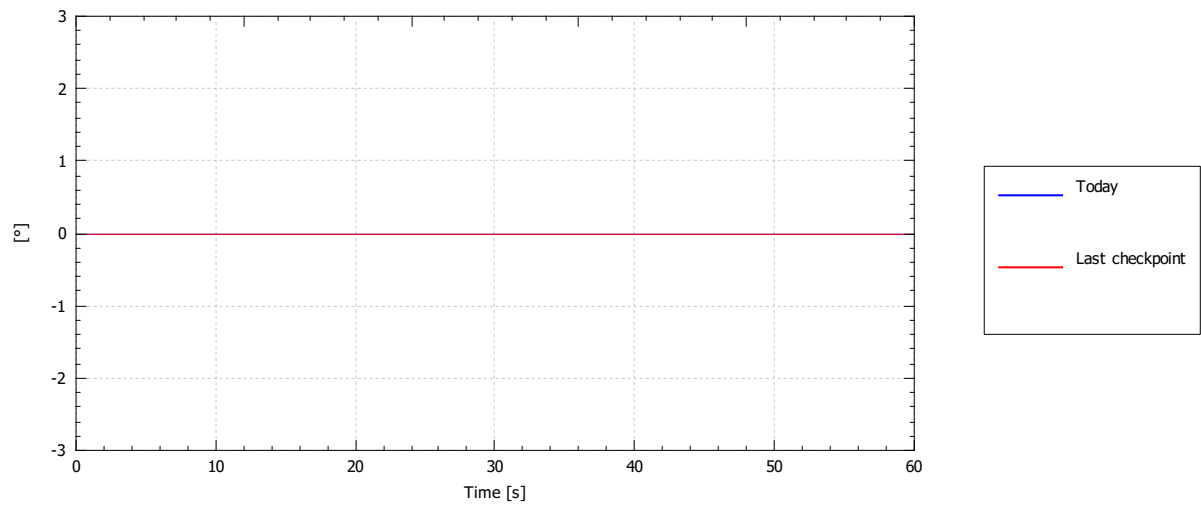
P term



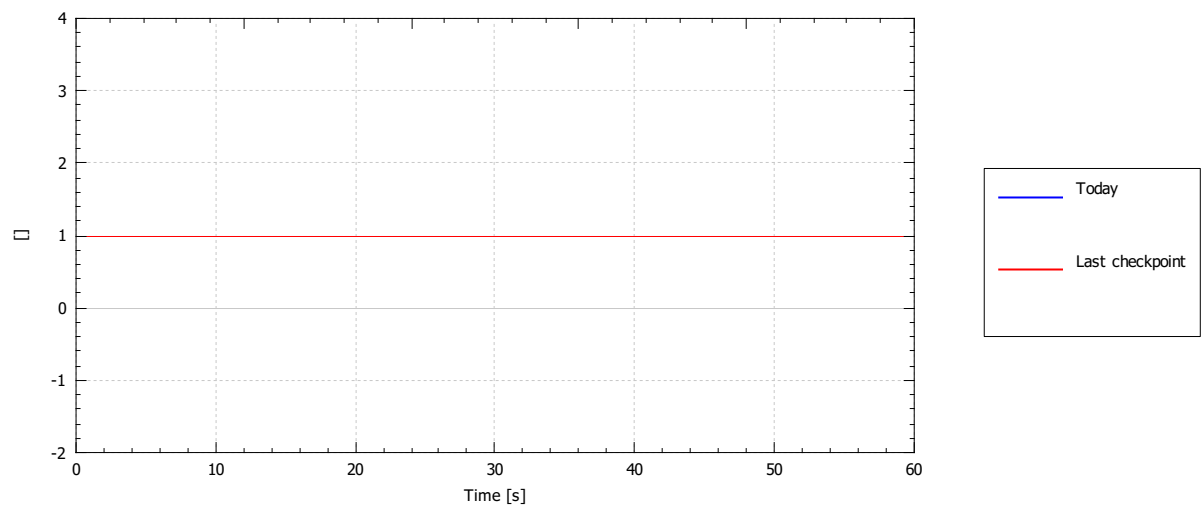
I term

