## Regression test

Test run started 2025-08-27T02:35:25Z

Ashes version: 3.32.0

| **Wind Uniform** | | | |
|---|---|---|---|
| Load case set 1 | | | |
| Load case | Time series | Error score | |
| def | 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 |
| wind speed | 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 |
| initial angle | 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 |
| shear | 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 |
| power loaw exponent | 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 |
| reference height scheme | 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 |

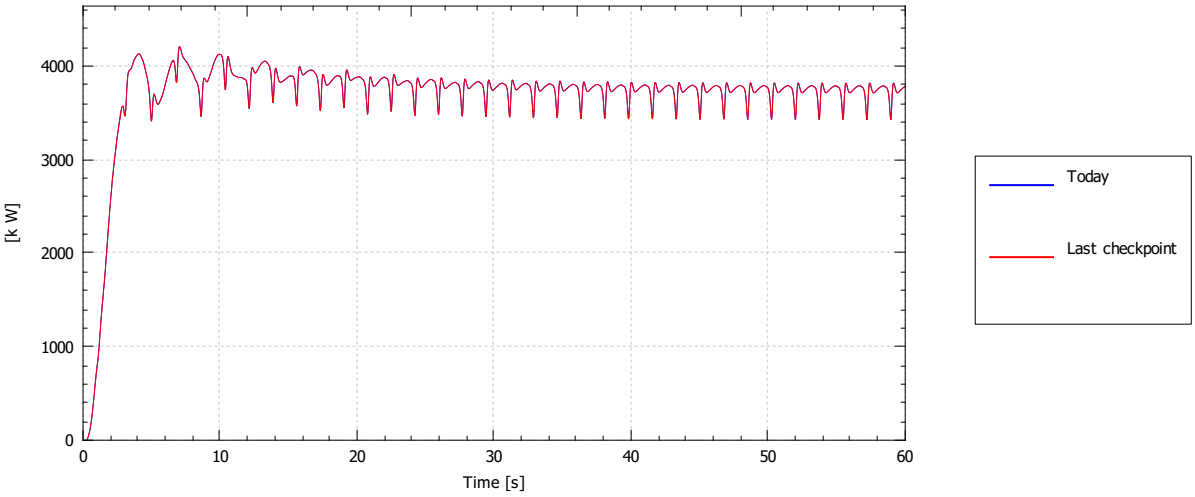
| | | | |
|---|---|---|---|
| | Displacement (u) | 0.000000 | PASS |
| | Displacement (v) | 0.000000 | PASS |
| | Displacement (w) | 0.000000 | PASS |
| | Displacement magnitude | 0.000000 | PASS |
| | Speed | 0.000000 | PASS |
| | Acceleration, magnitude | 0.000000 | PASS |
| | Rotational displacement (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 |
| reference height | 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 |

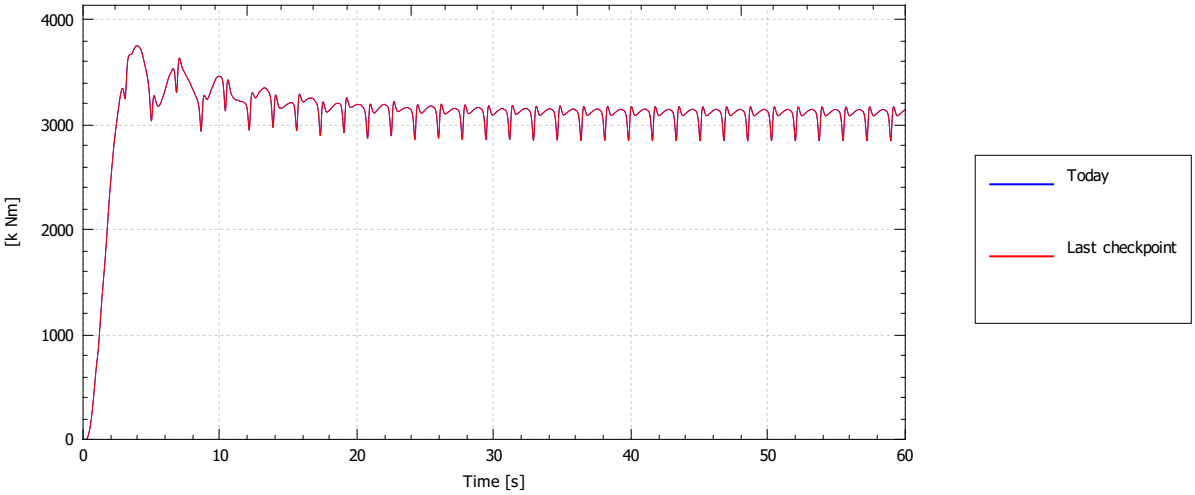
## Load case: def

## Rotor

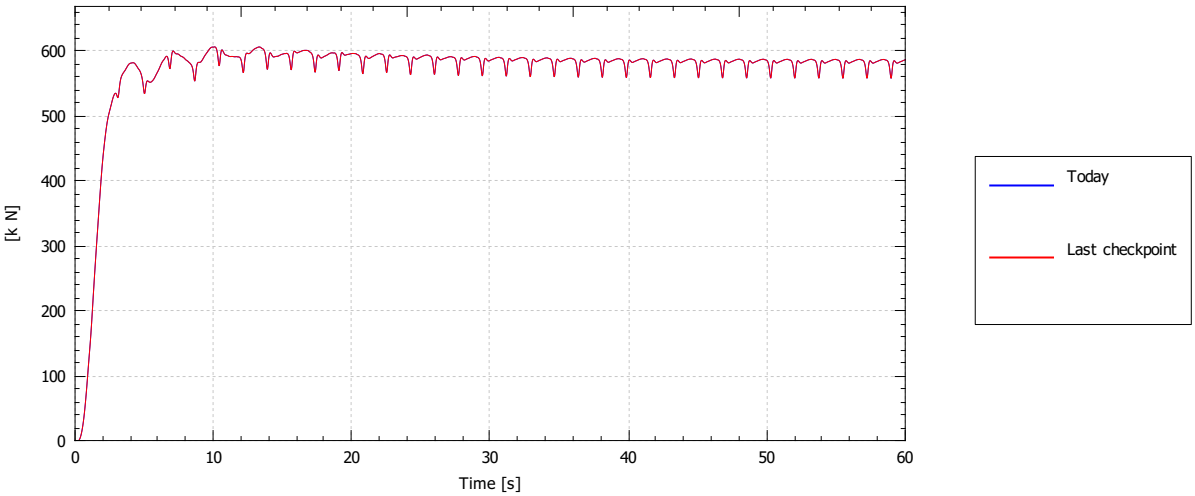
## Power (aero)



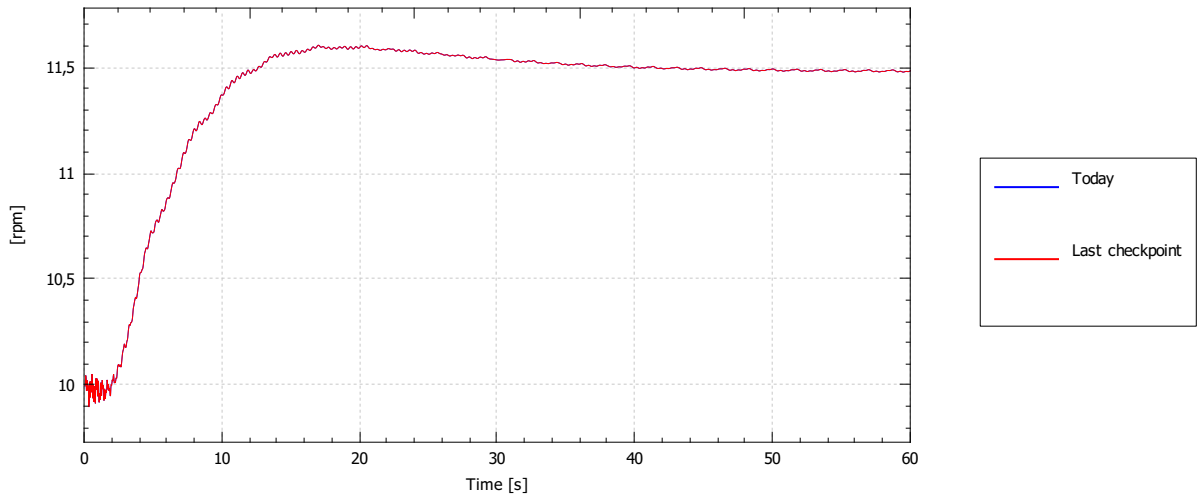

## Torque (aero)



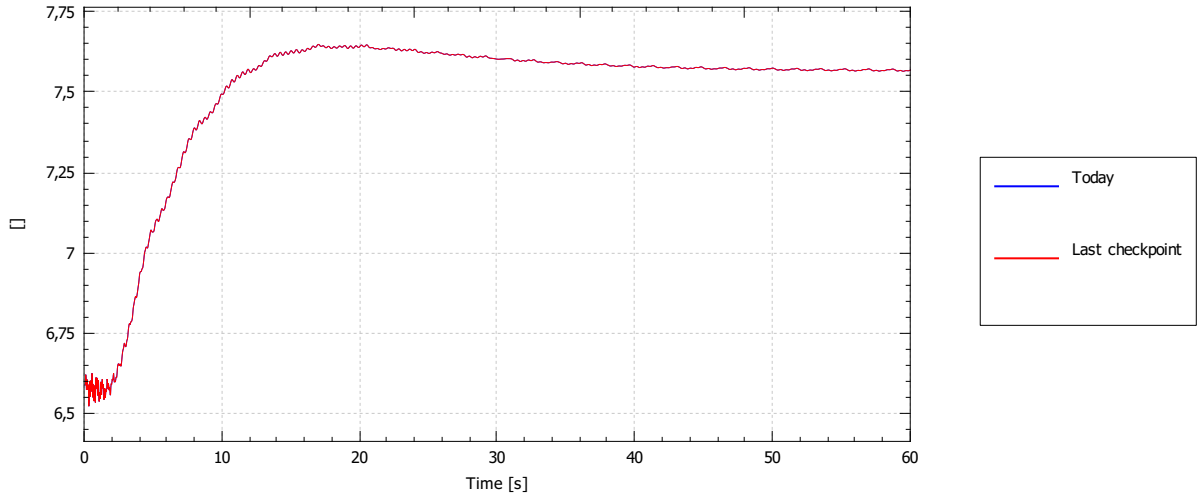

## Thrust (aero)



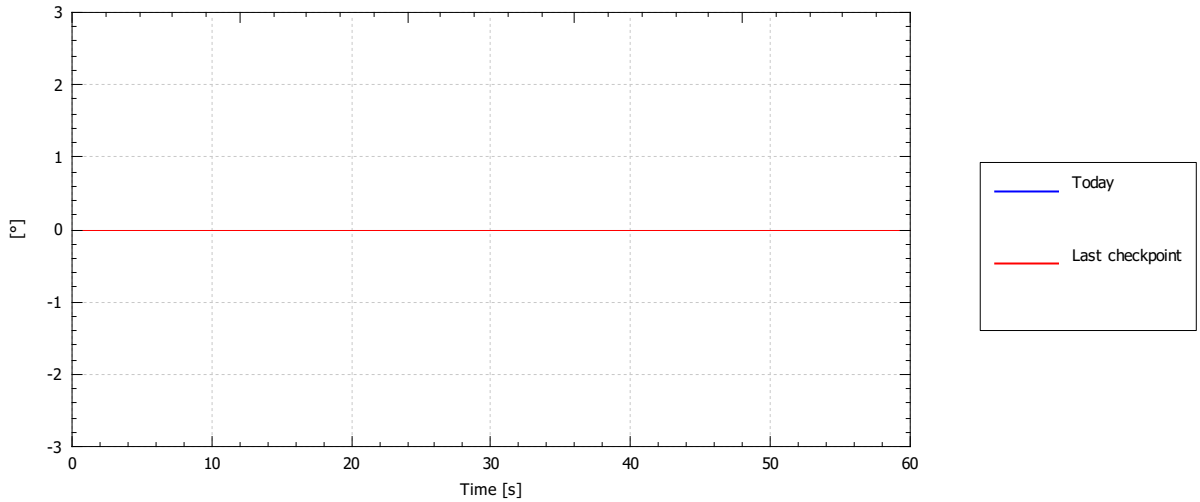
RPM



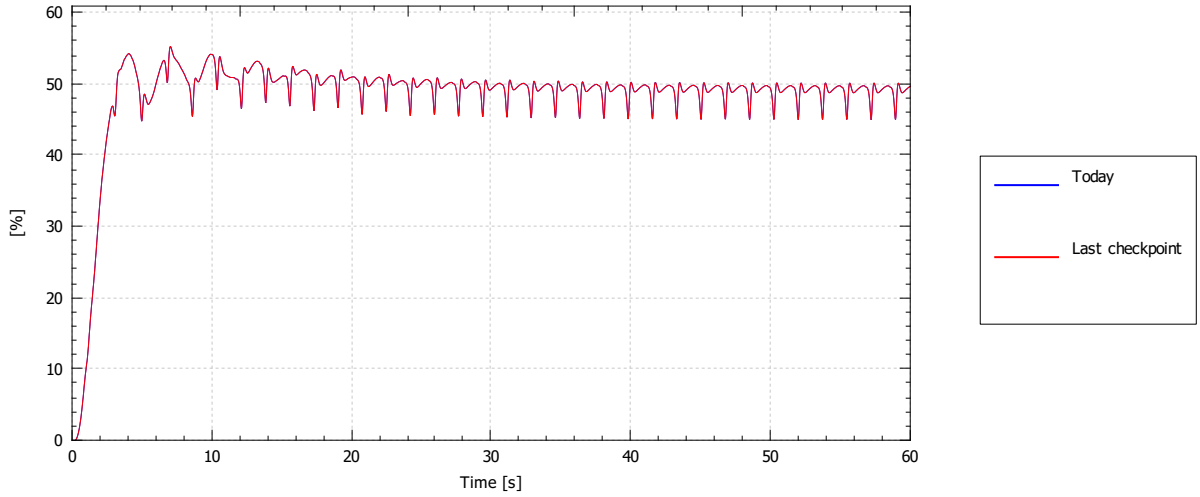

TSR



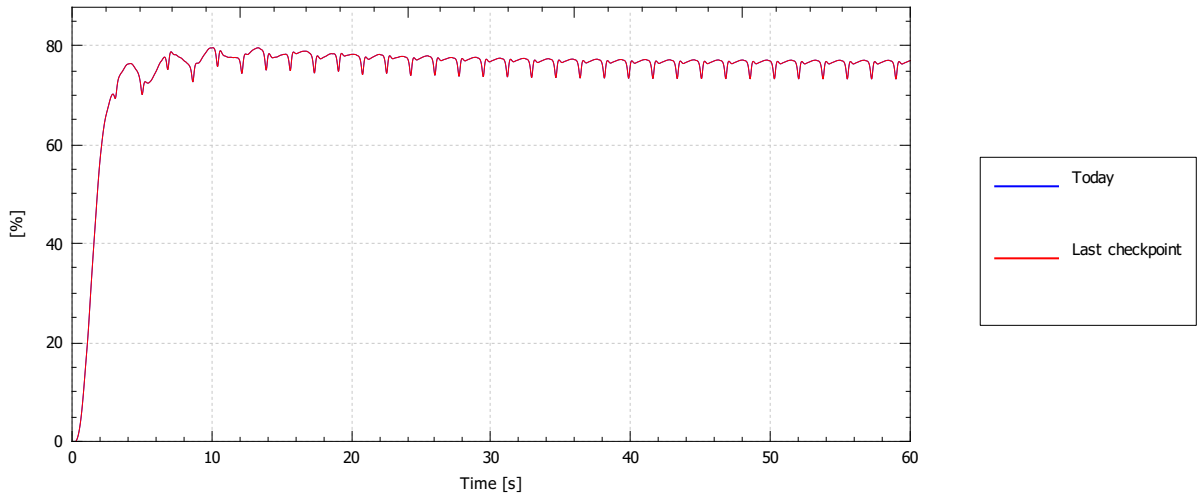

Representative demanded pitch angle



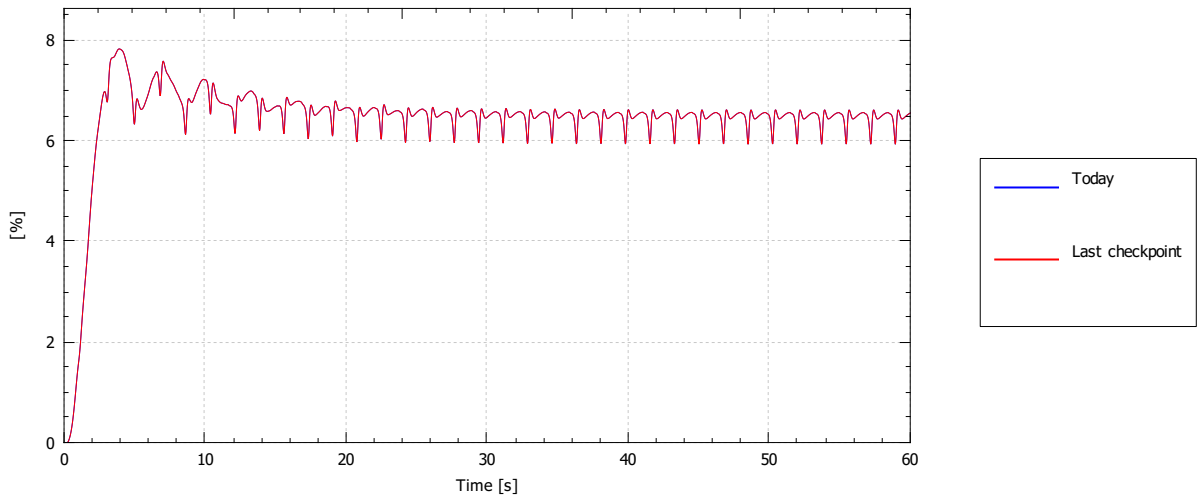
Power coef. (CP)



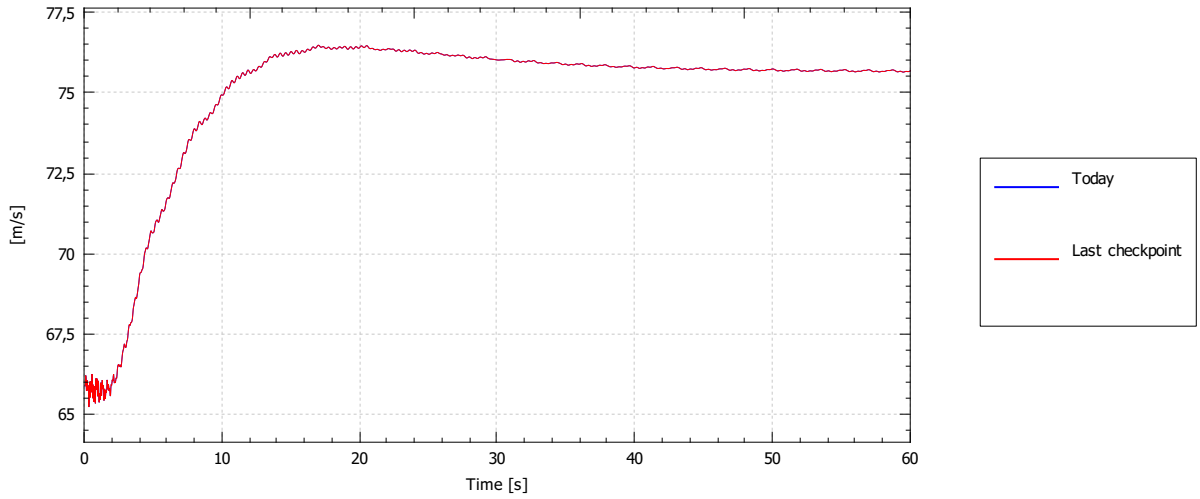

Thrust coef. (CT)



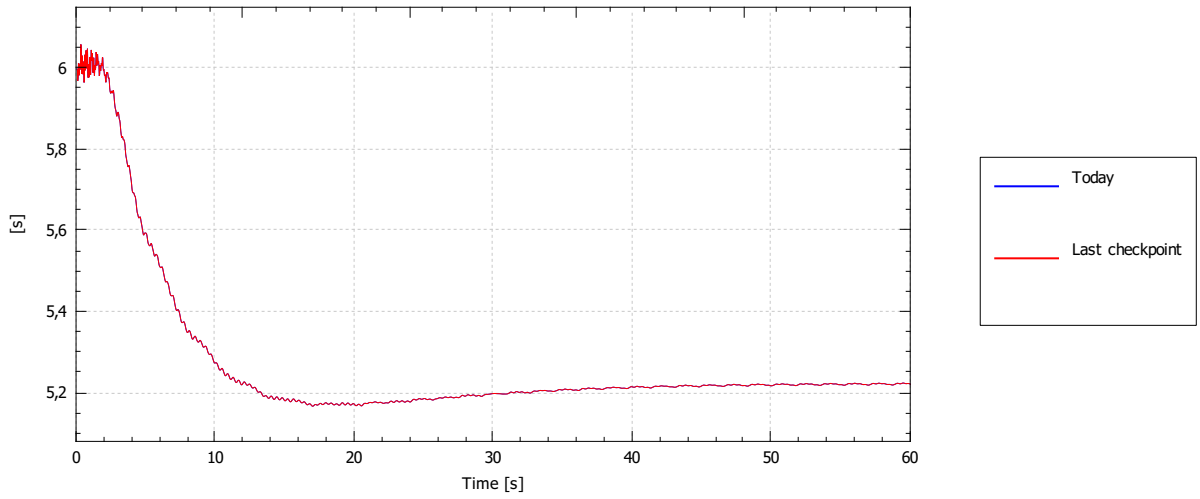

Torque coef. (CQ)