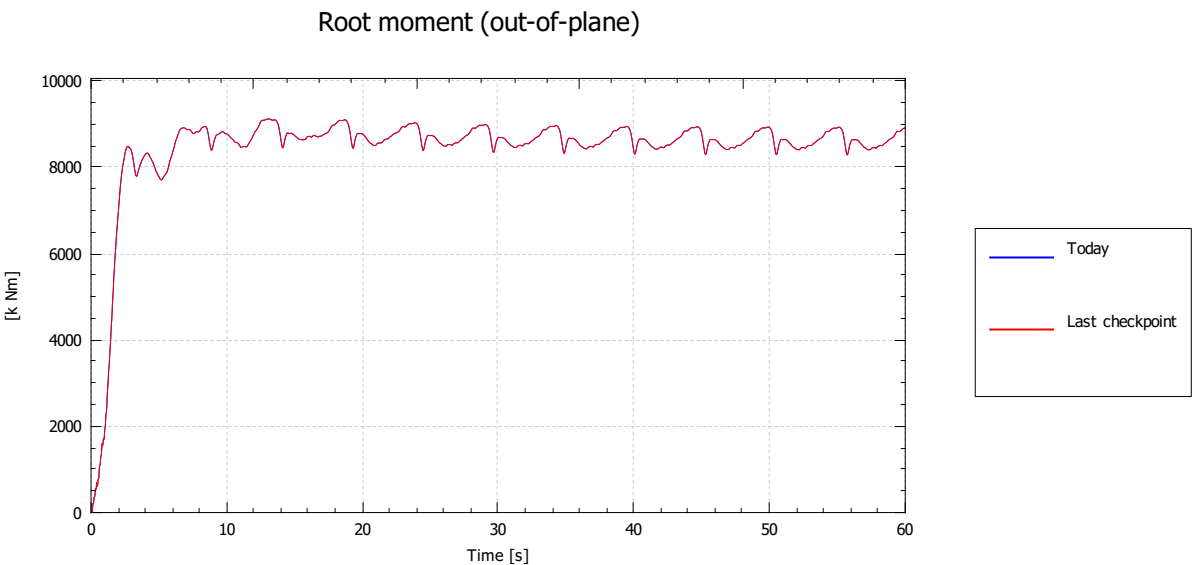
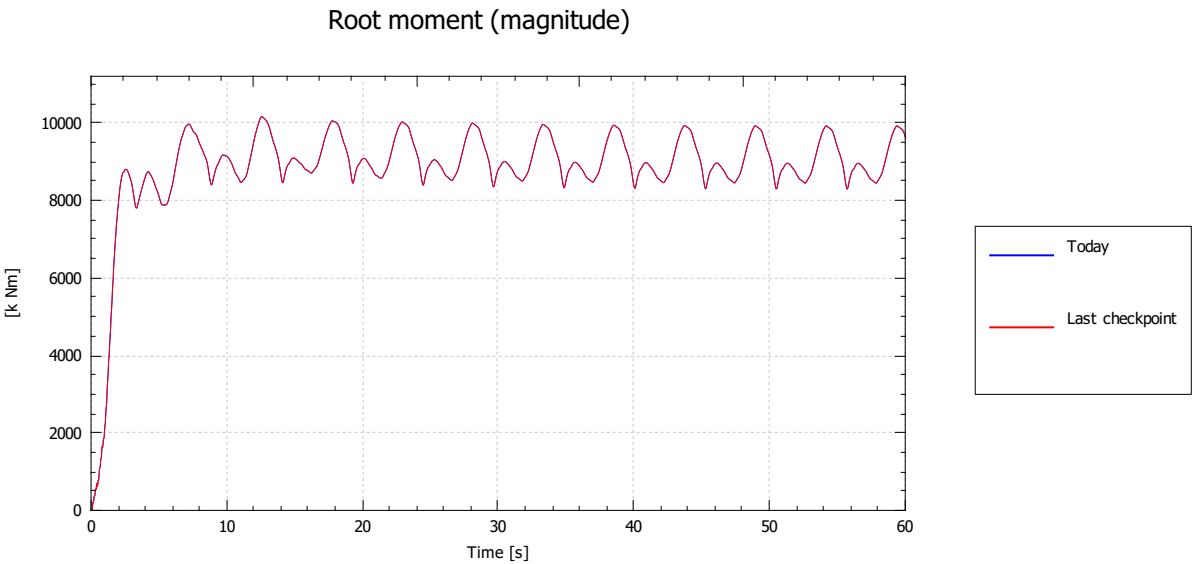
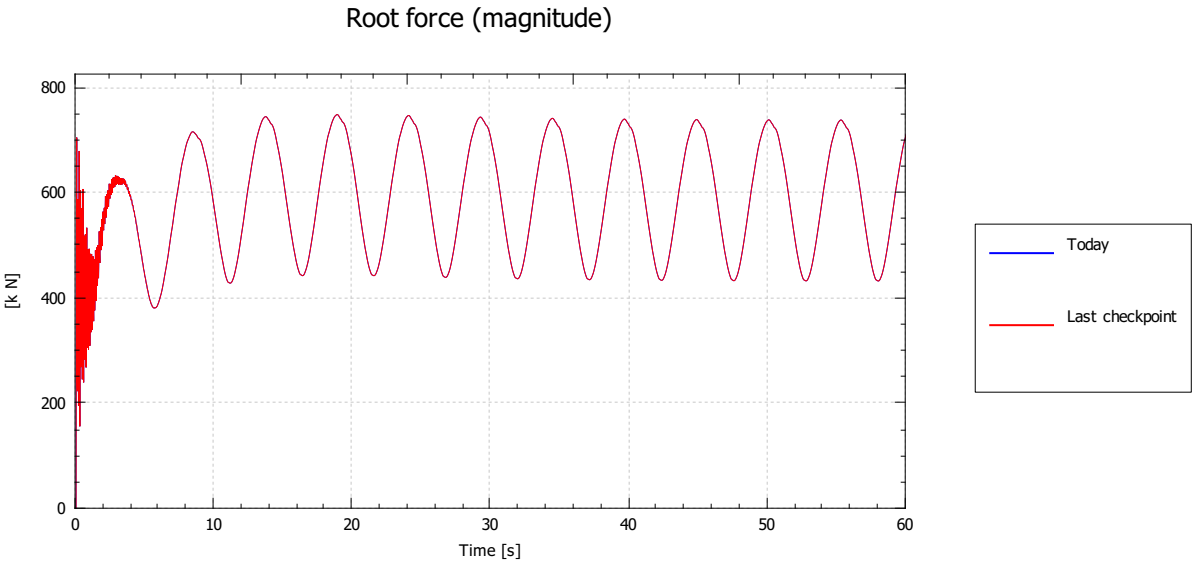