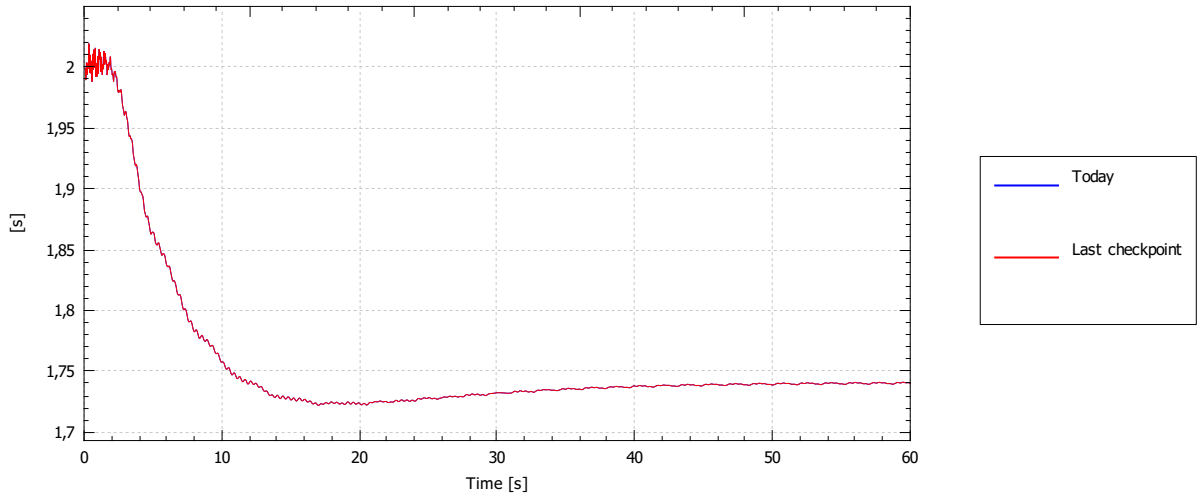
## Tip speed



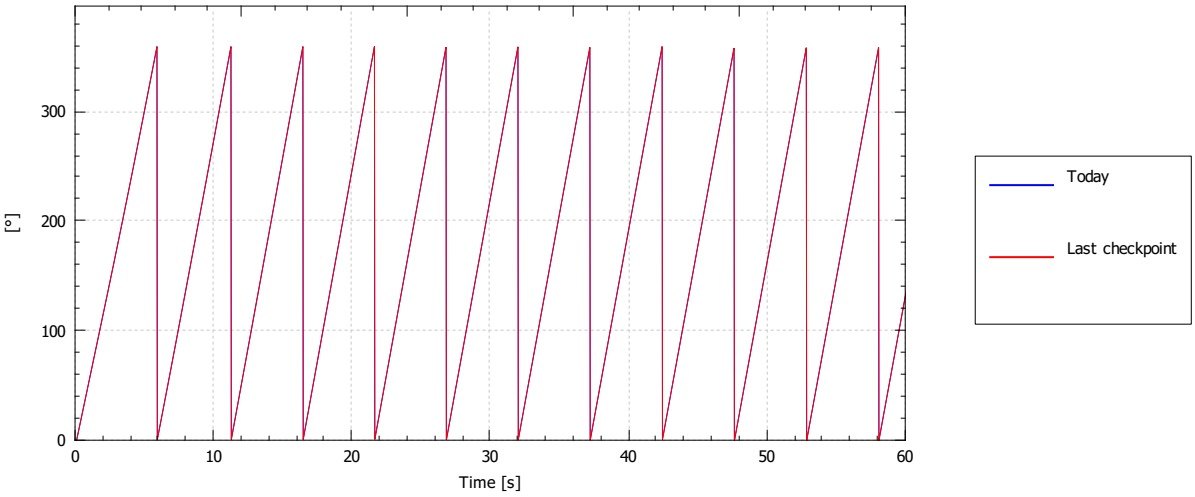

## 1P (one revolution)



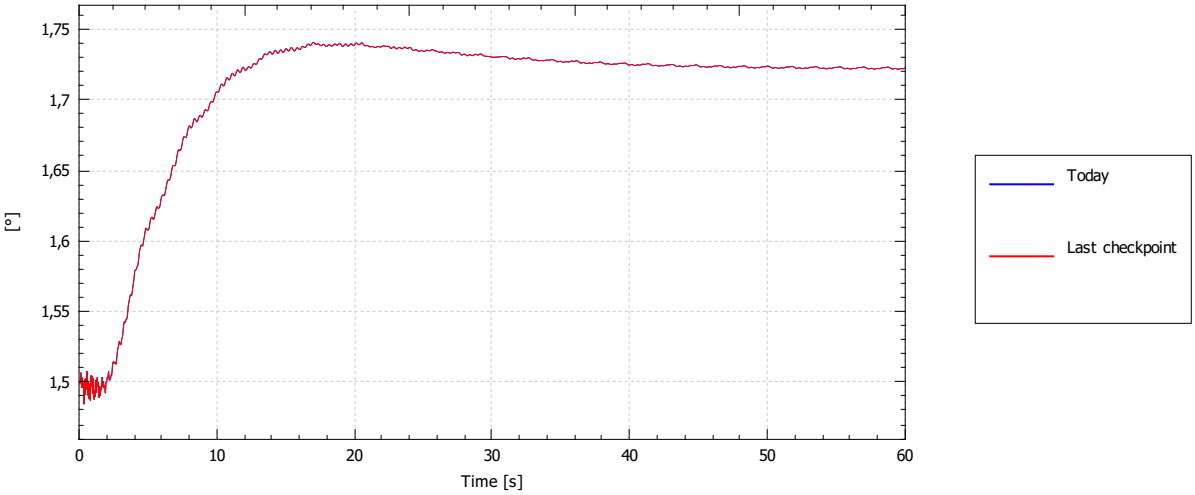

## nP (blade passing)



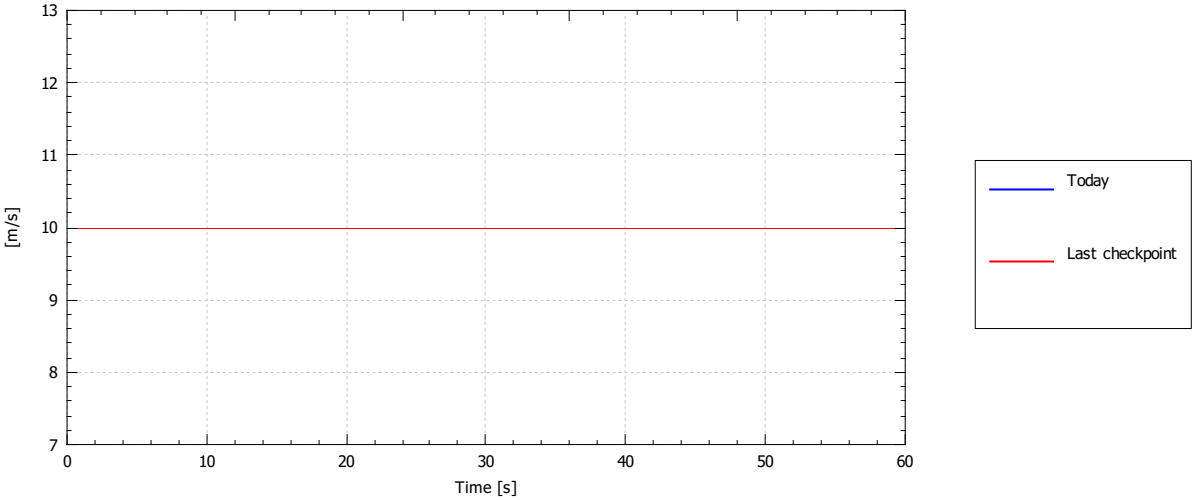
## Azimuth angle



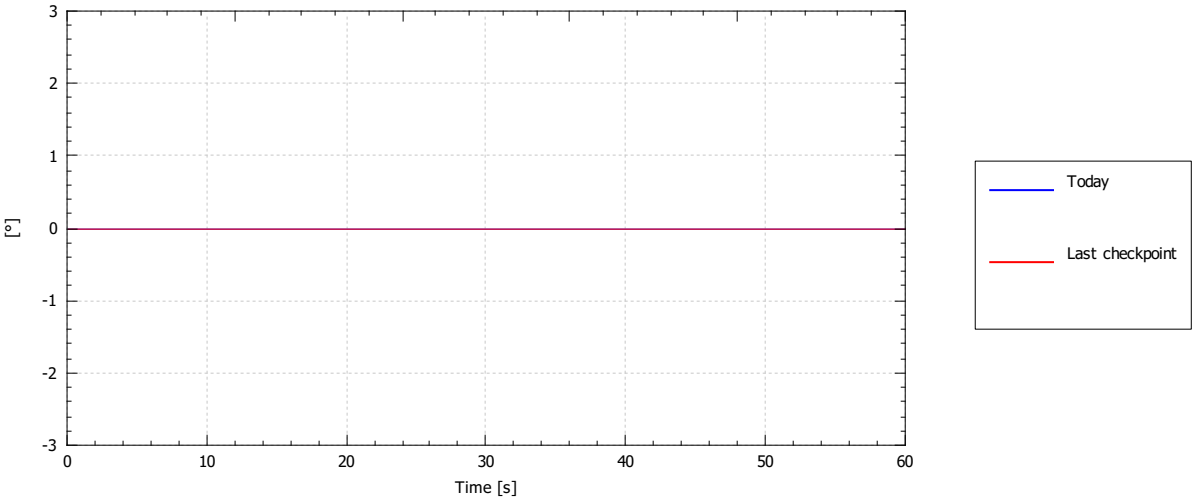

## Rotation per timestep



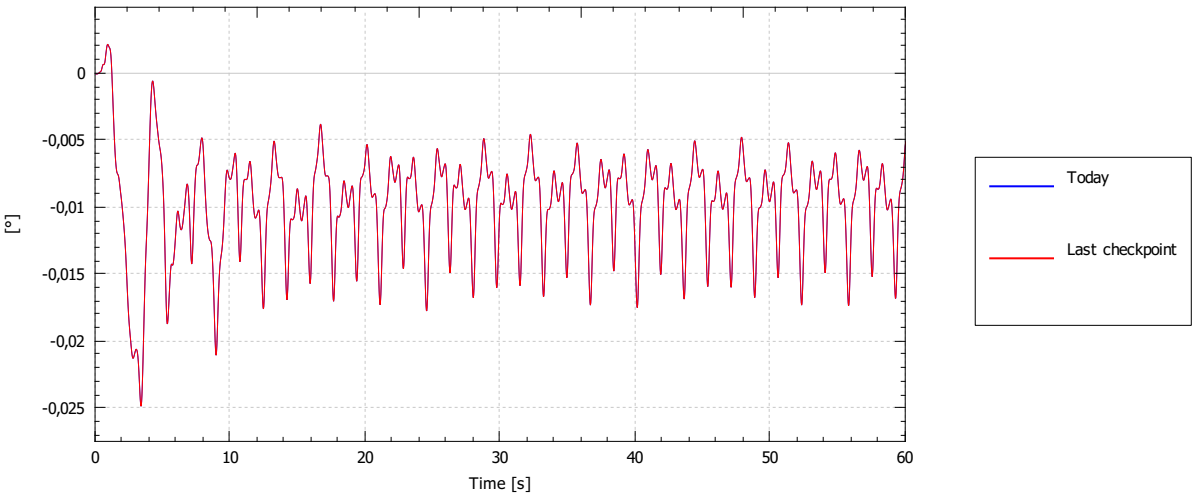

## Wind speed at hub, magnitude



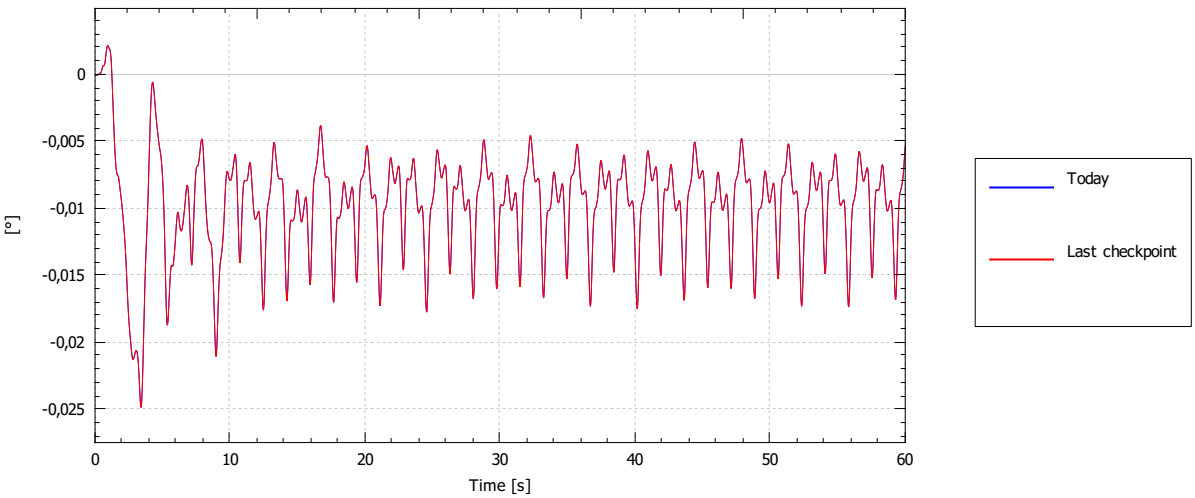
## Wind angle at hub

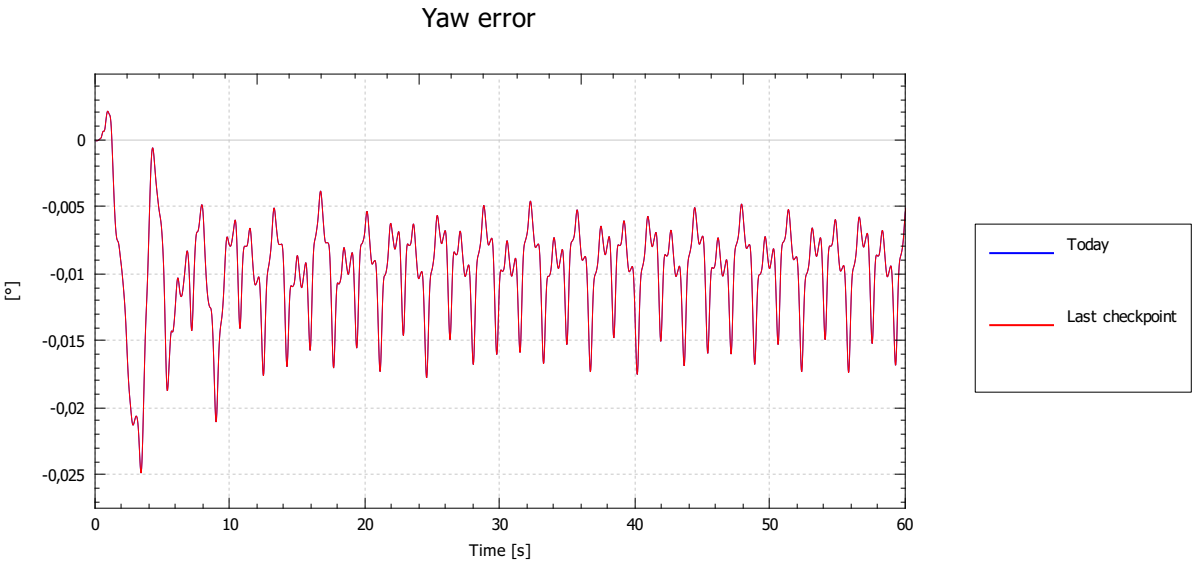


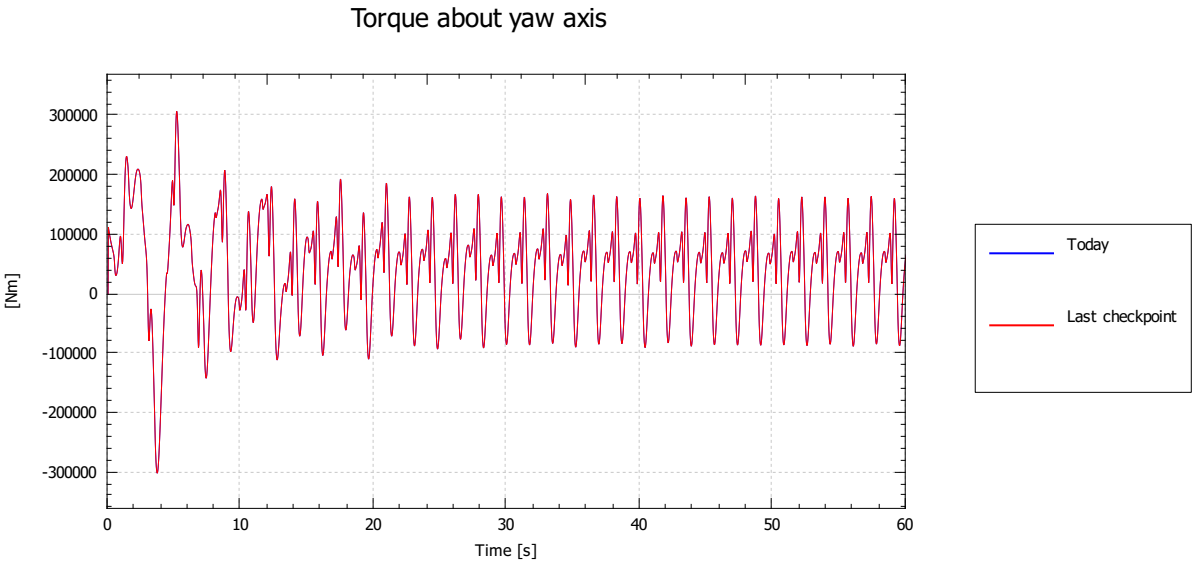

## Yaw angle relative to forward




## Yaw angle to reference direction

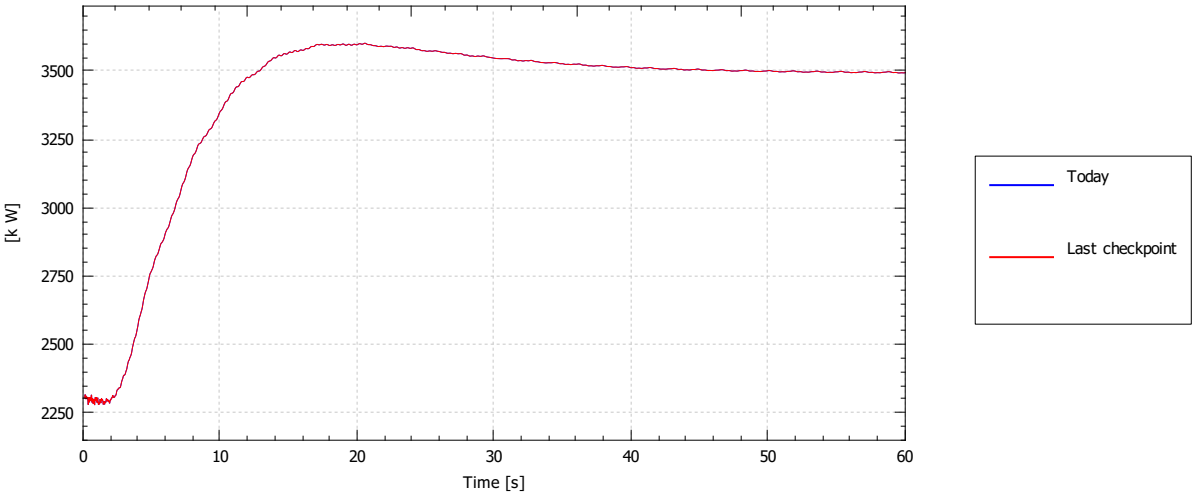



Yaw error
0
-0,005
-0,01
-0,015
-0,02
-0,025
[°]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint

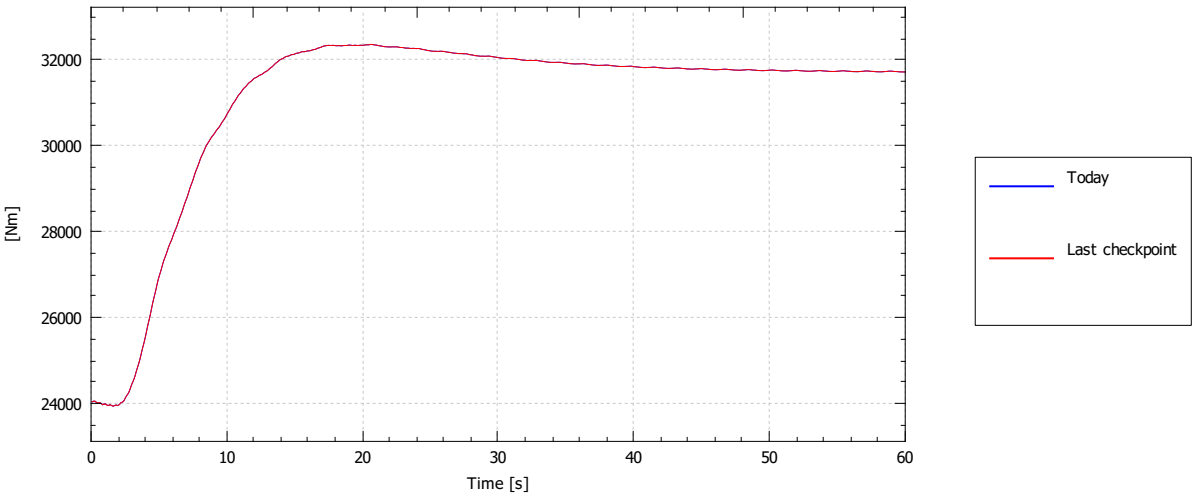

Torque about yaw axis
300000
200000
100000
0
-100000
-200000
-300000
[Nm]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint

**Generator**

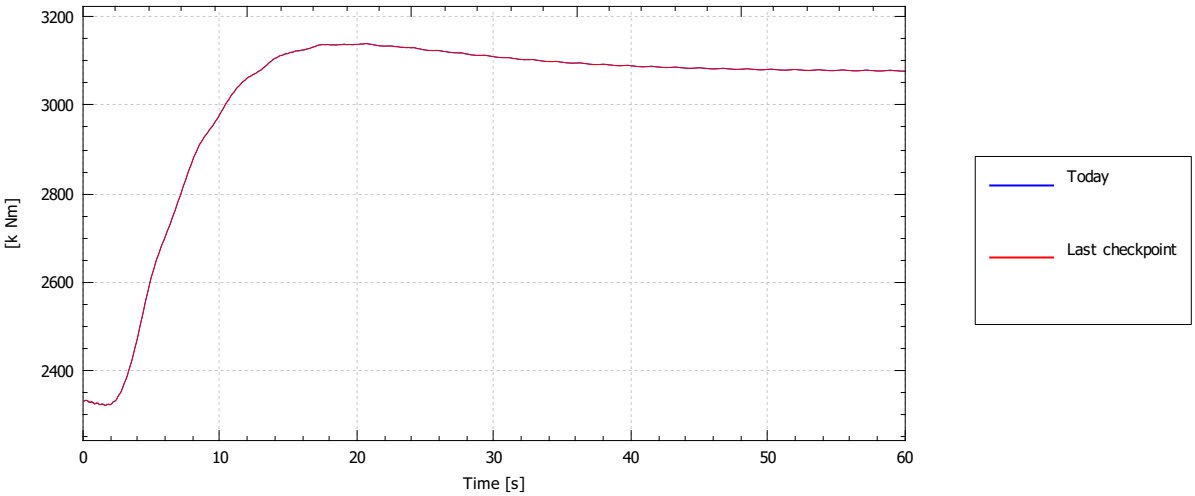
## Power (electrical)