D term

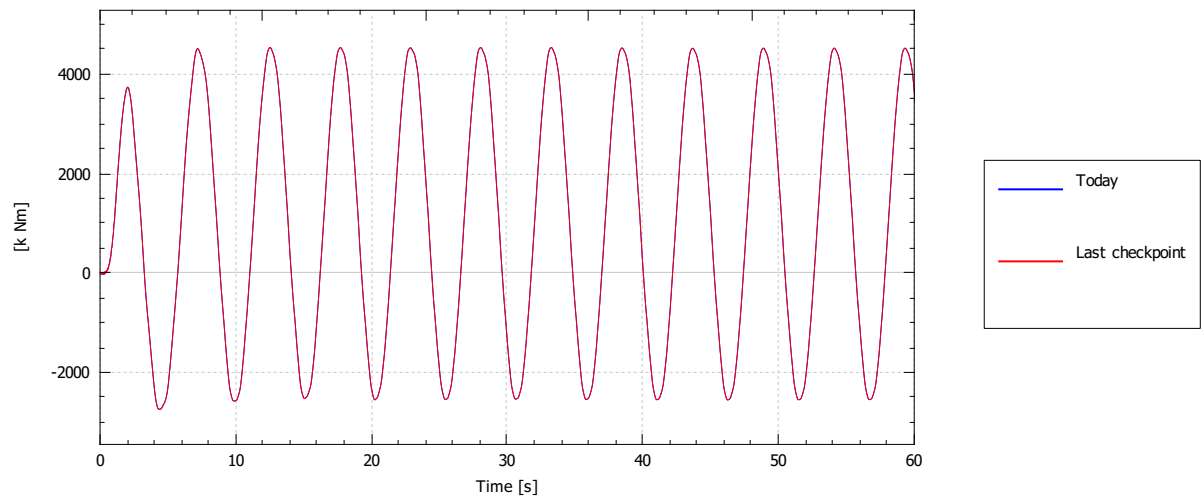


Gain scheduling factor

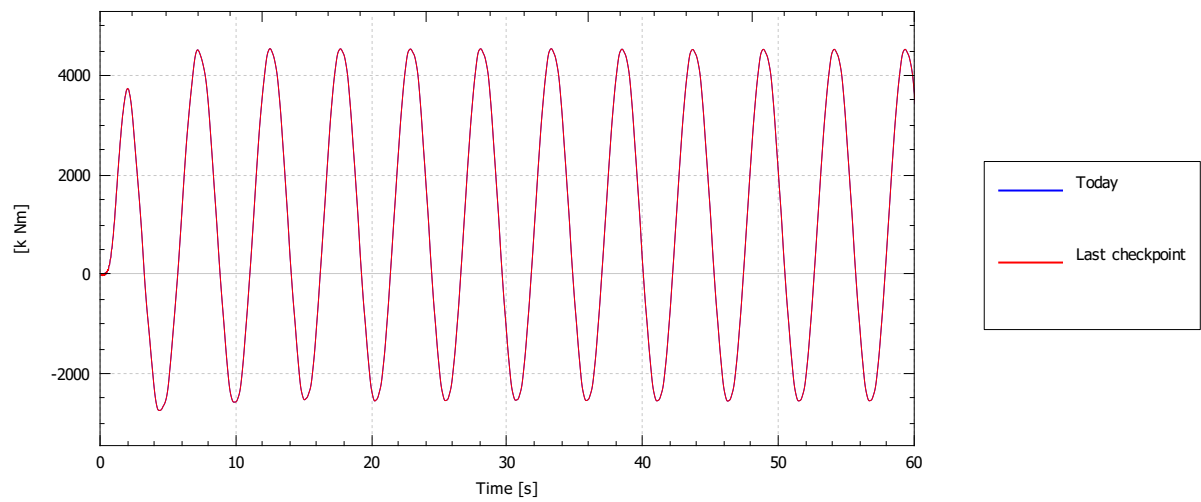




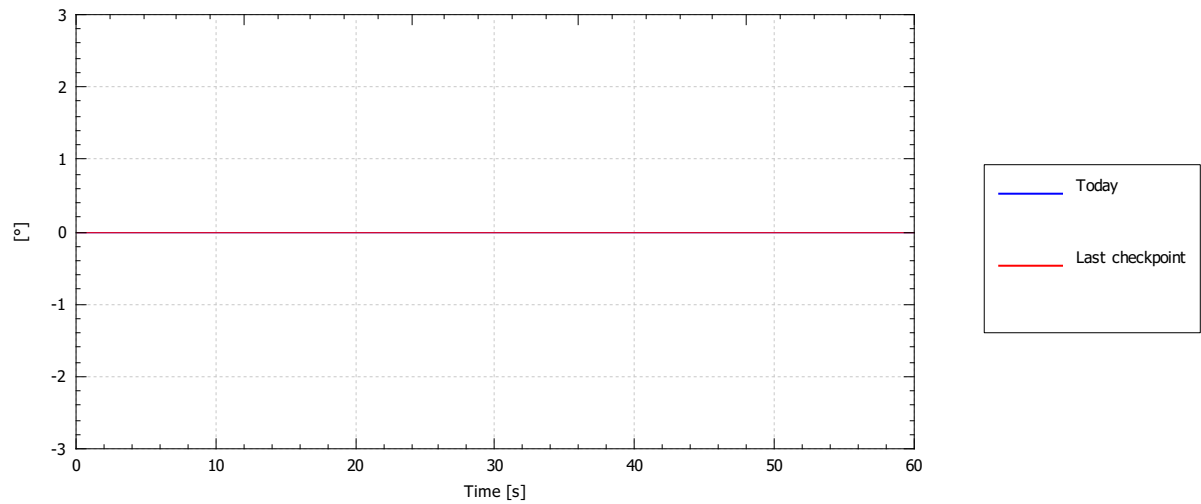
Root moment (in-plane)



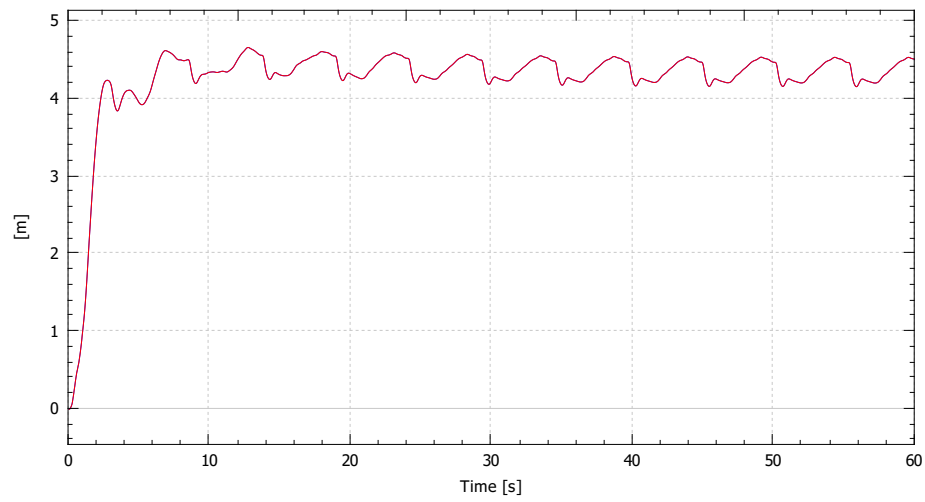
Root moment about shaft



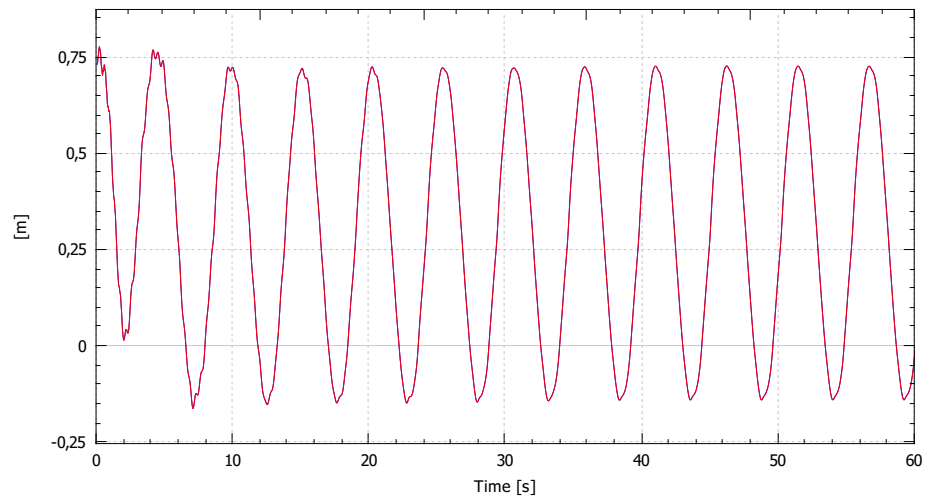
Pitch angle



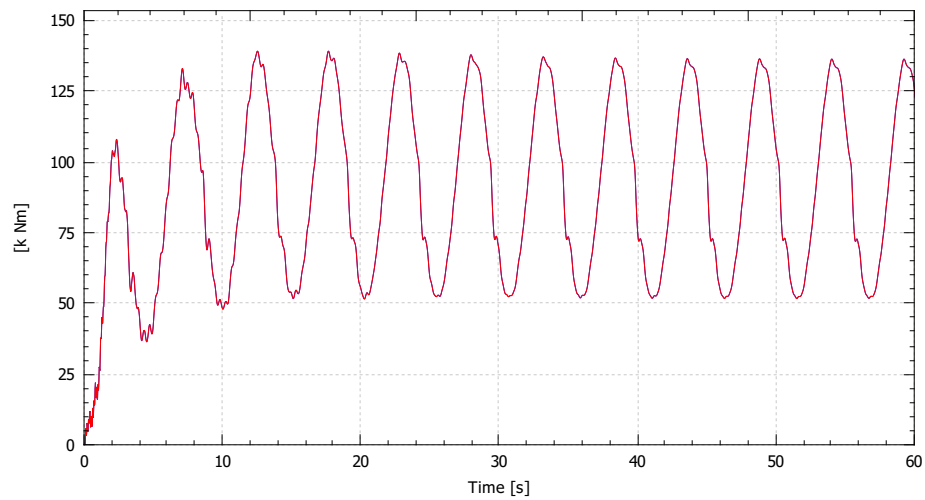
Tip deflection (out-of-plane)