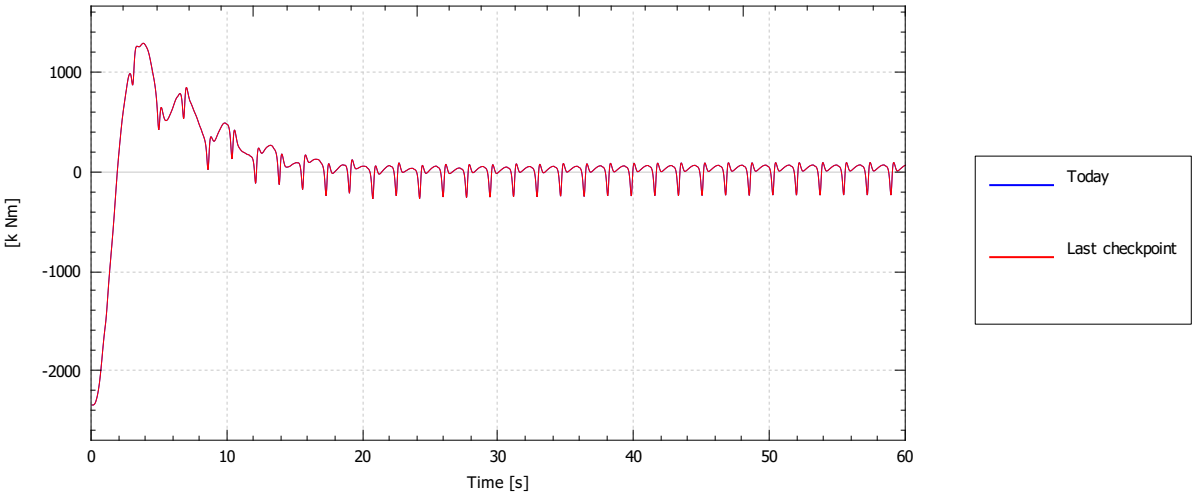

## Torque



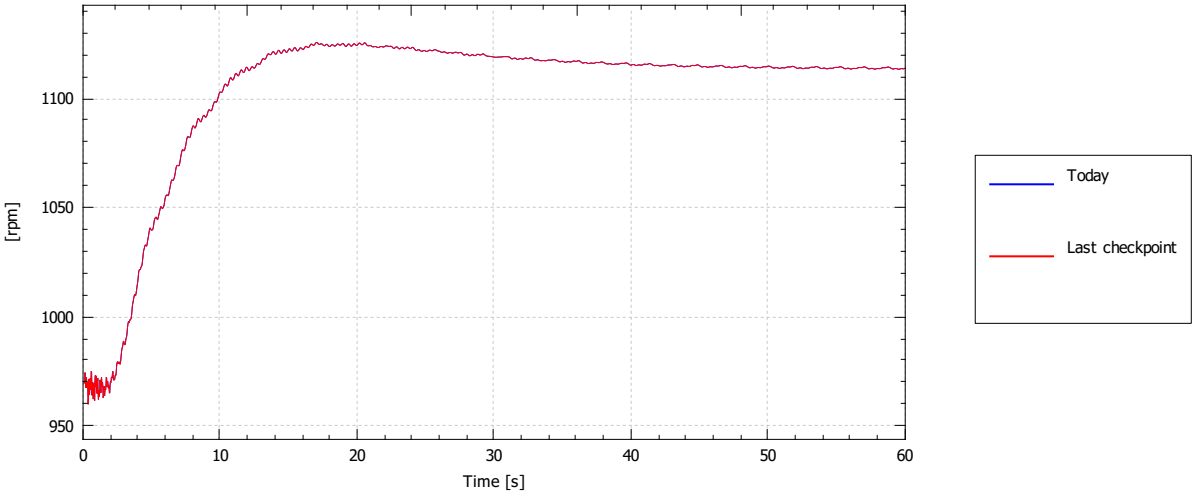

## Torque on main shaft



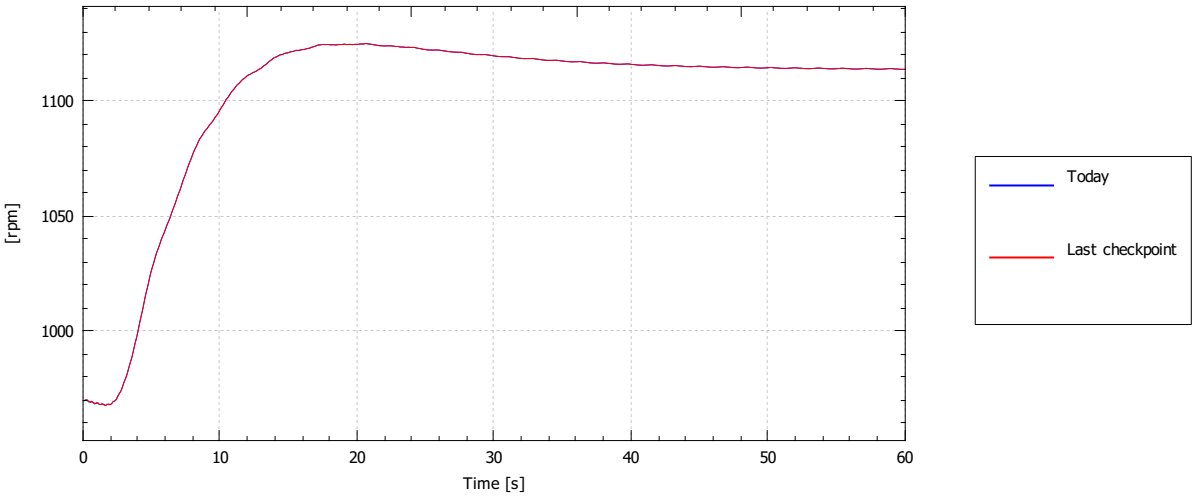
## Torque diff. on main shaft

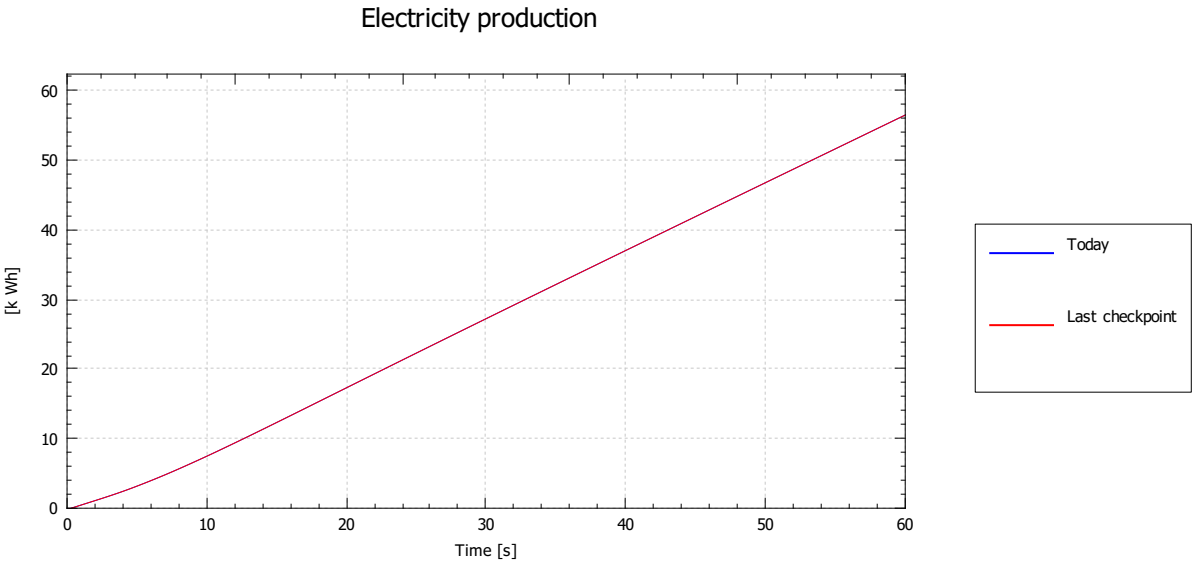


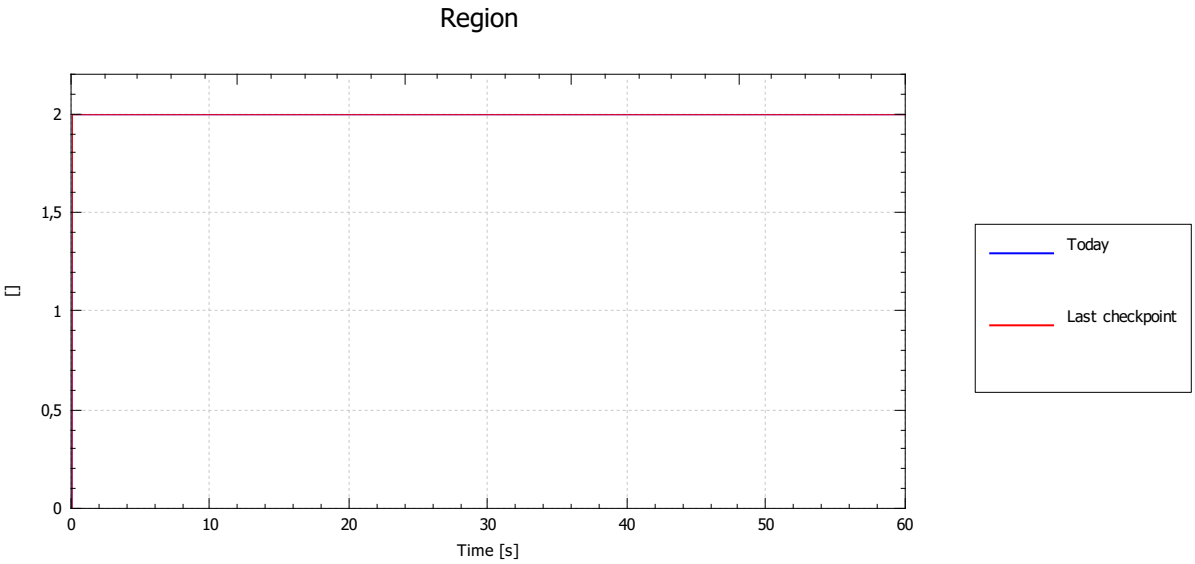

## RPM




## Filtered RPM

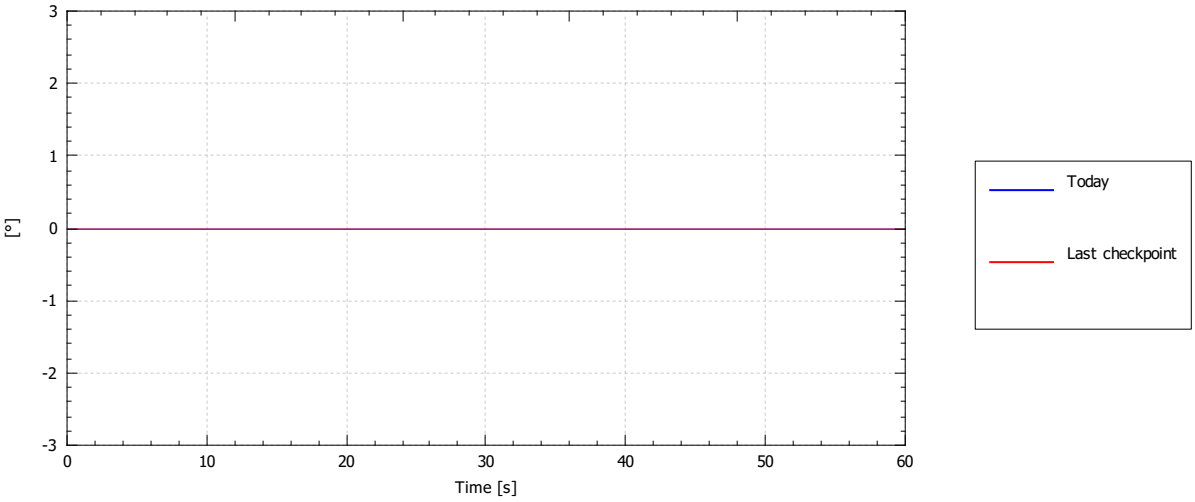




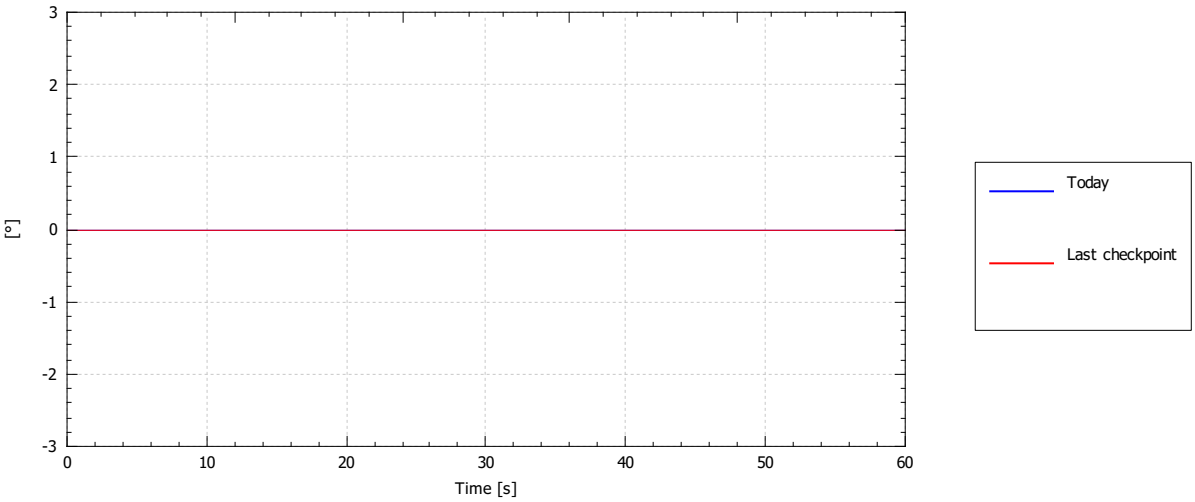




**Demanded pitch controller**

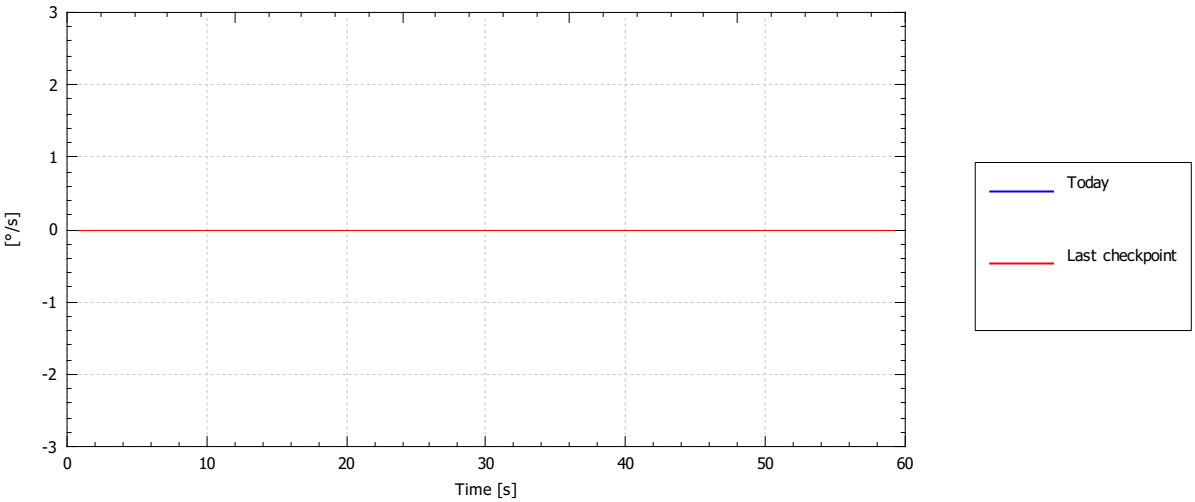
Demanded collective pitch angle



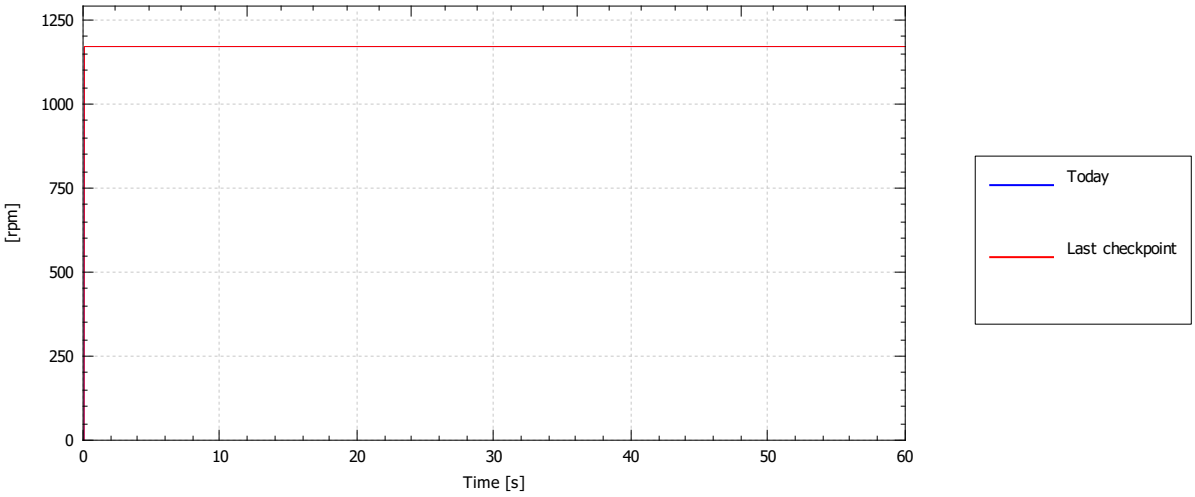

Cumulative demanded collective pitch angle



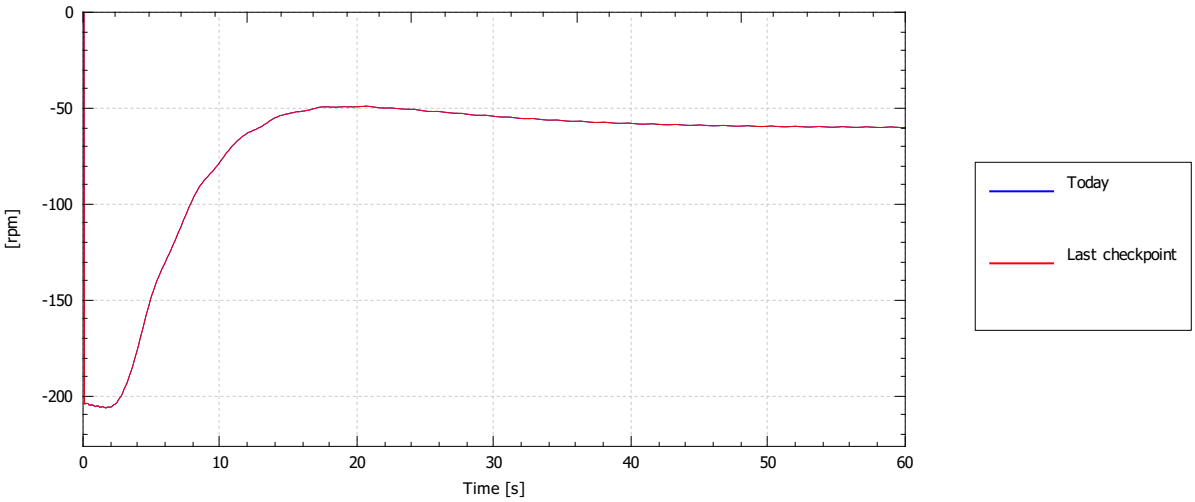

Demanded collective pitch angle rate



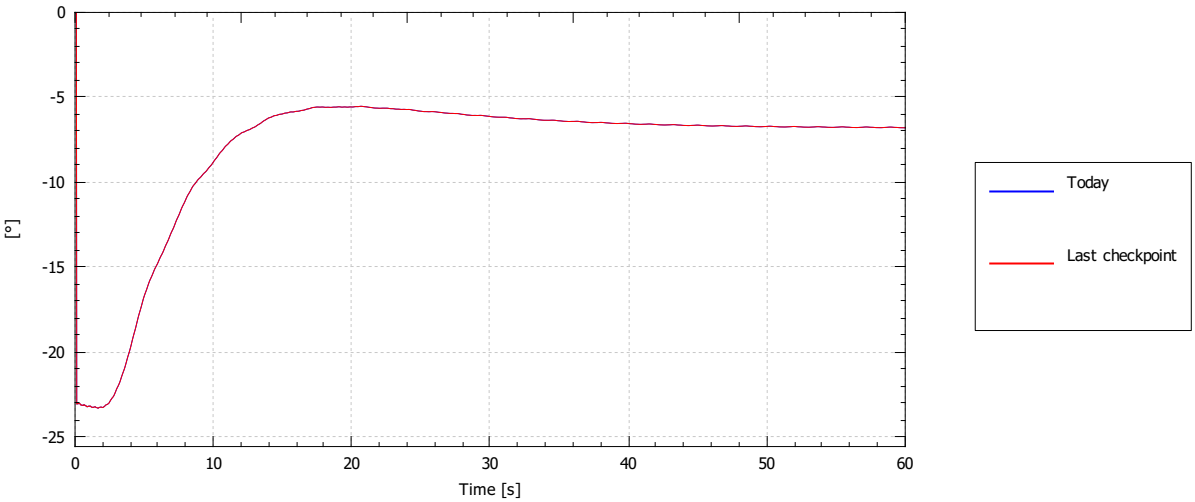
## Set point



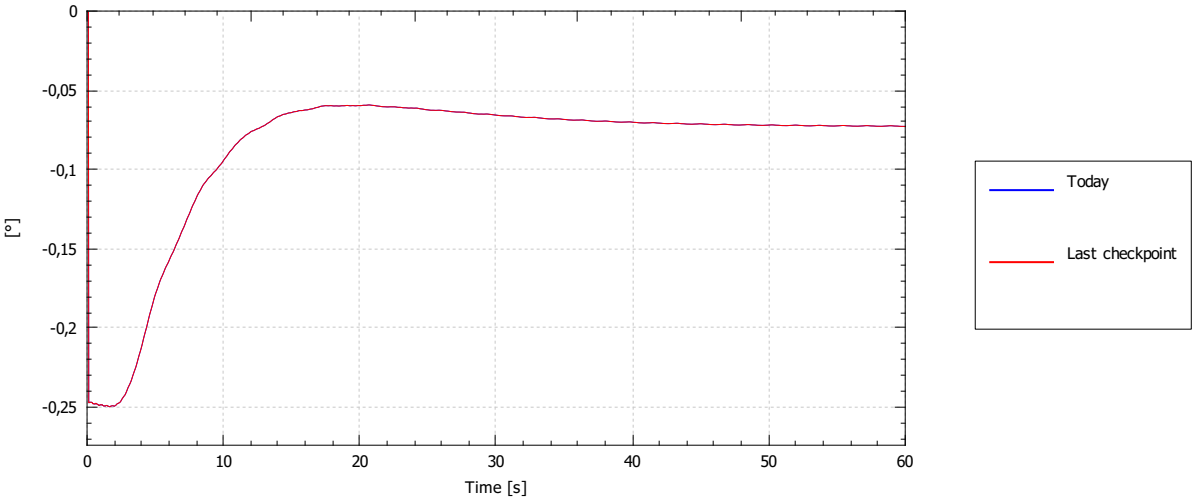

## RPM error



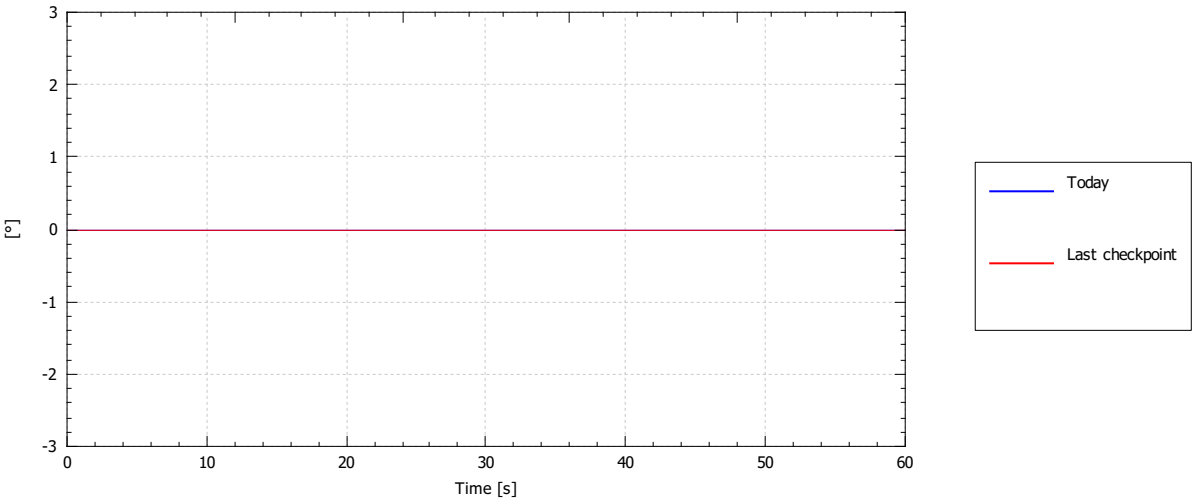

## P term



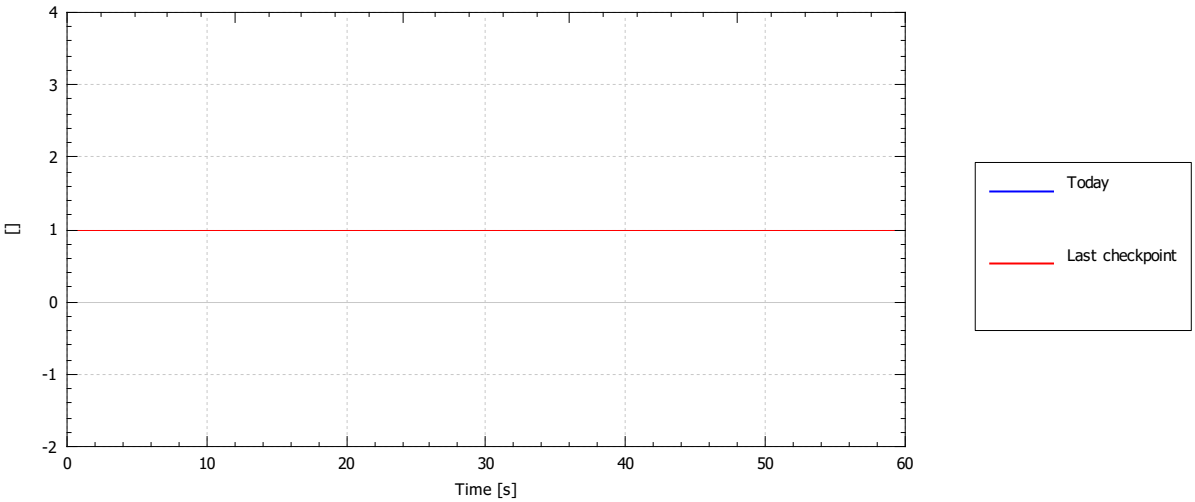
## I term




## D term

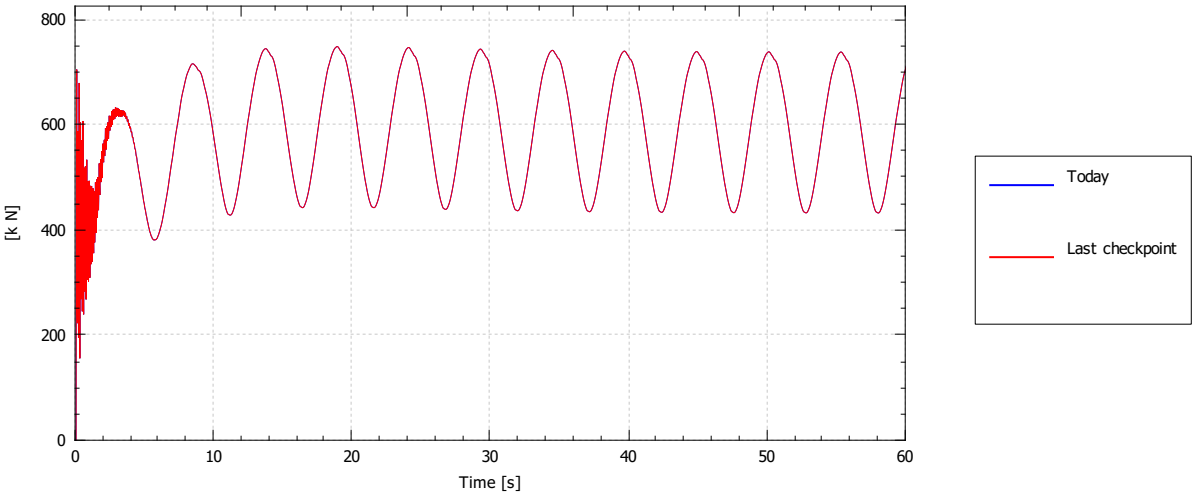



## Gain scheduling factor

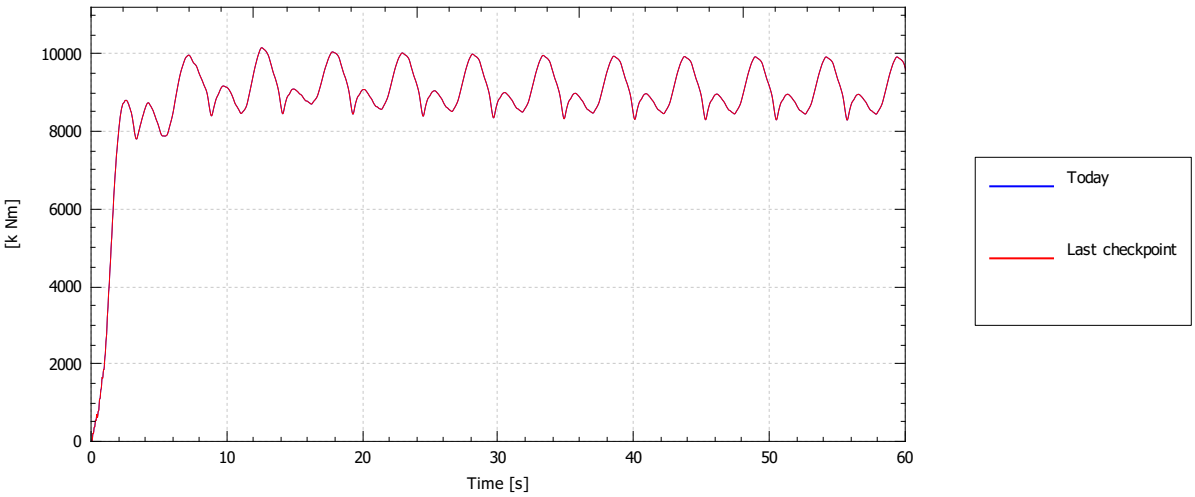


**Blade [Time] [Blade 1]**

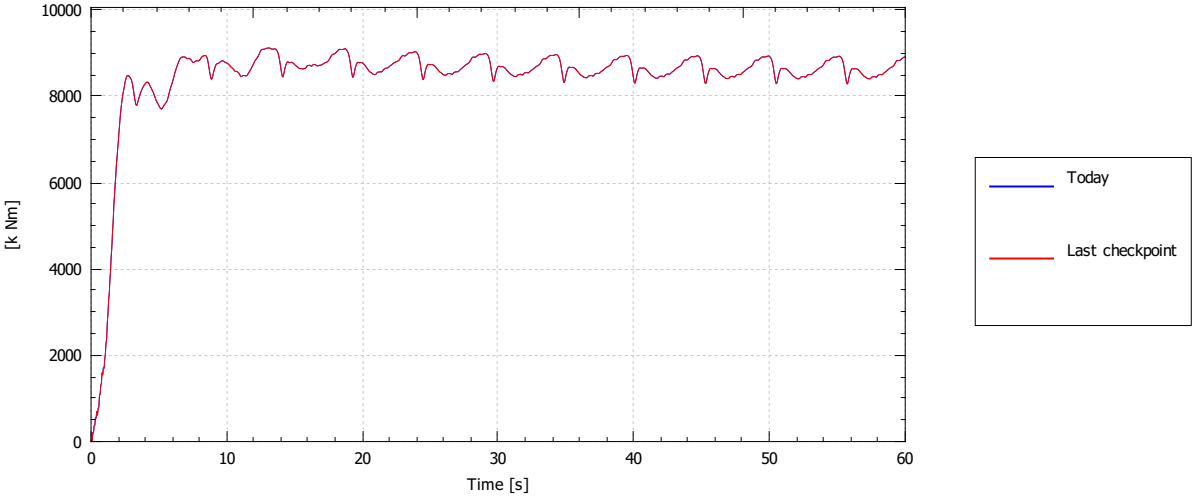
Root force (magnitude)



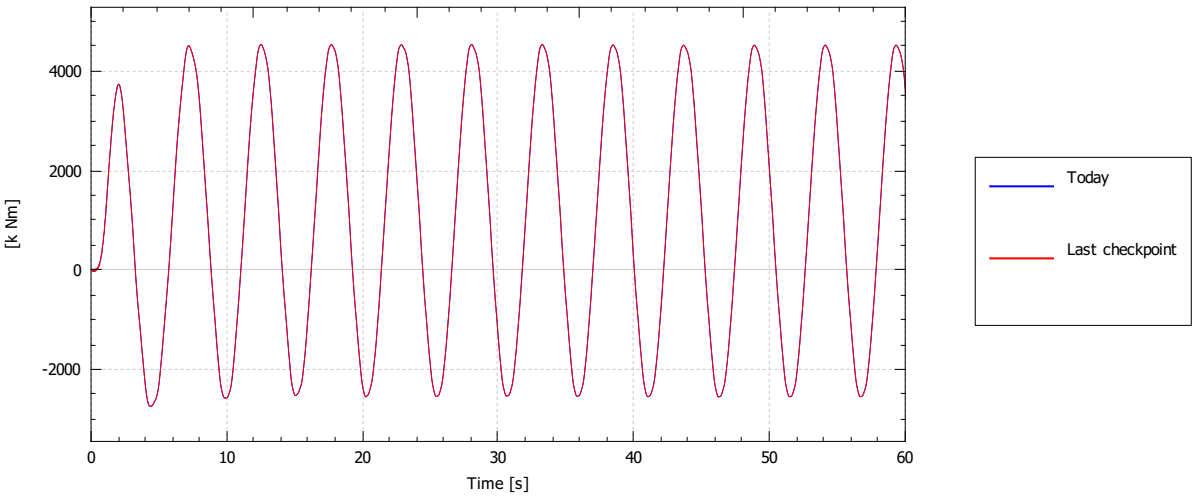

Root moment (magnitude)



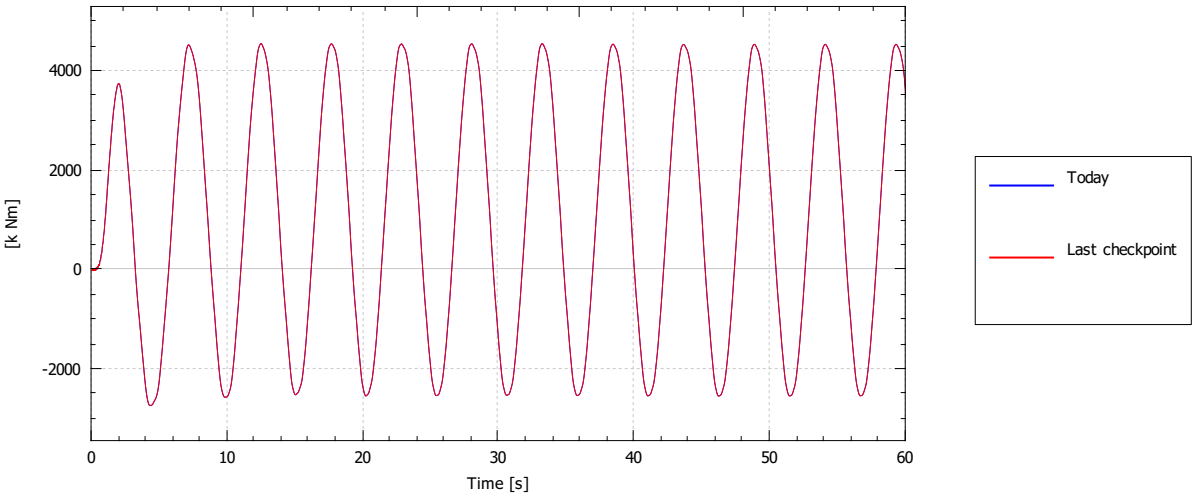

Root moment (out-of-plane)



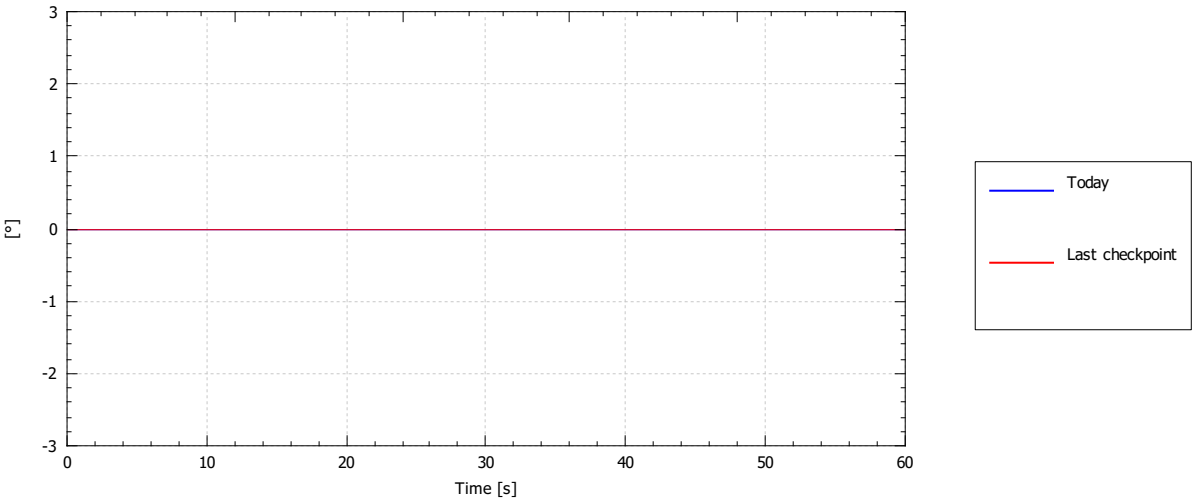
Root moment (in-plane)



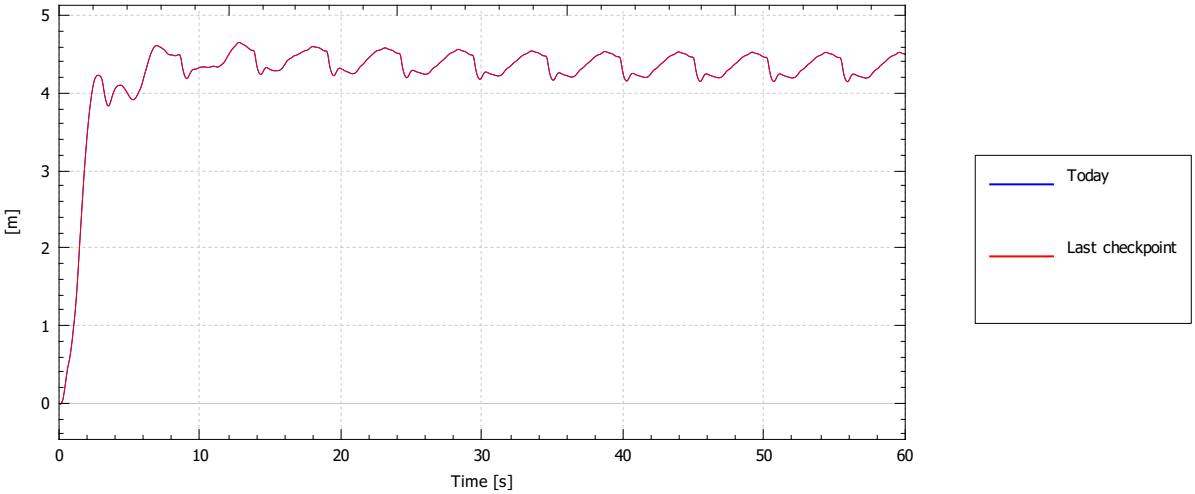

Root moment about shaft



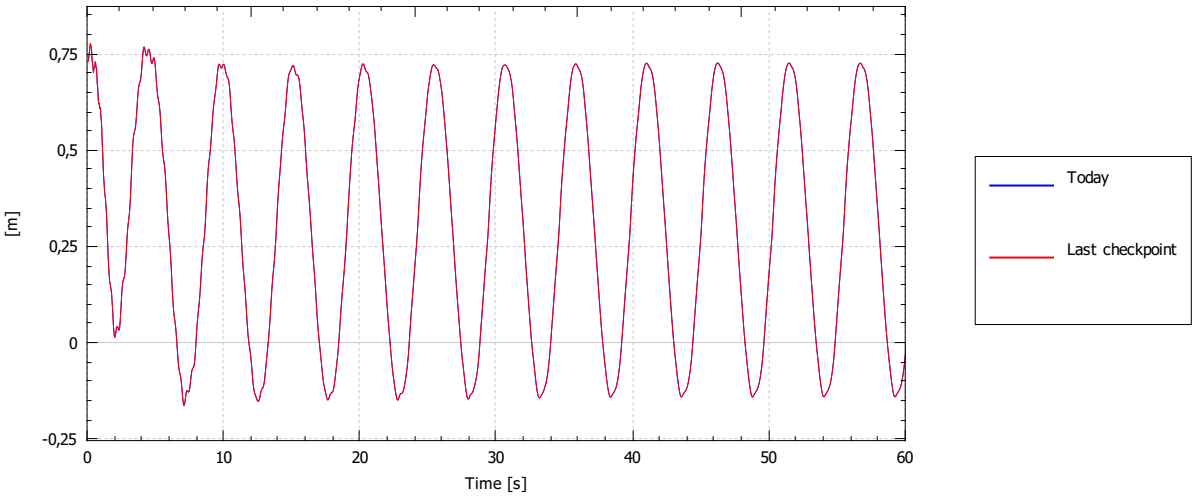

Pitch angle



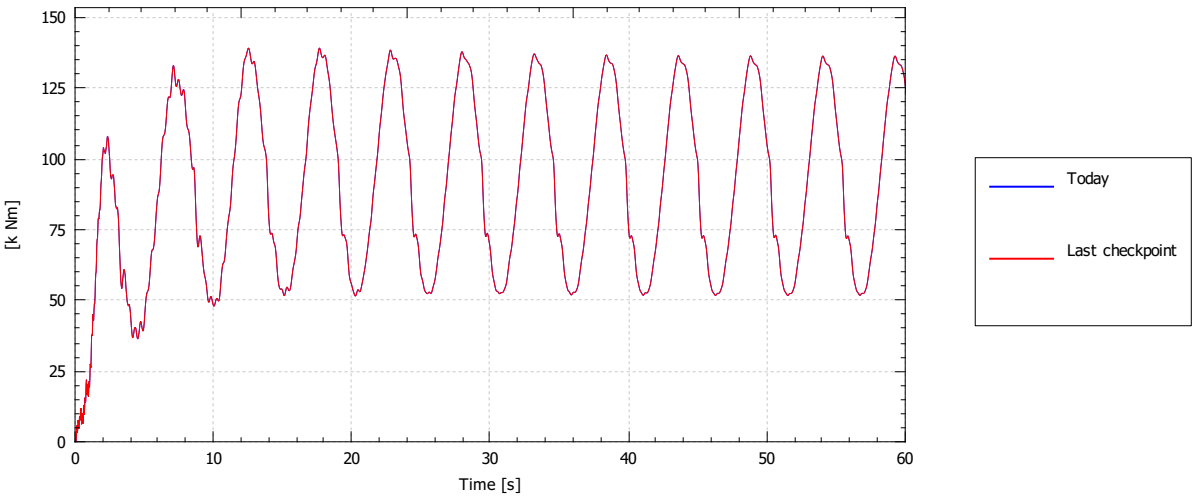
Tip deflection (out-of-plane)




Tip deflection (in-plane)

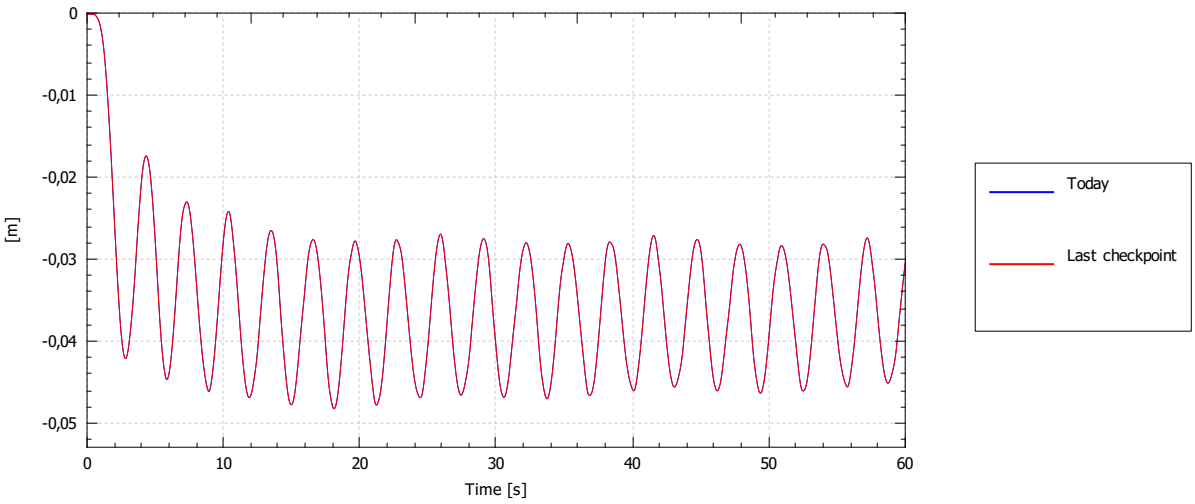



Root torque

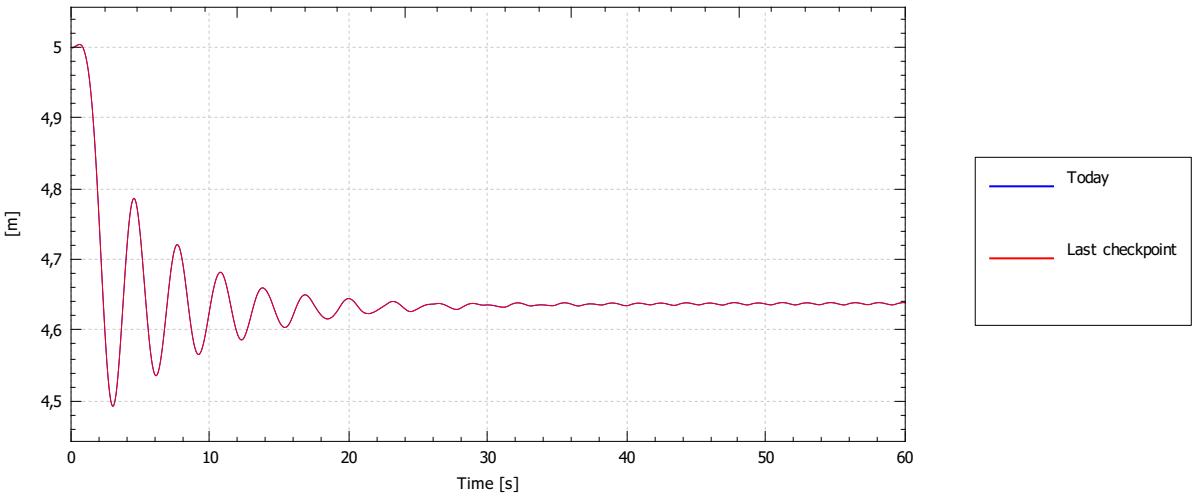


**Node [Node Hub | Hub]**

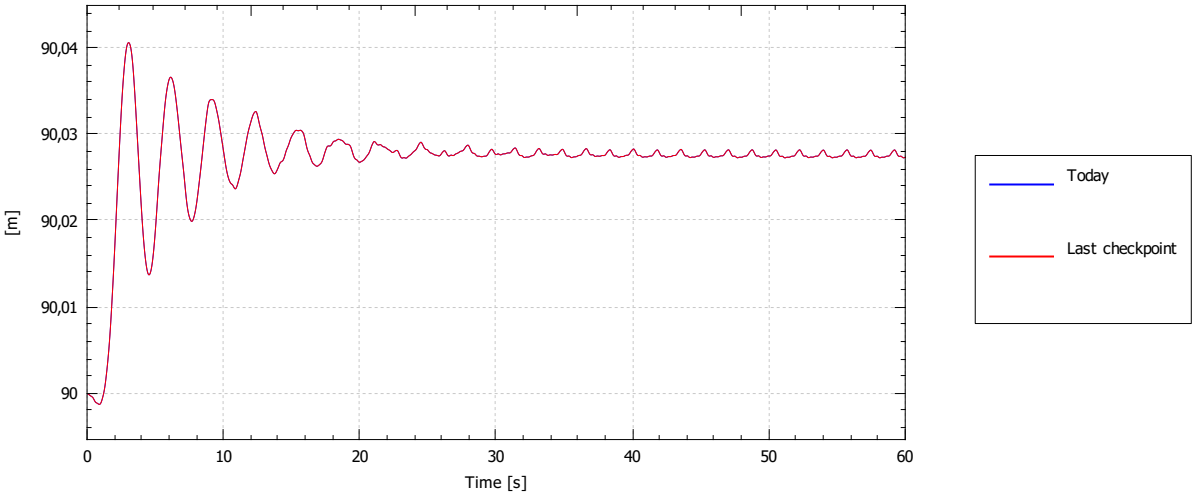
Position (x)

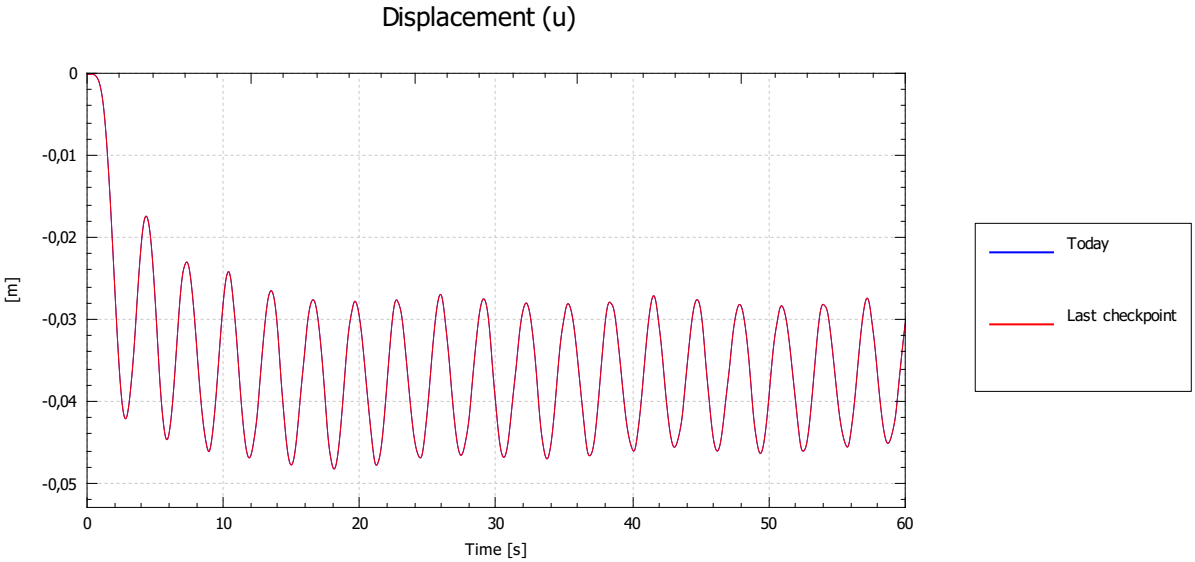


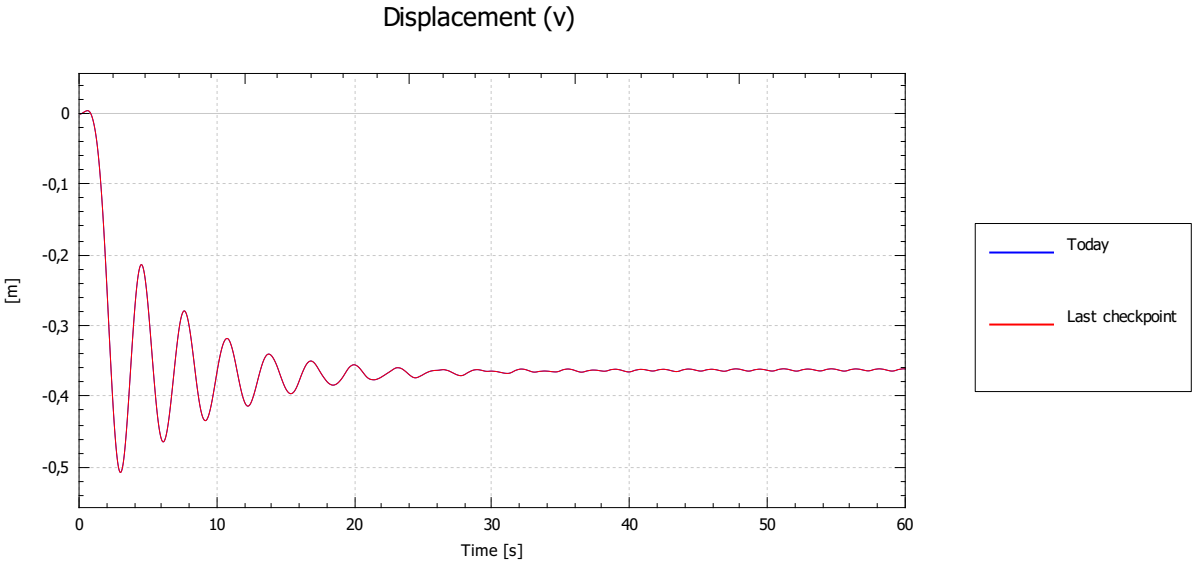

Position (y)

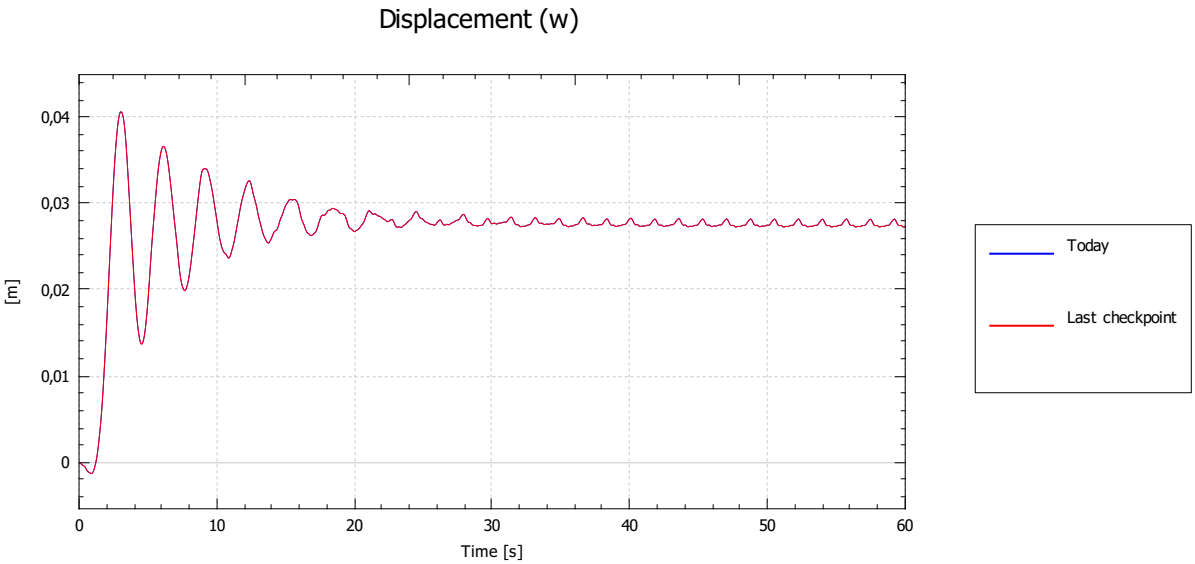



Position (z)

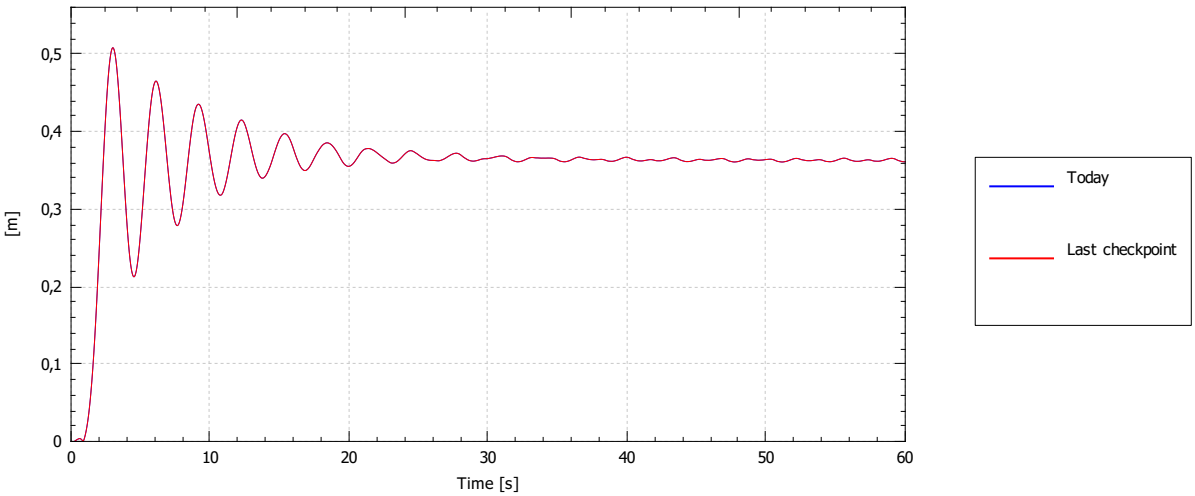



Displacement (u)
0
-0,01
-0,02
-0,03
-0,04
-0,05
[m]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint

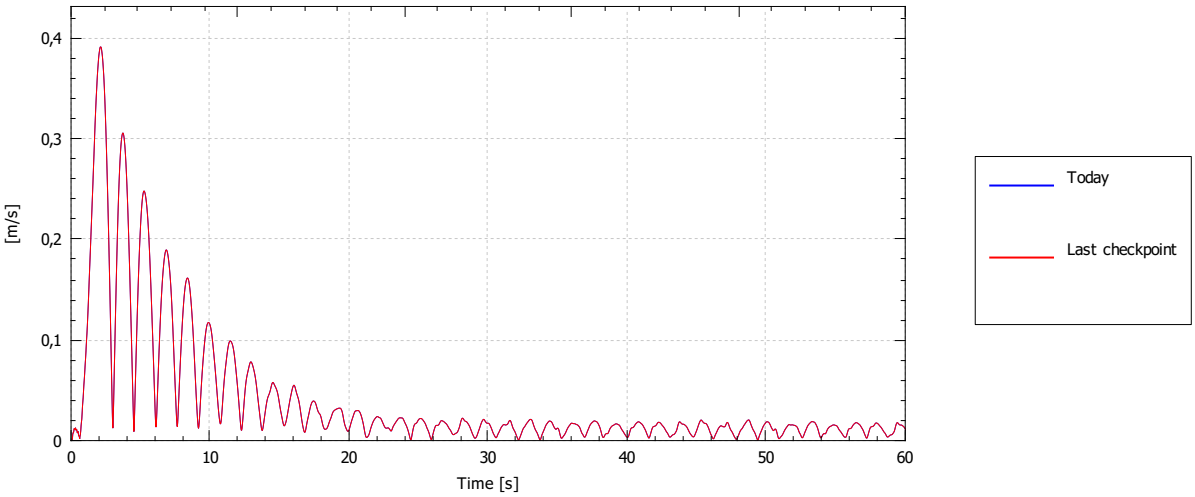

Displacement (v)
0
-0,1
-0,2
-0,3
-0,4
-0,5
[m]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint


Displacement (w)
0,04
0,03
0,02
0,01
0
[m]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint

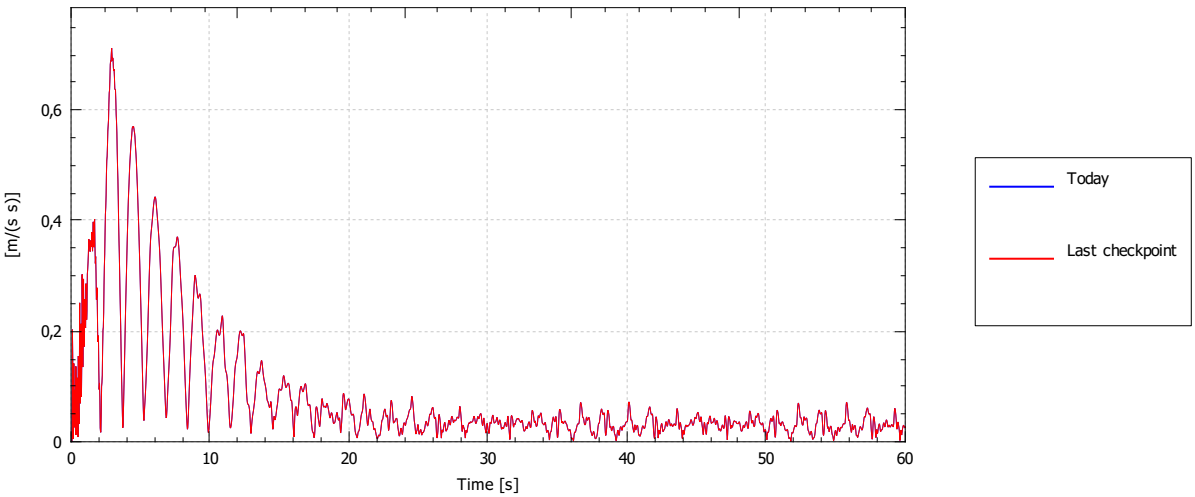
Displacement magnitude



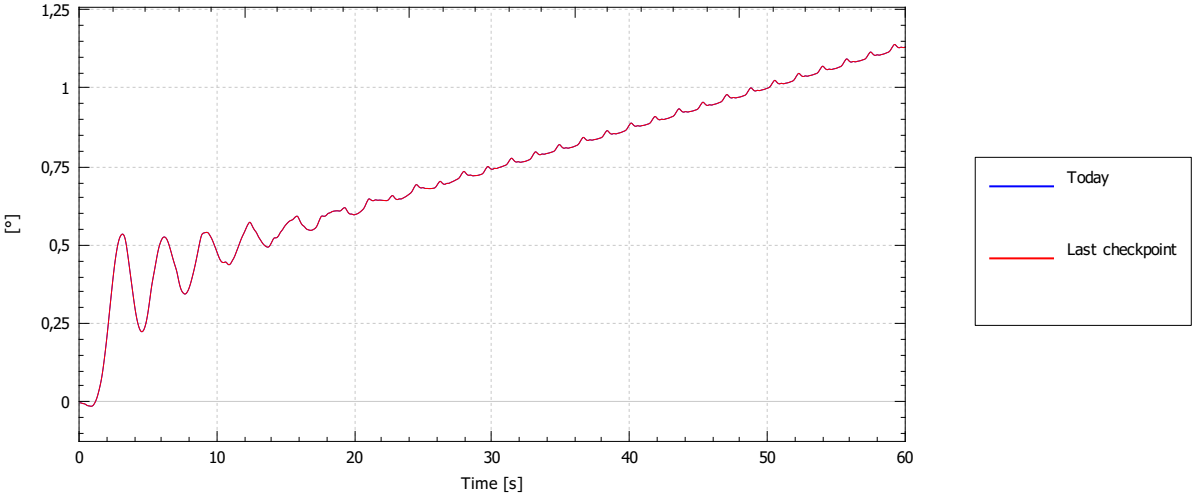

Speed



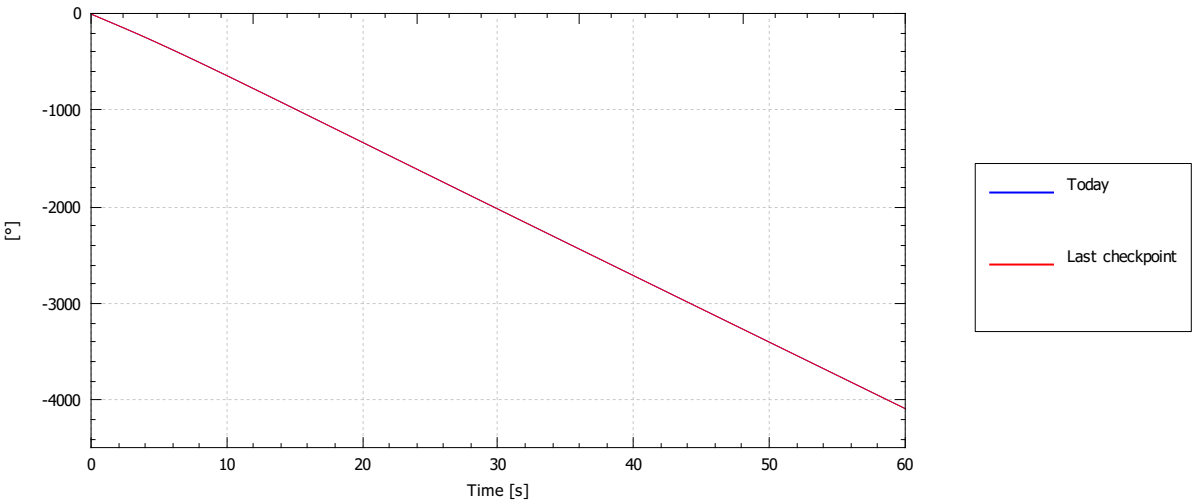

Acceleration, magnitude



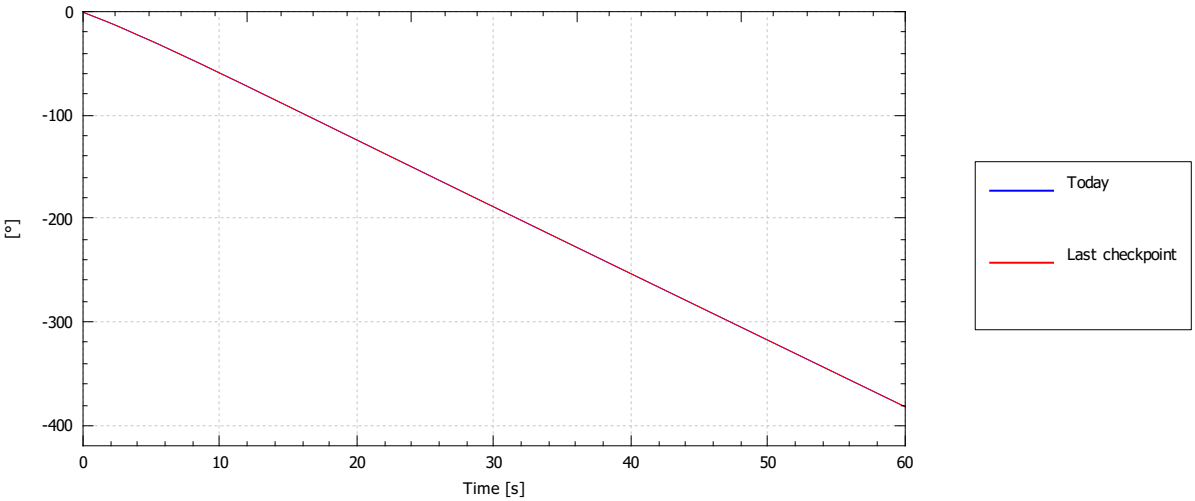
## Rotational displacement (ru)