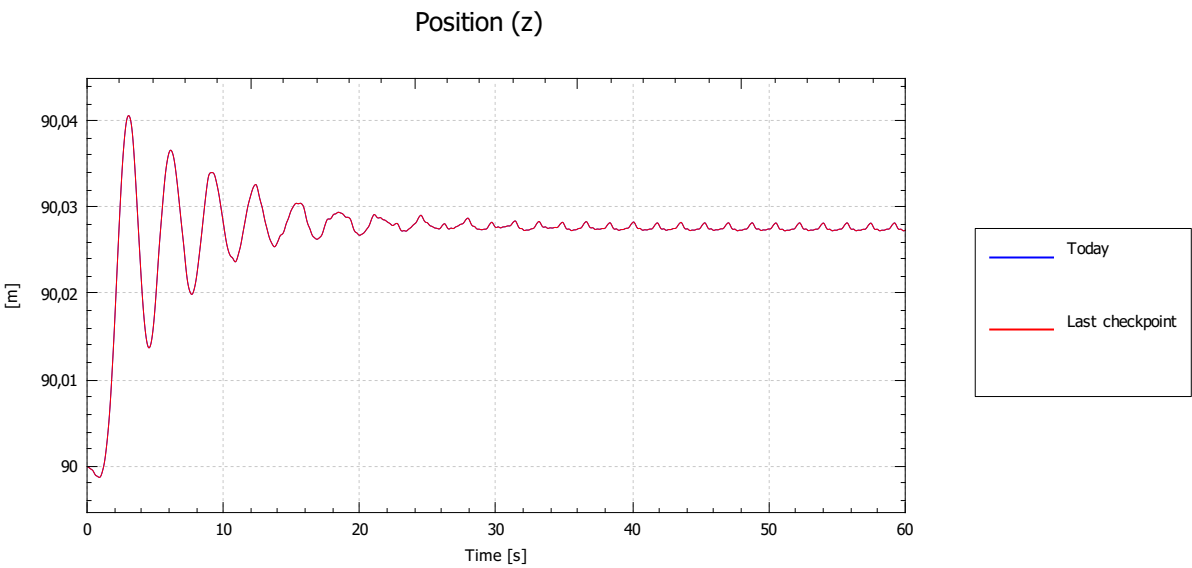
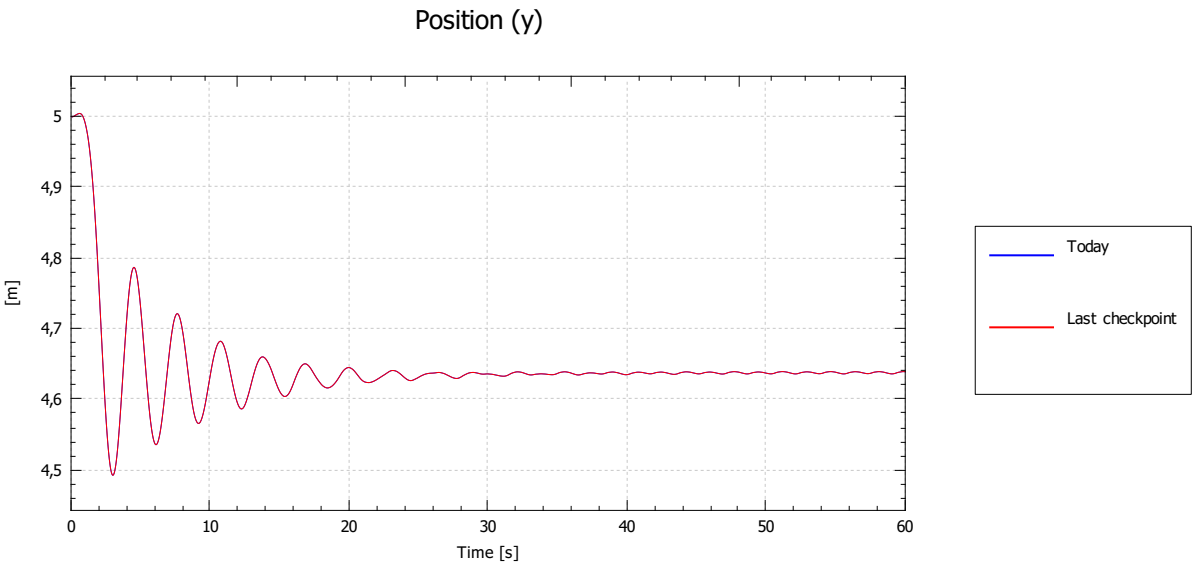
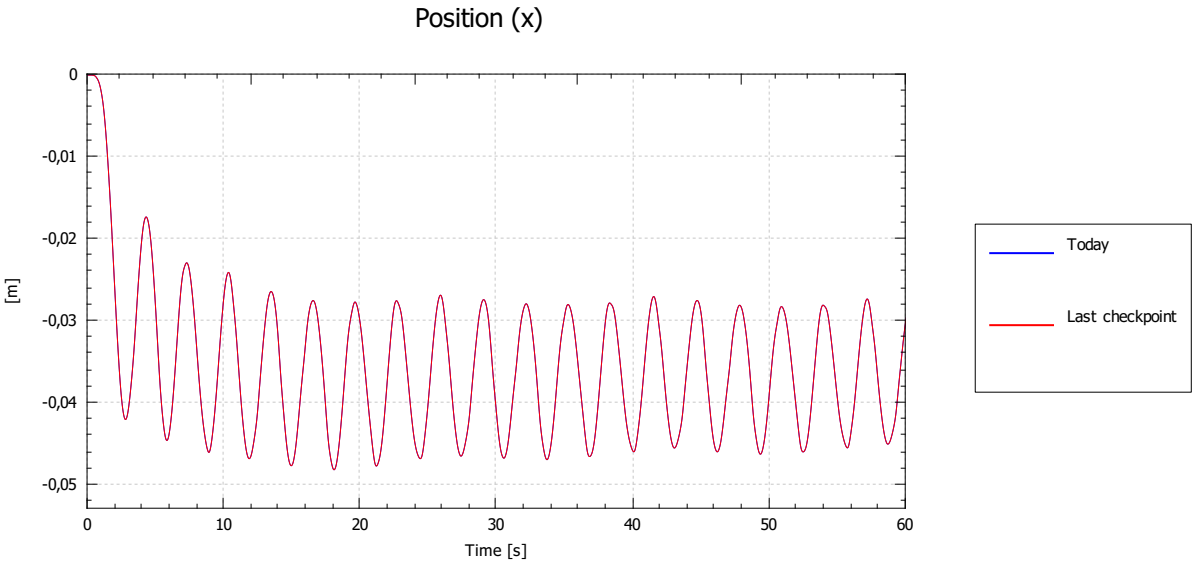