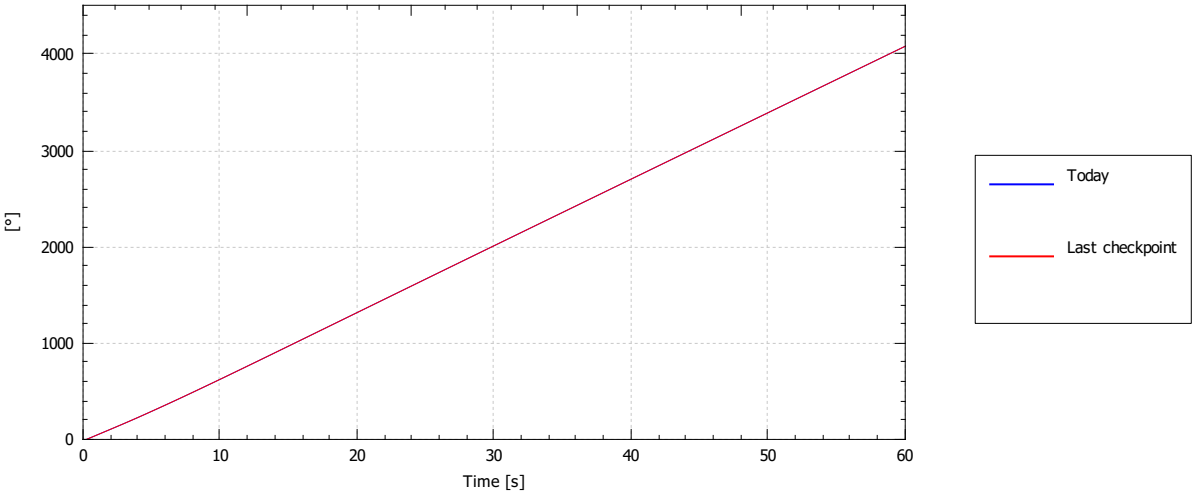

## Rotational displacement (rv)



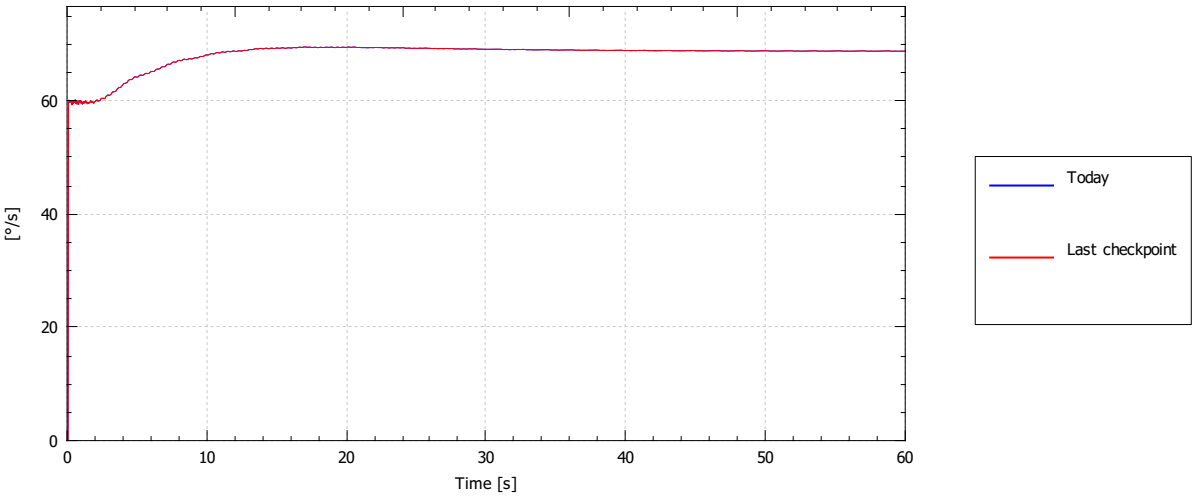

## Rotational displacement (rw)



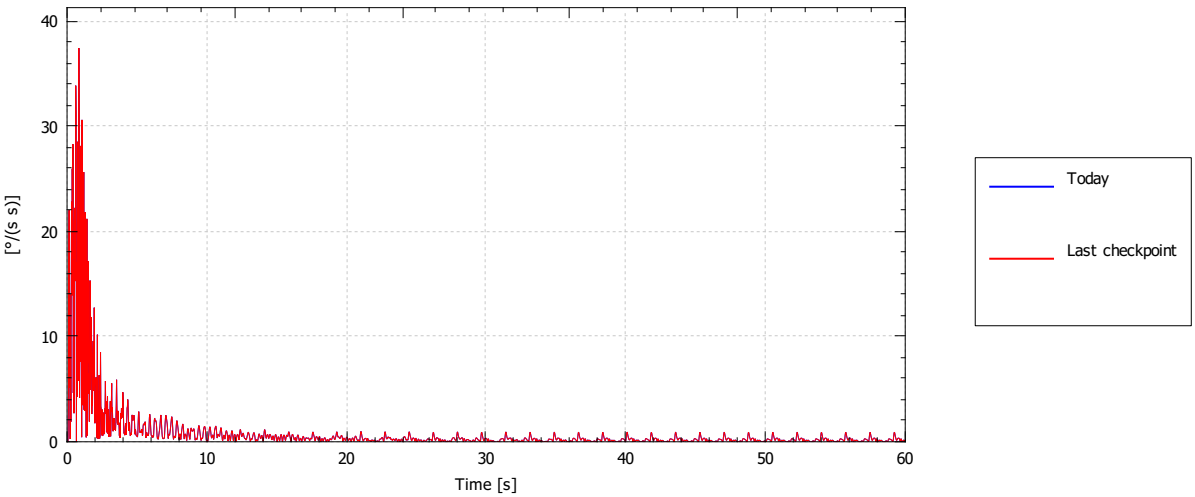
Rotational displacement magnitude



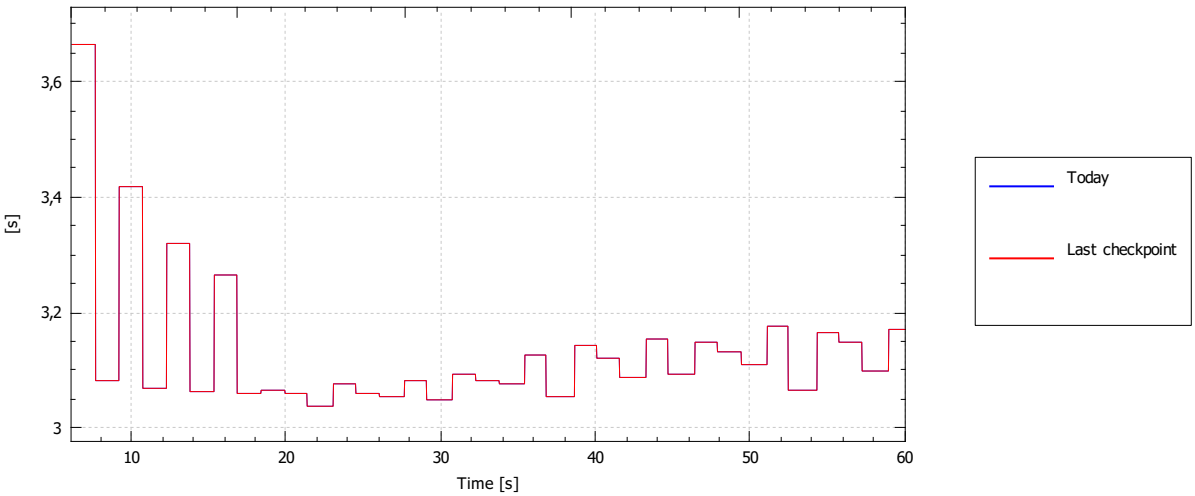

Rotational speed



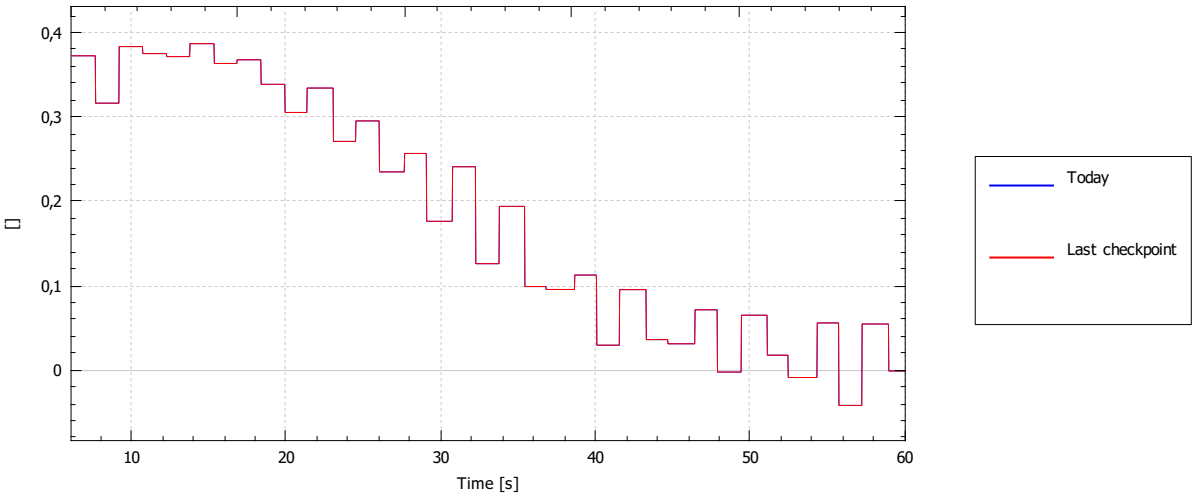

Rotational acceleration mag



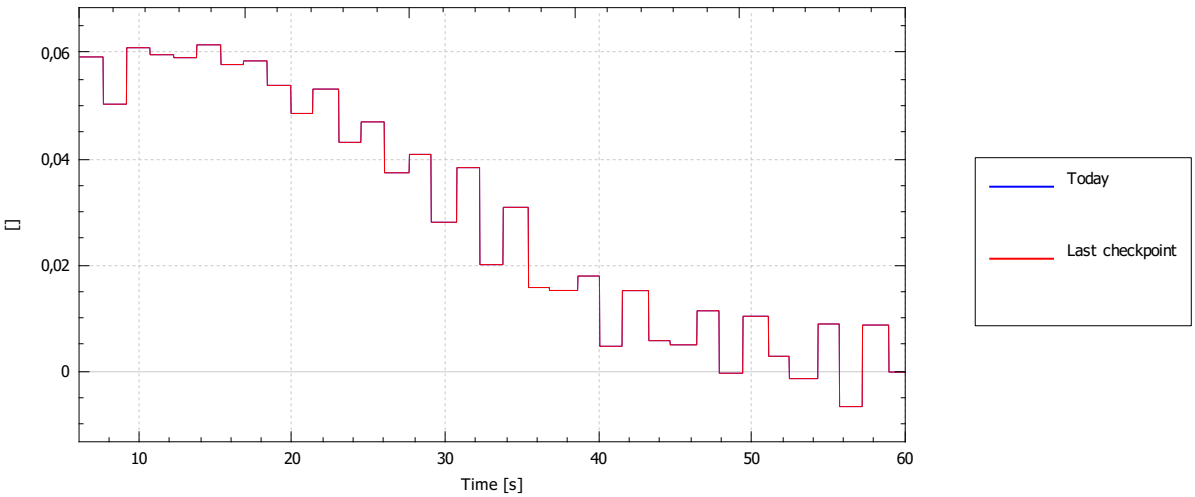
Displacement period




Displacement logarithmic decrement

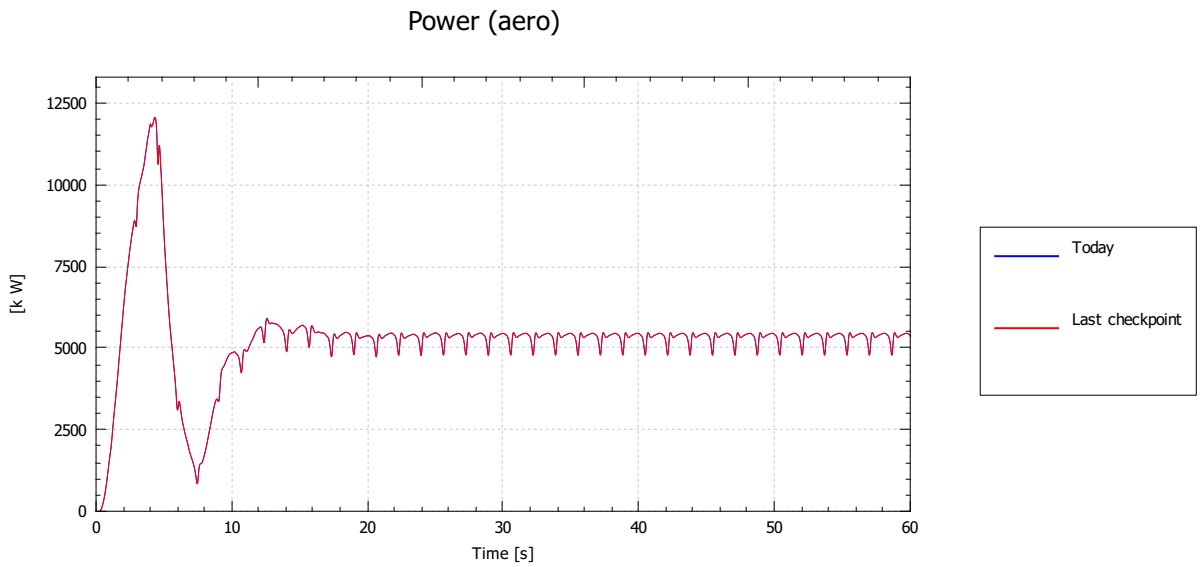


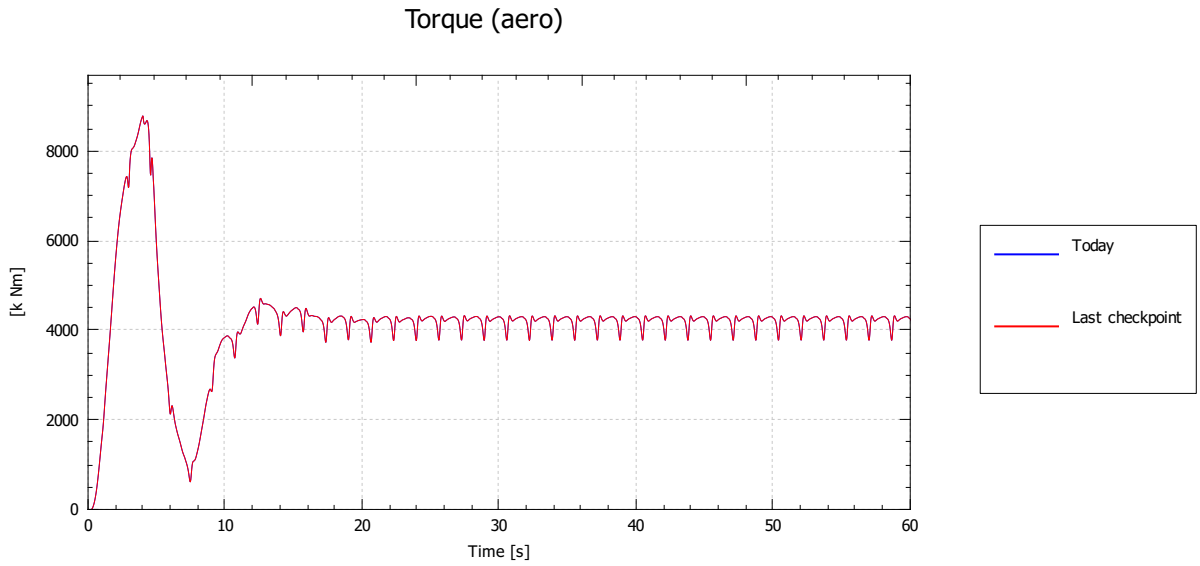

Displacement damping ratio



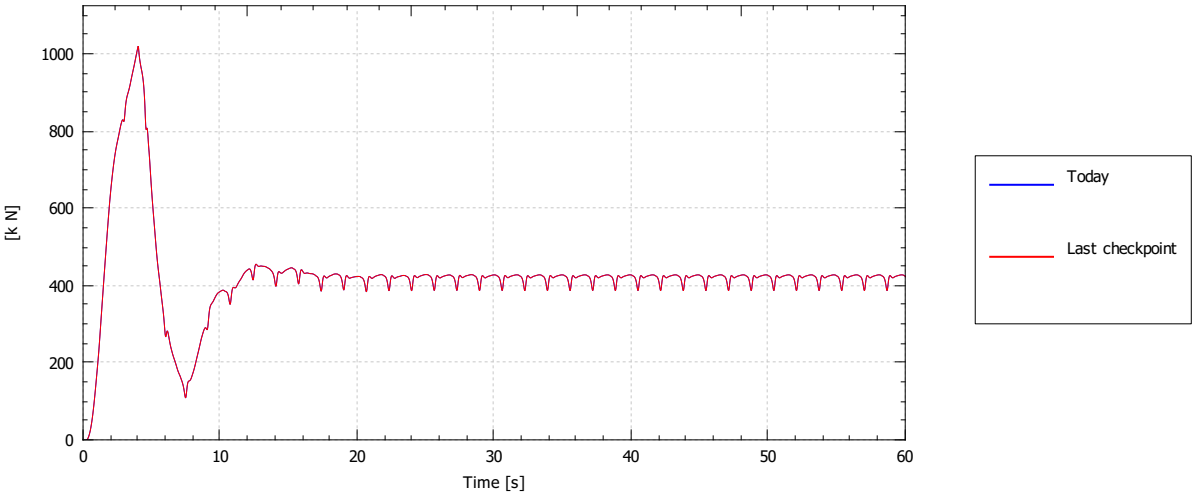
**Load case: wind speed**

**Rotor**

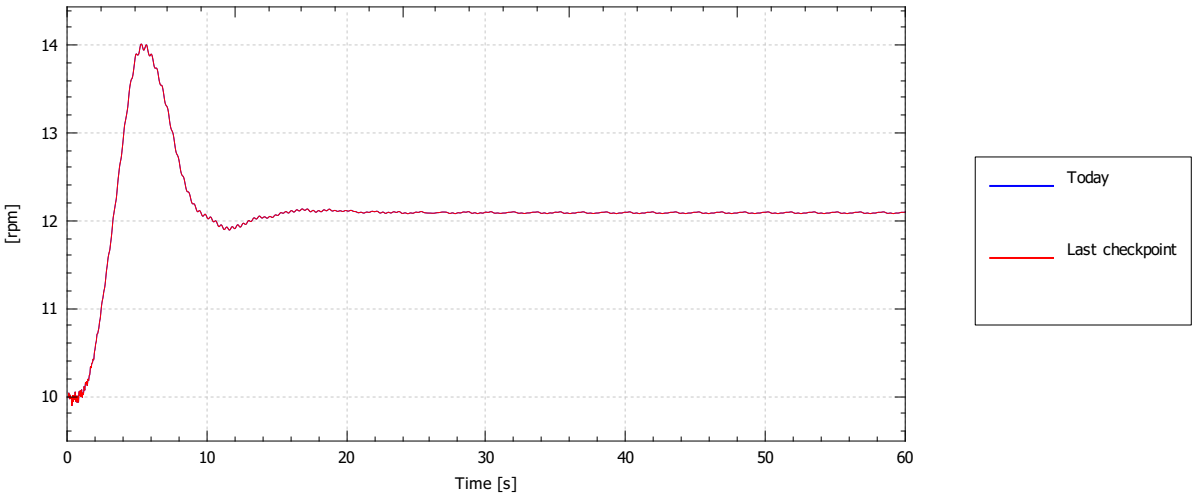


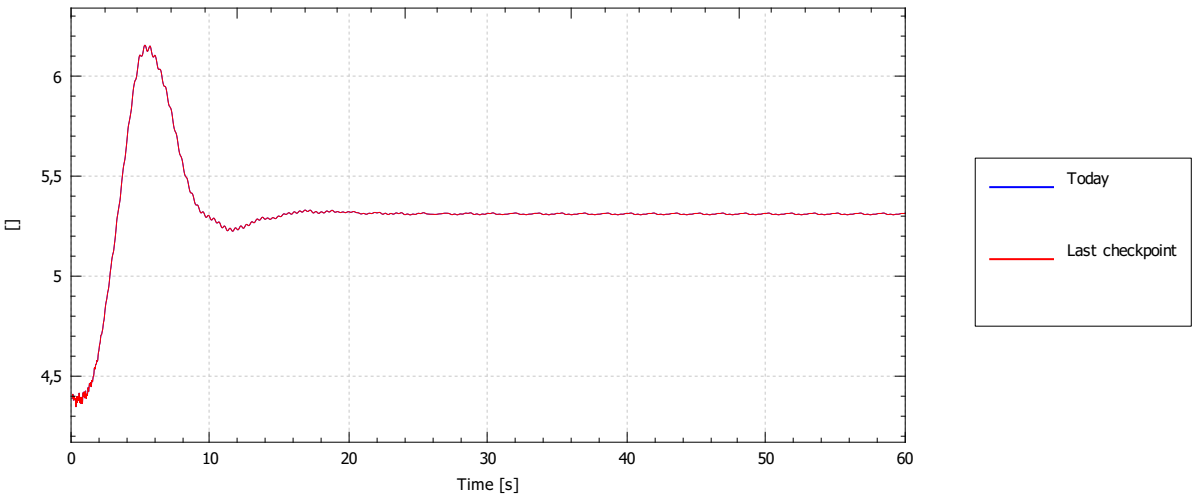
Thrust (aero)



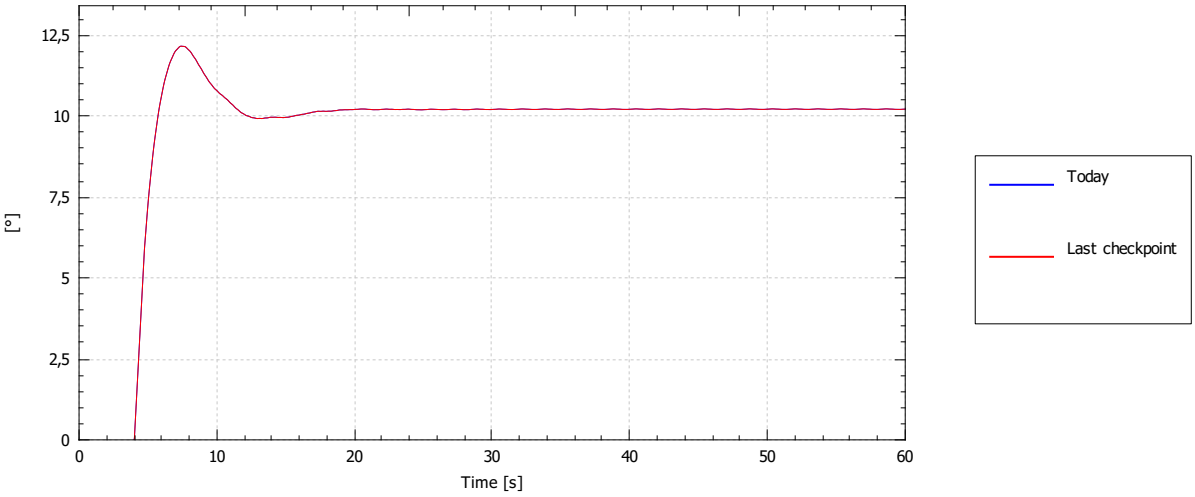

RPM



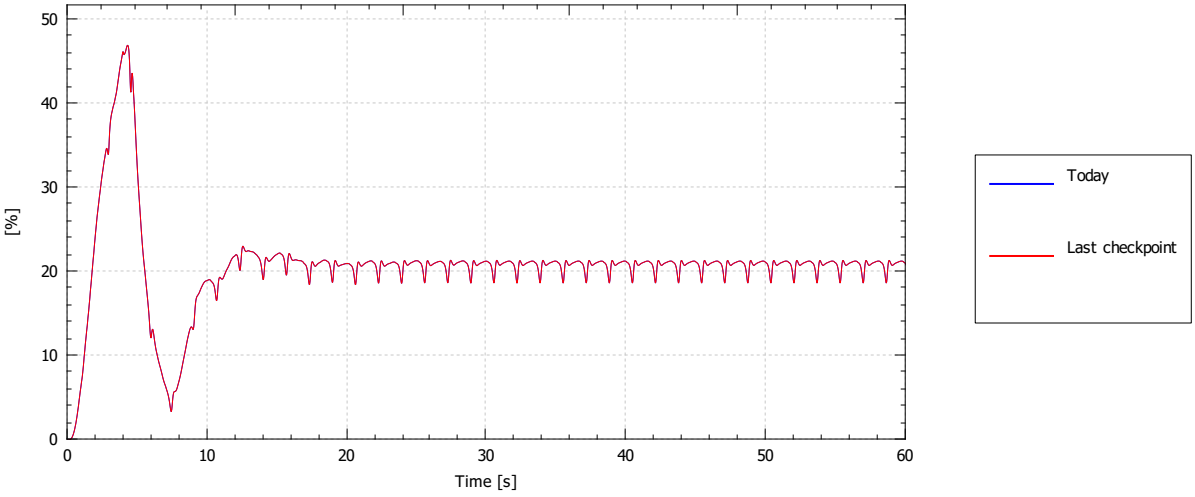

TSR



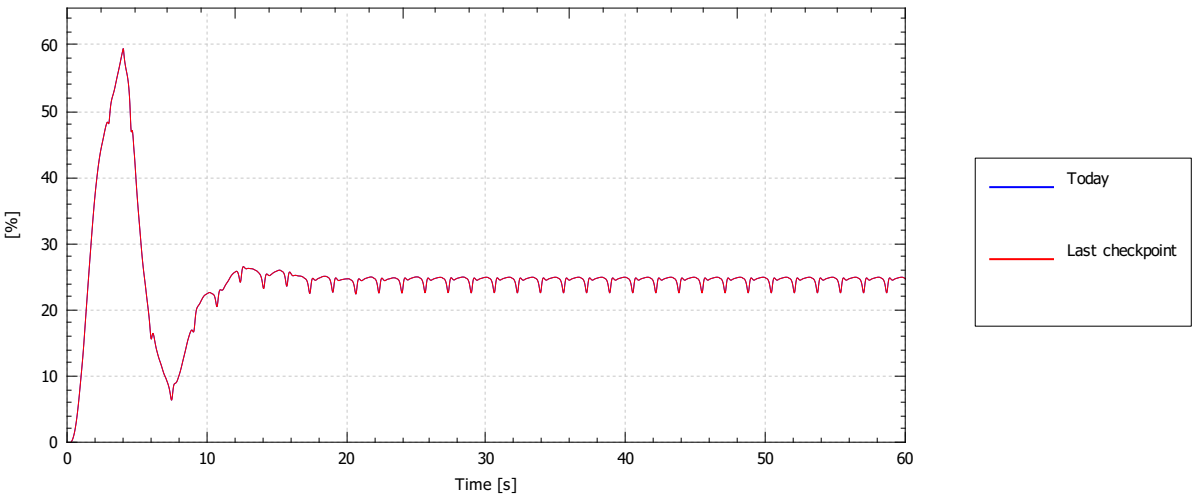
Representative demanded pitch angle



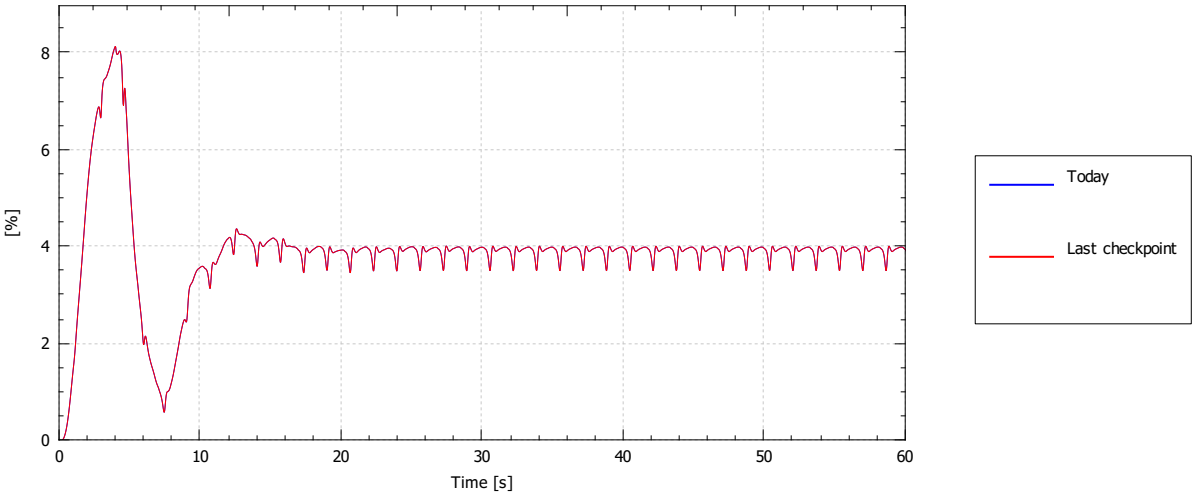

Power coef. (CP)



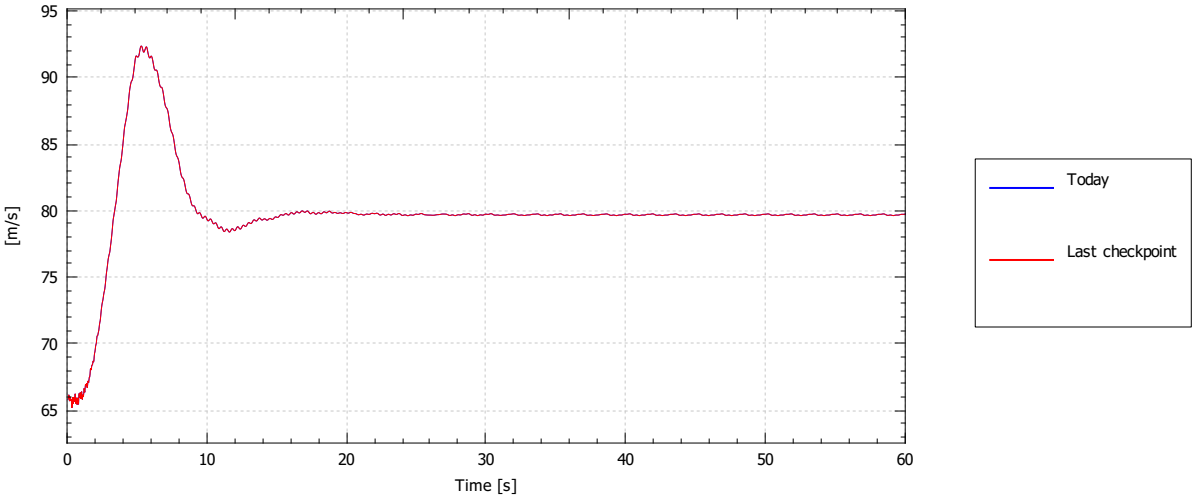

Thrust coef. (CT)



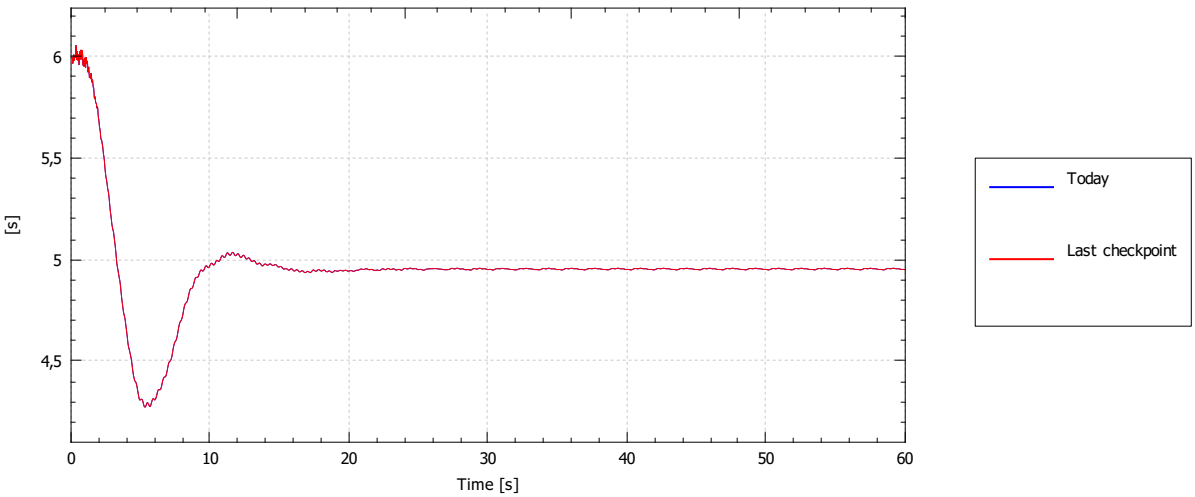
Torque coef. (CQ)



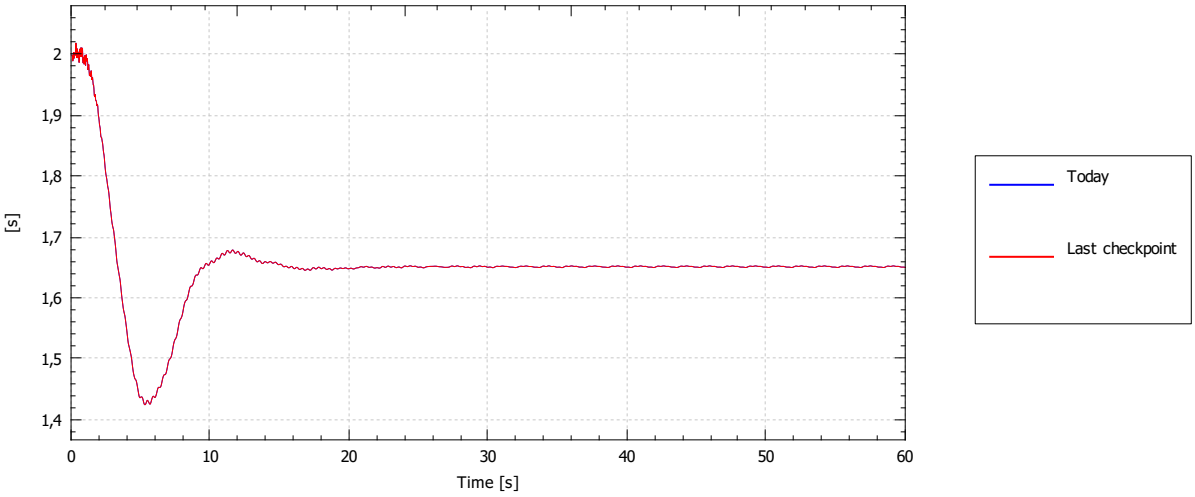

Tip speed



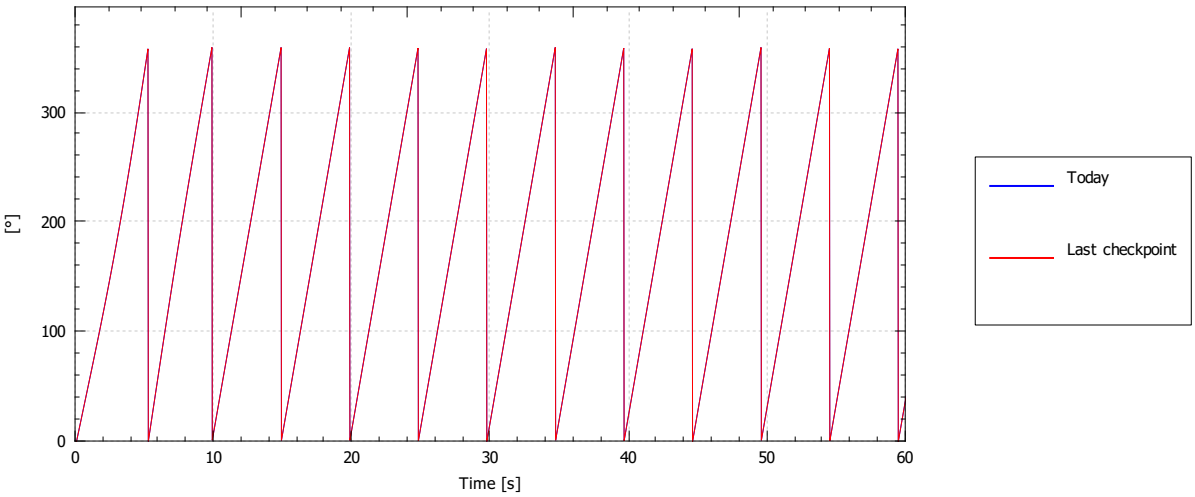

1P (one revolution)