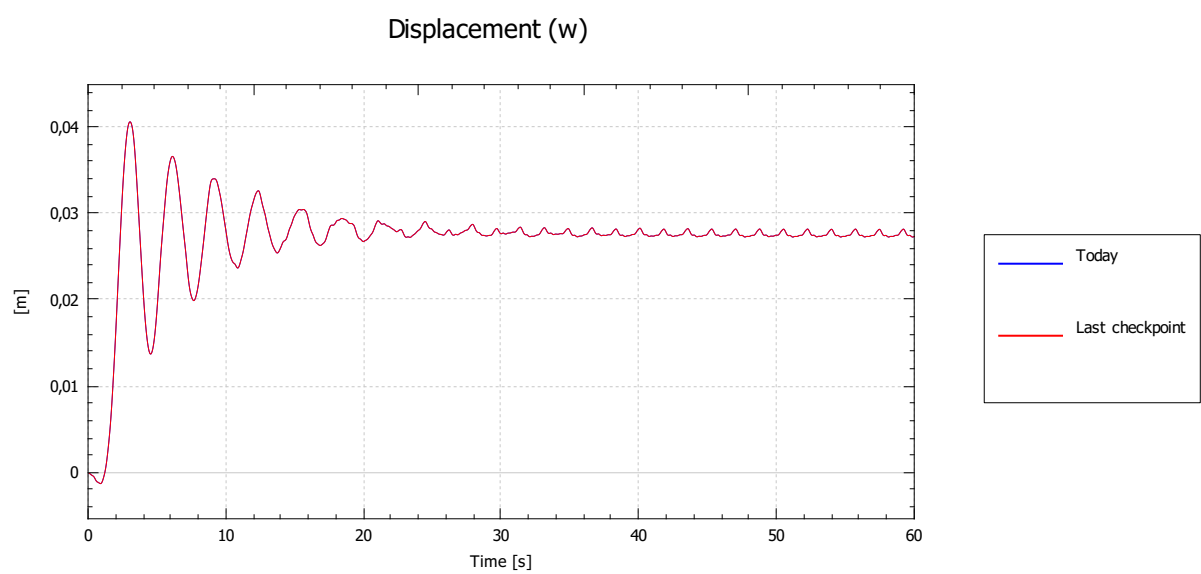
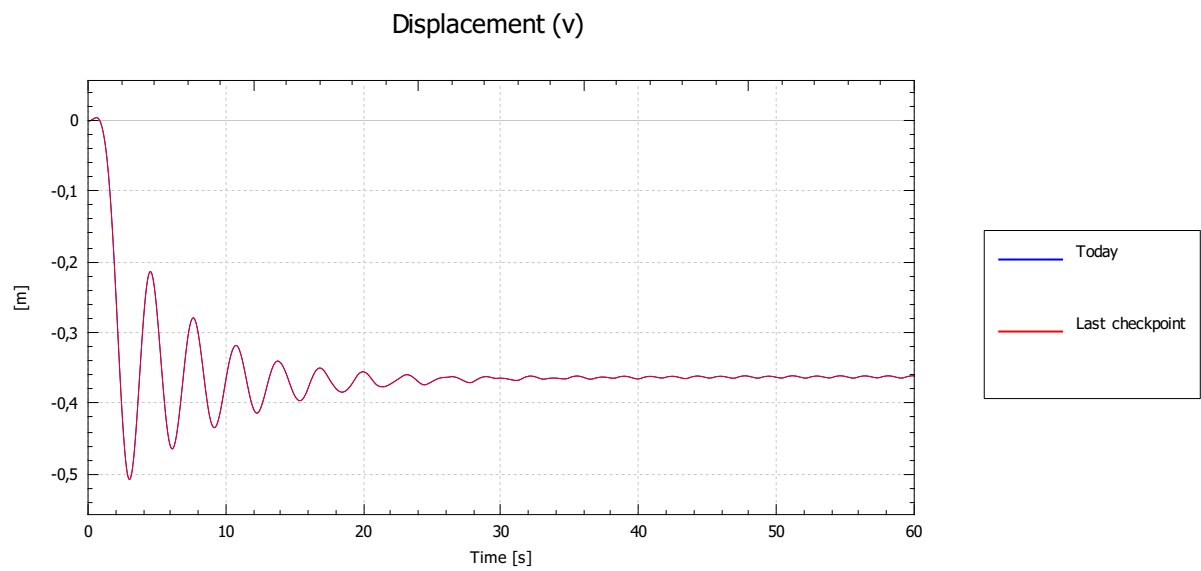
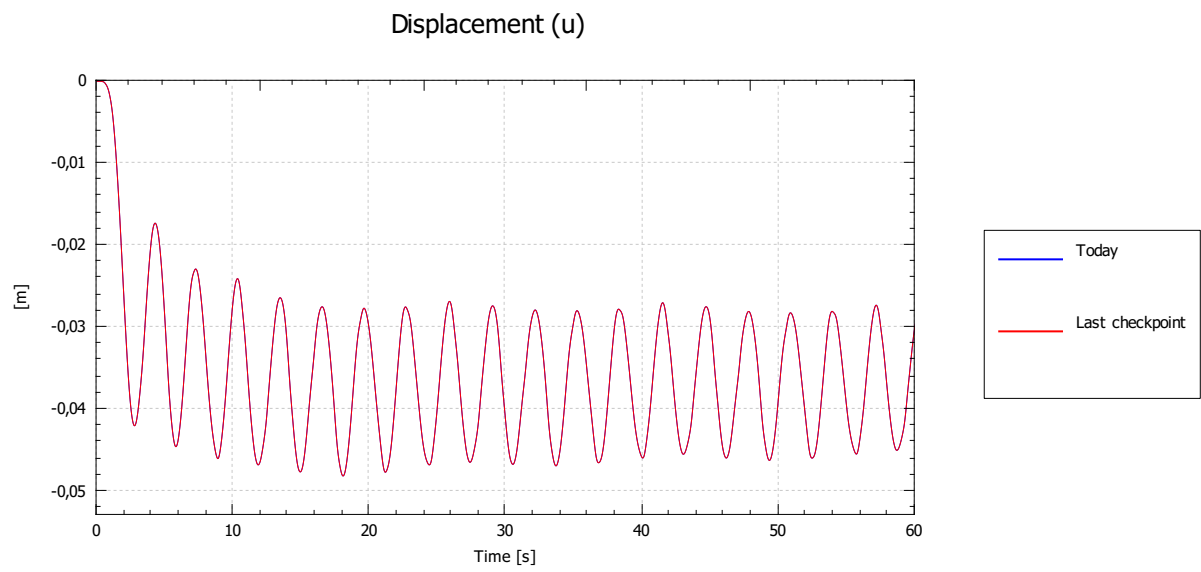
Tip deflection (in-plane)



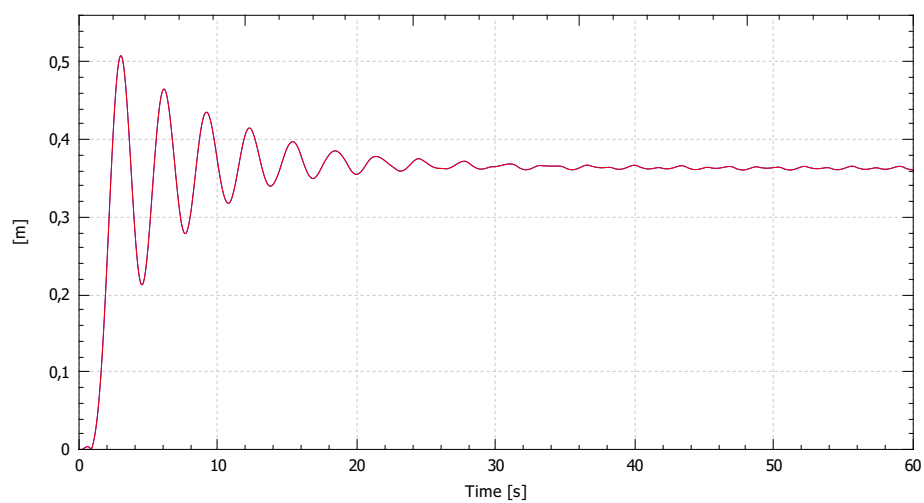
Root torque



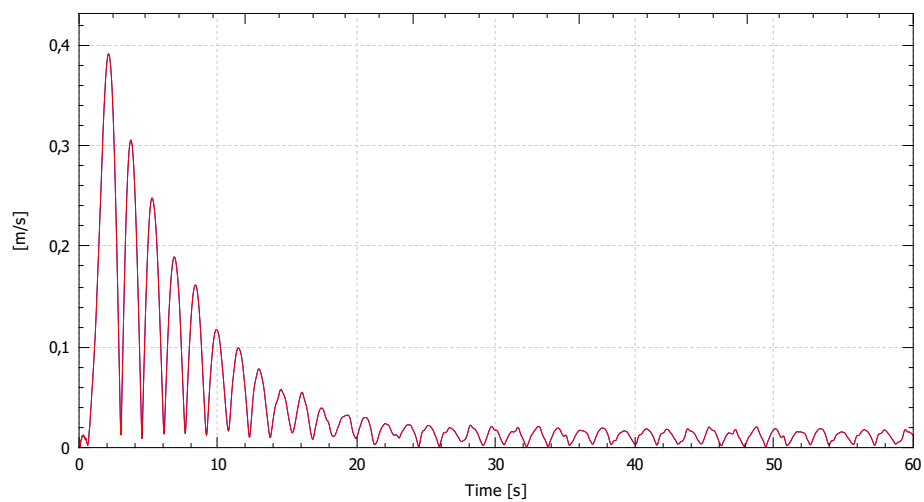




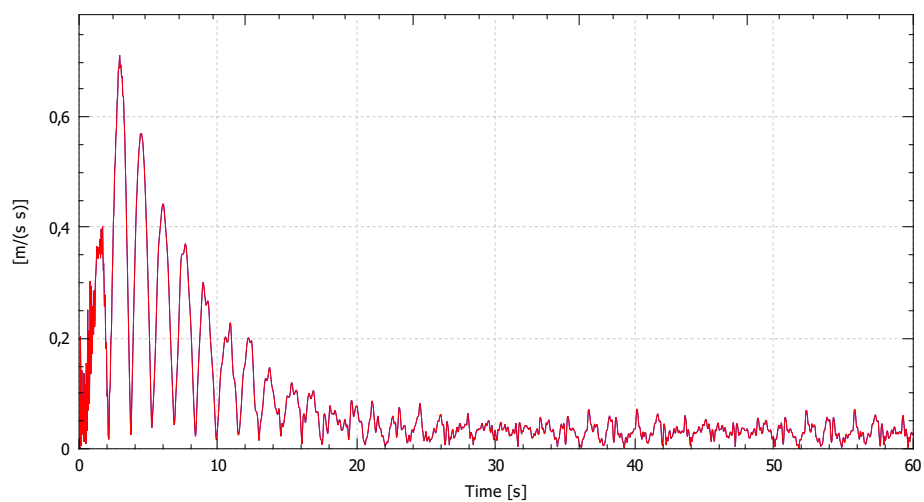
Displacement magnitude



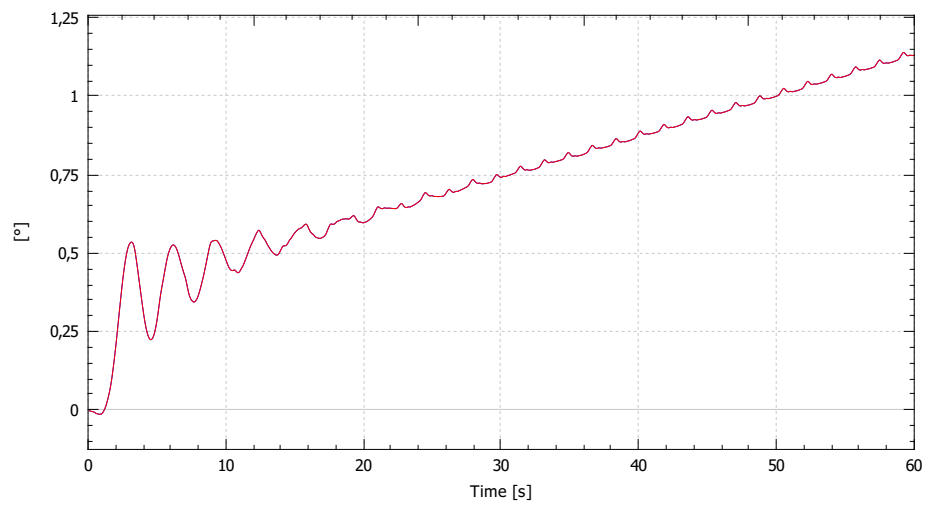
Speed



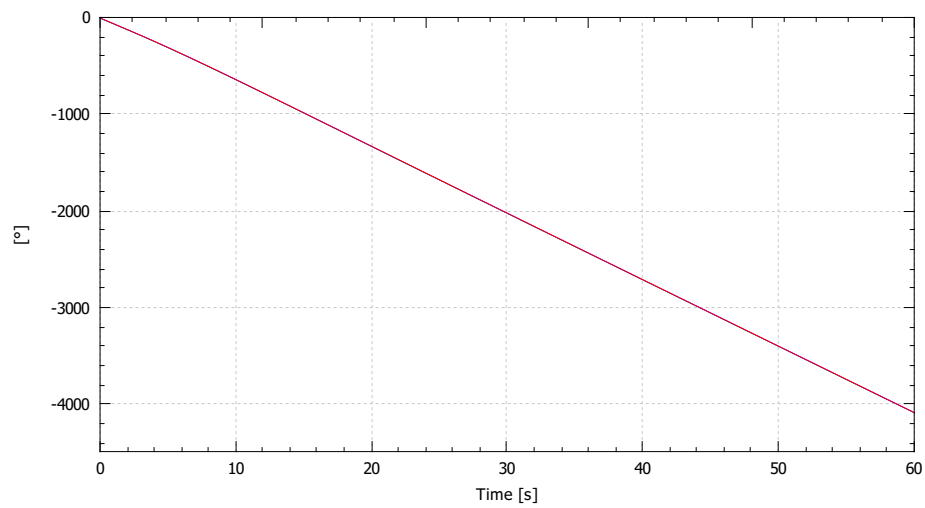
Acceleration, magnitude



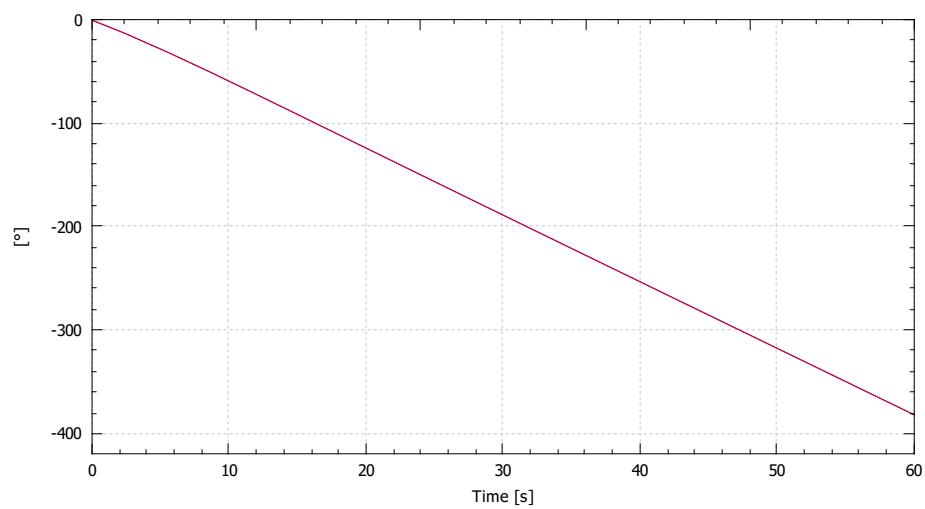
Rotational displacement (ru)



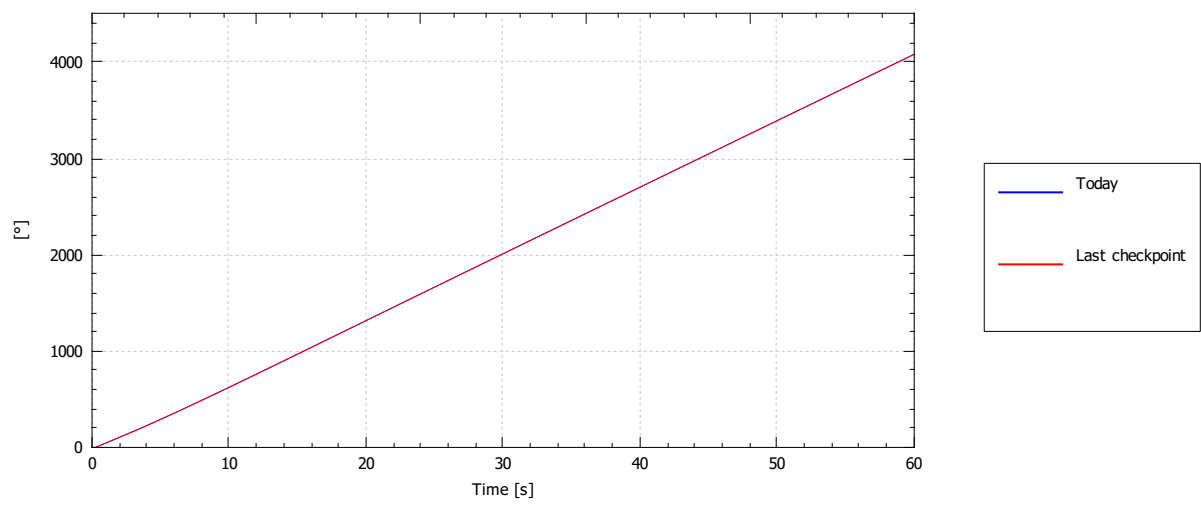
Rotational displacement (rv)



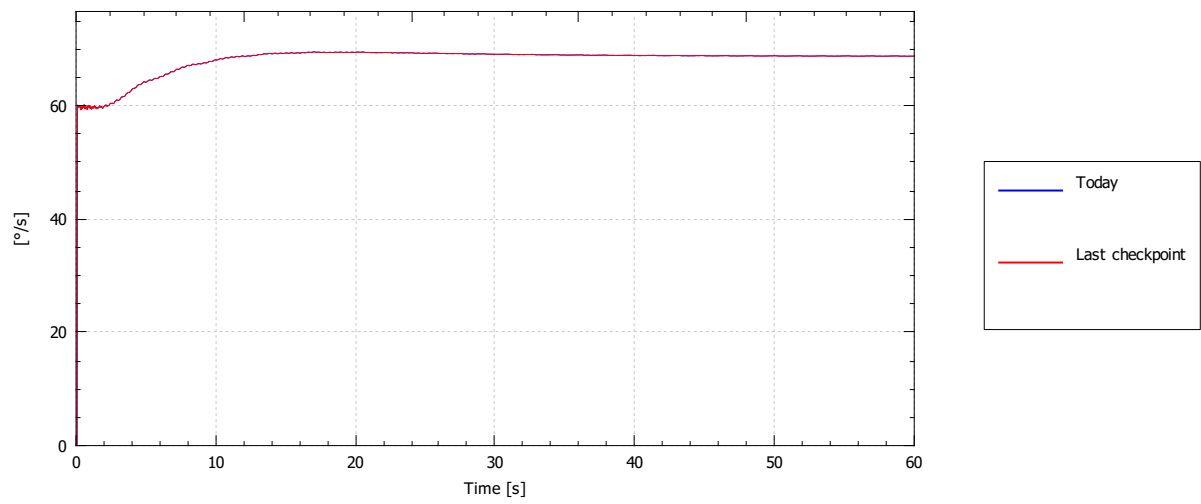
Rotational displacement (rw)



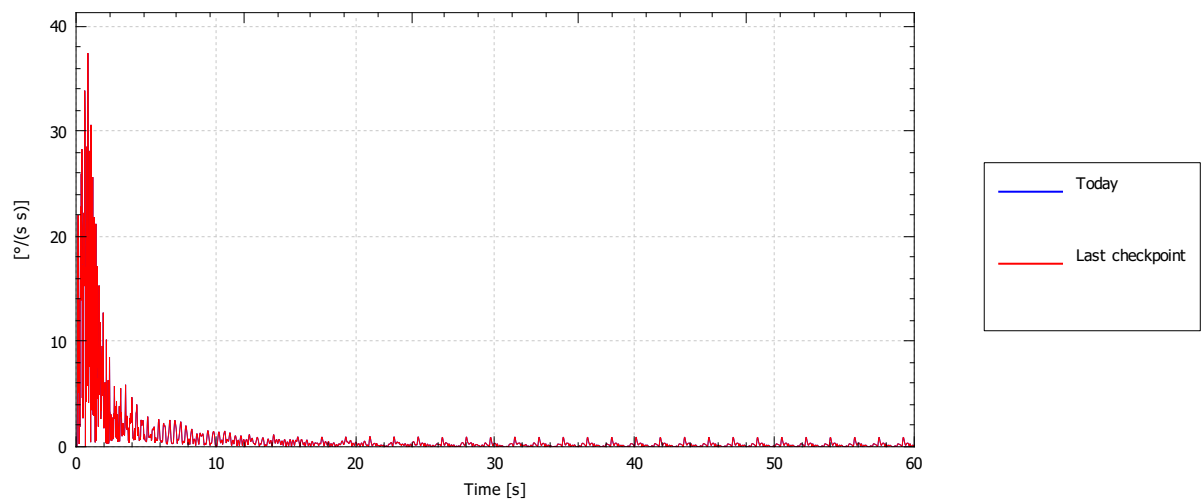
Rotational displacement magnitude



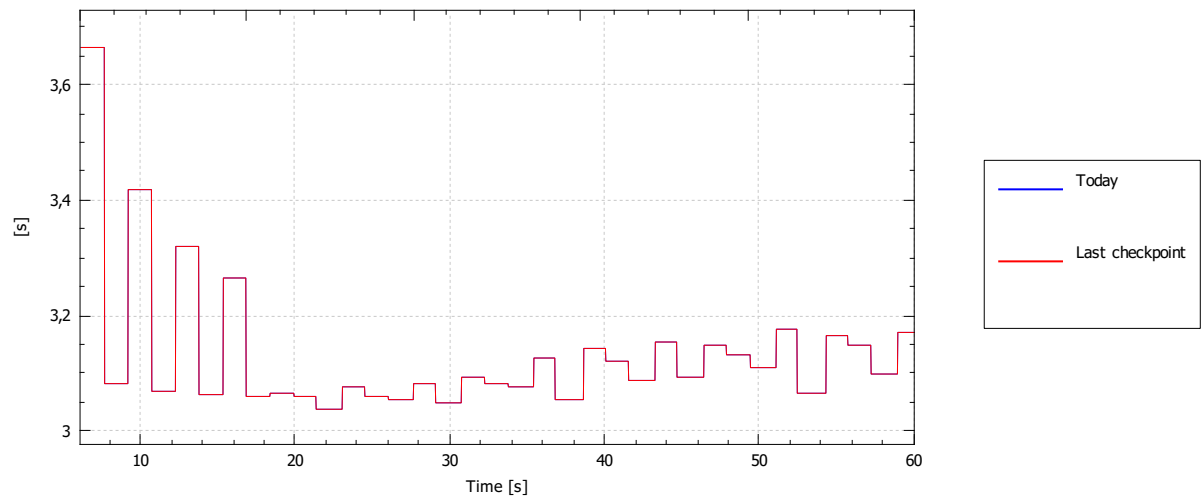
Rotational speed



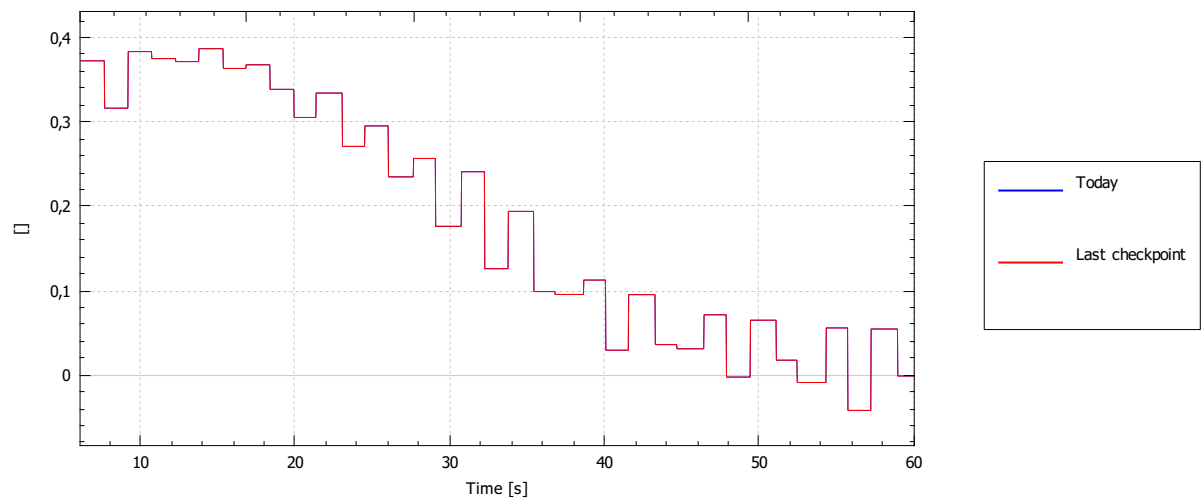
Rotational acceleration mag



Displacement period



Displacement logarithmic decrement



Displacement damping ratio