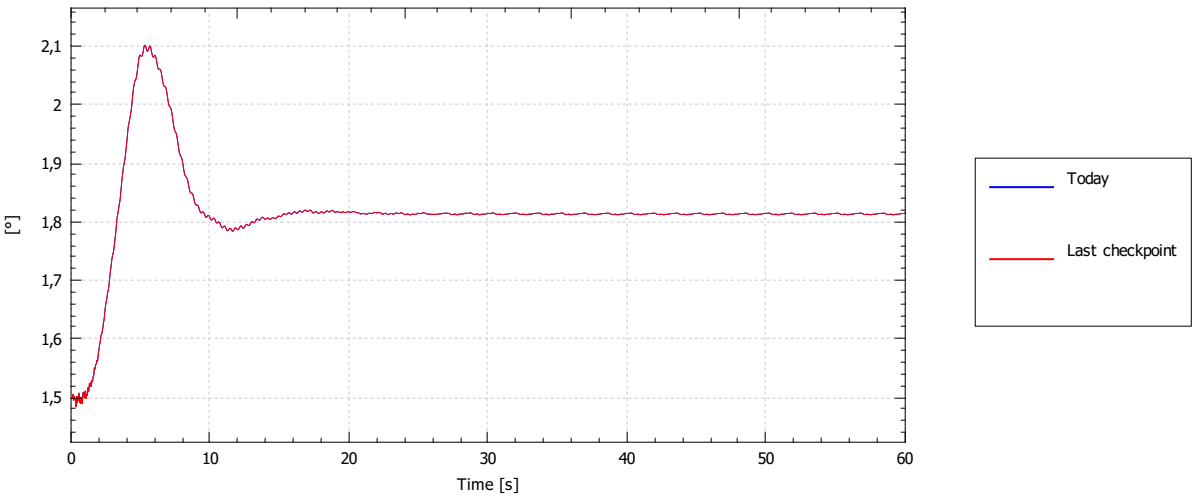
nP (blade passing)



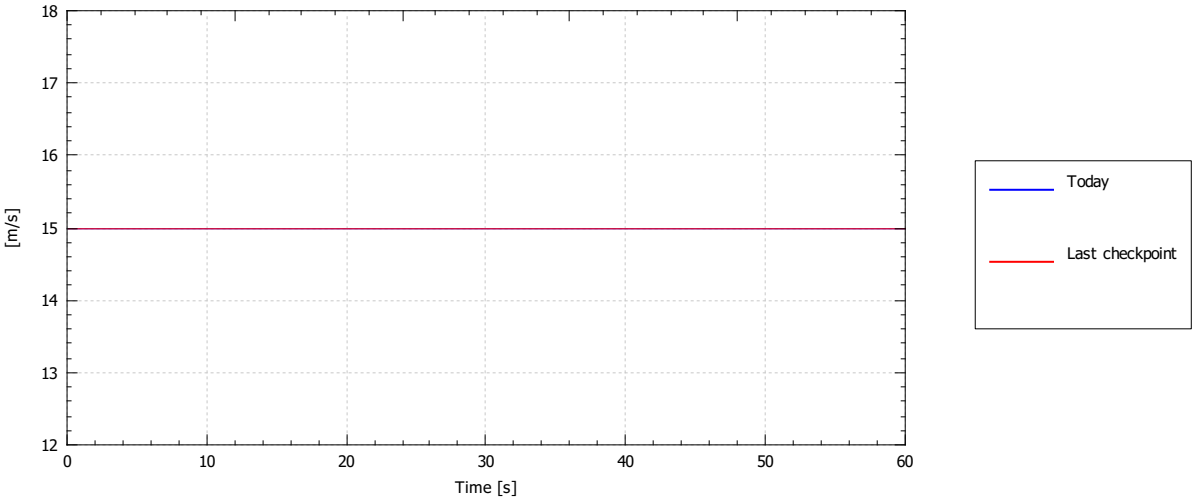

Azimuth angle



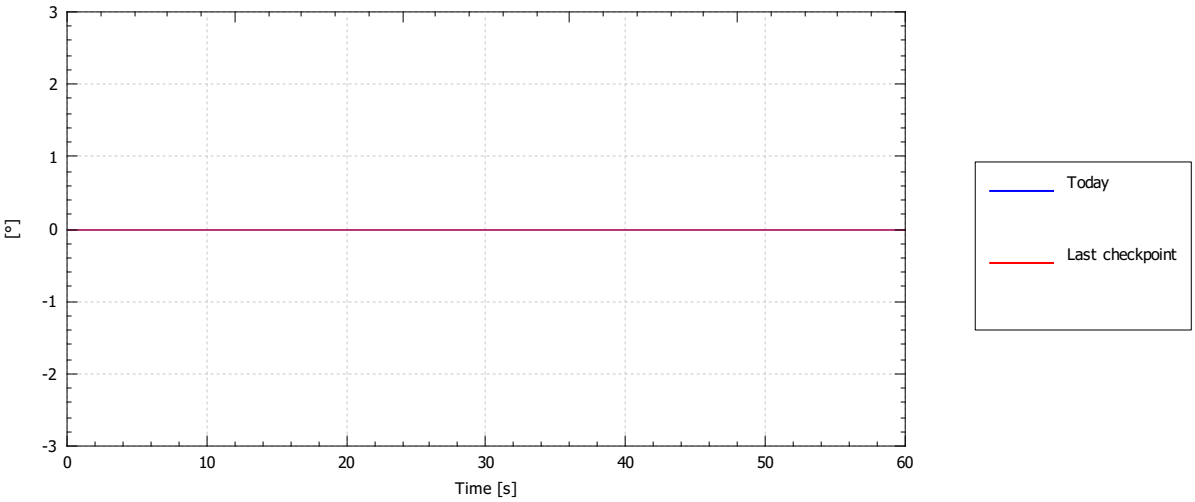

Rotation per timestep



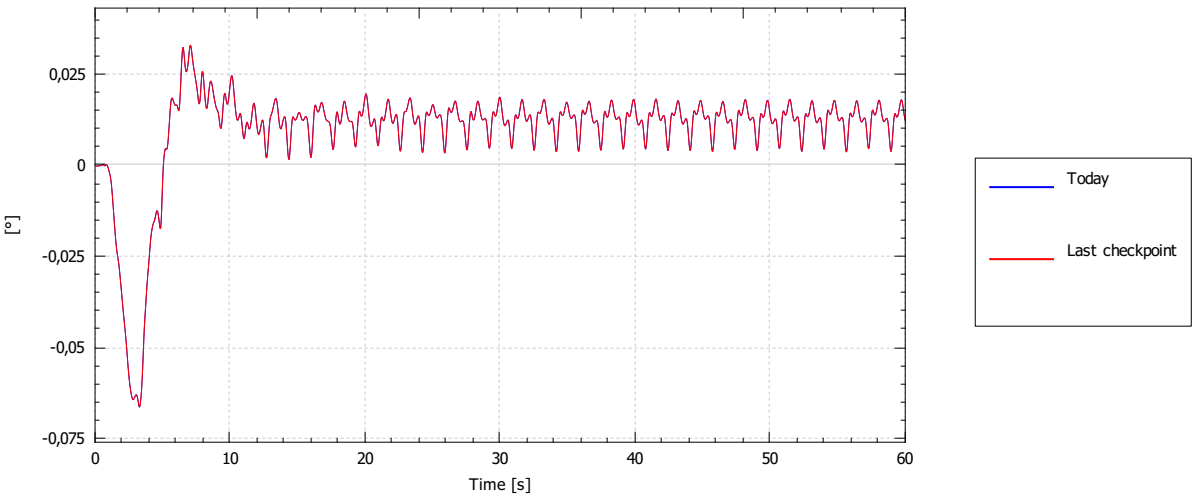
Wind speed at hub, magnitude



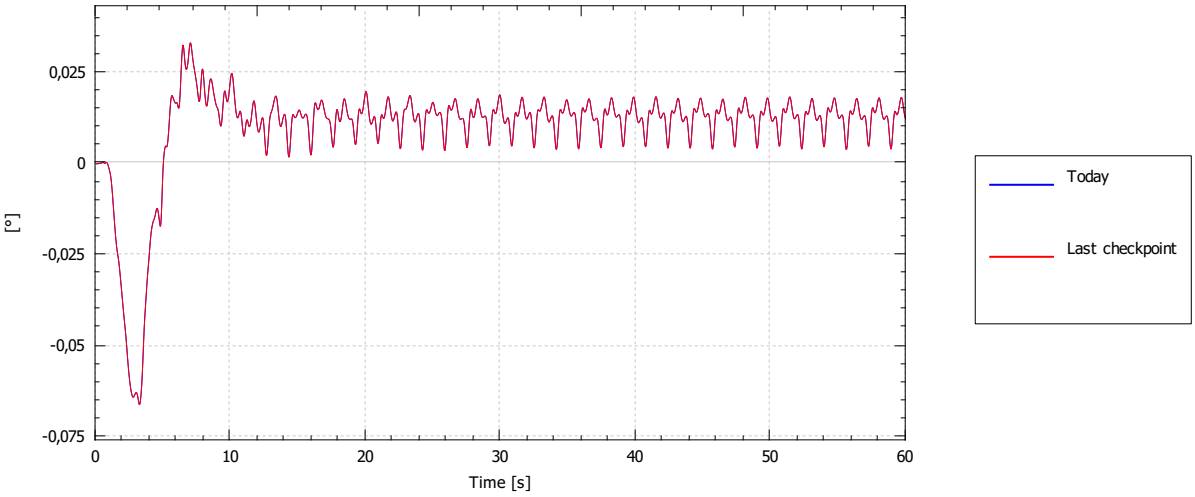

Wind angle at hub



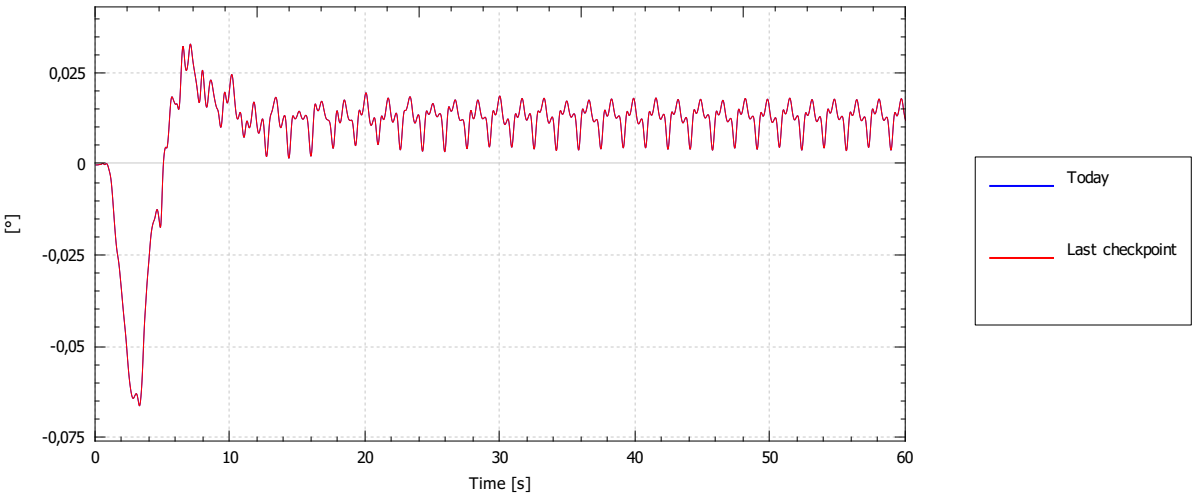

Yaw angle relative to forward



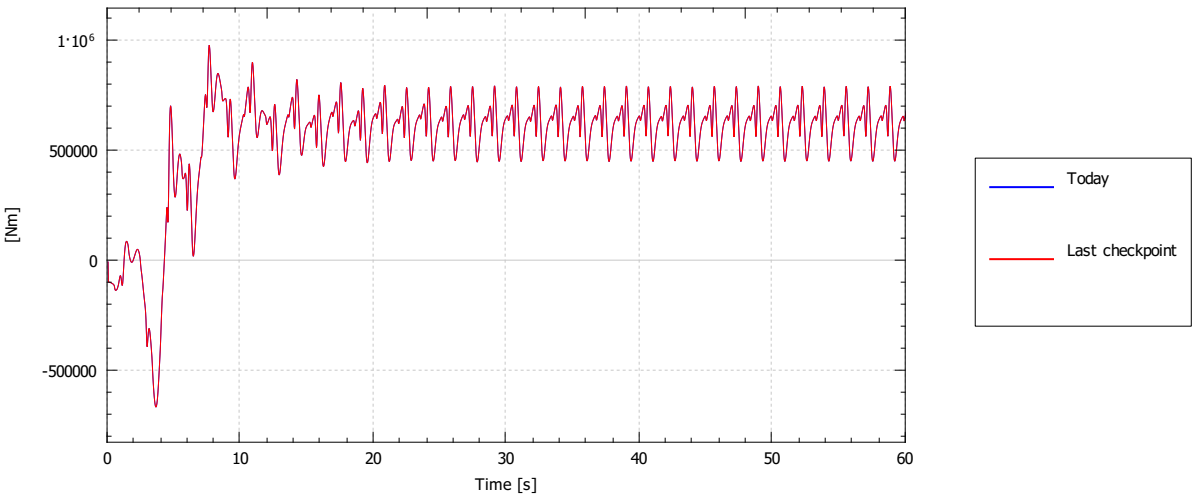
Yaw angle to reference direction




Yaw error

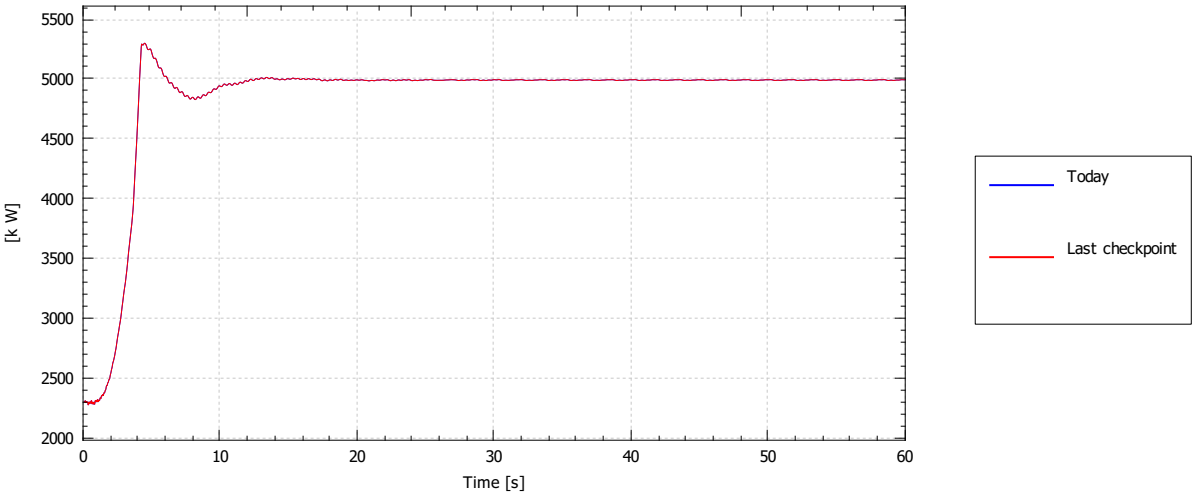



Torque about yaw axis

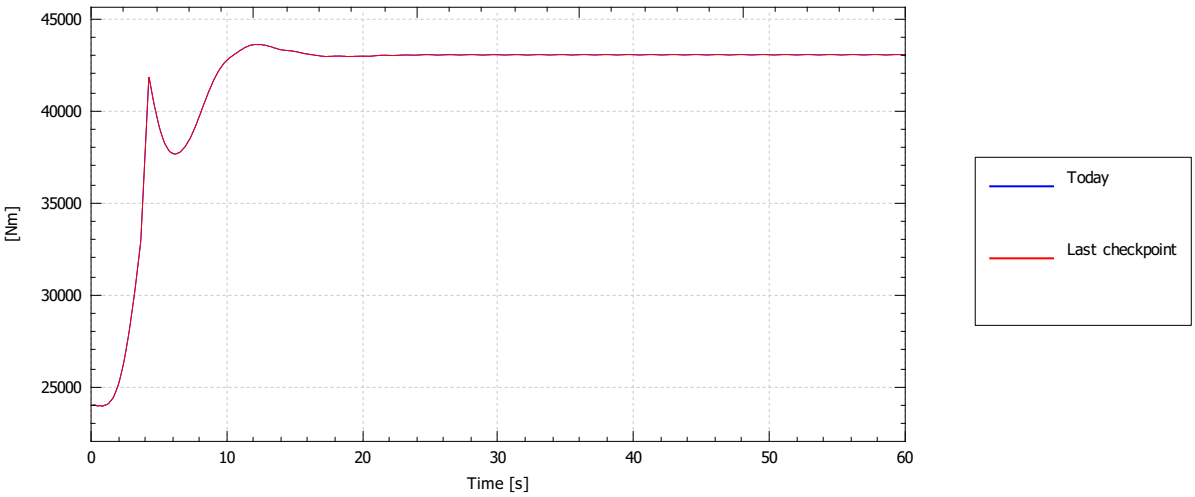


**Generator**

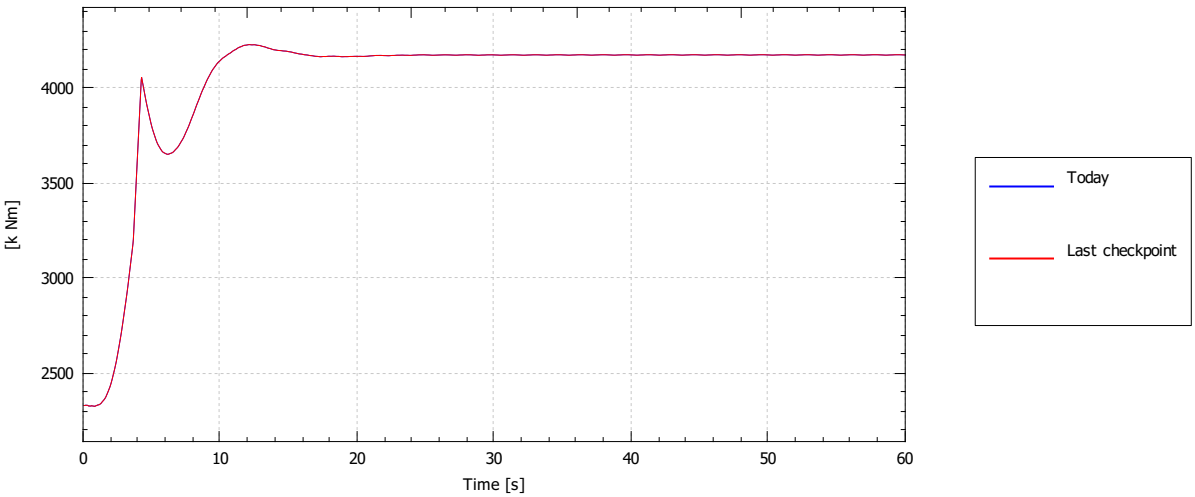
Power (electrical)



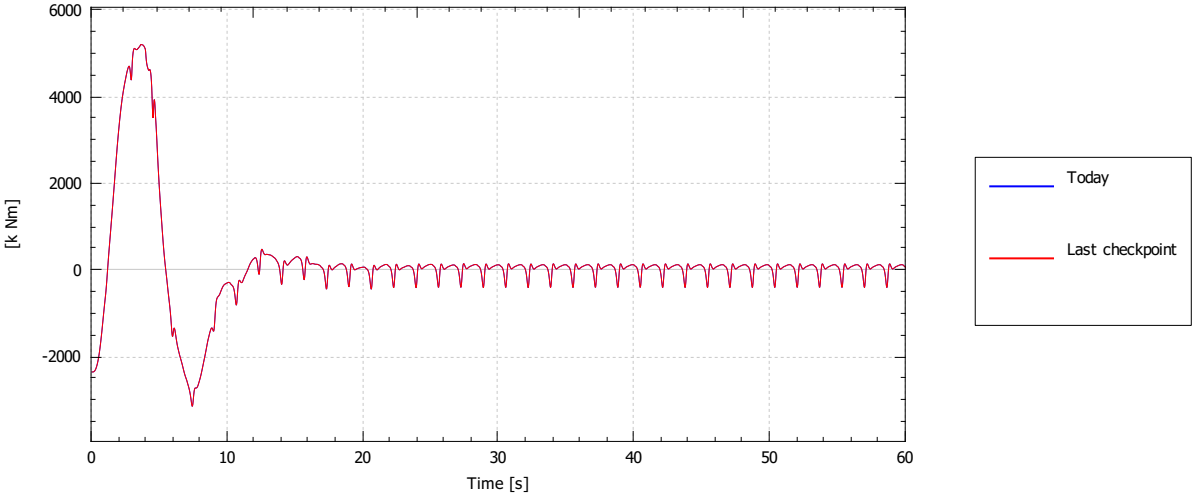

Torque



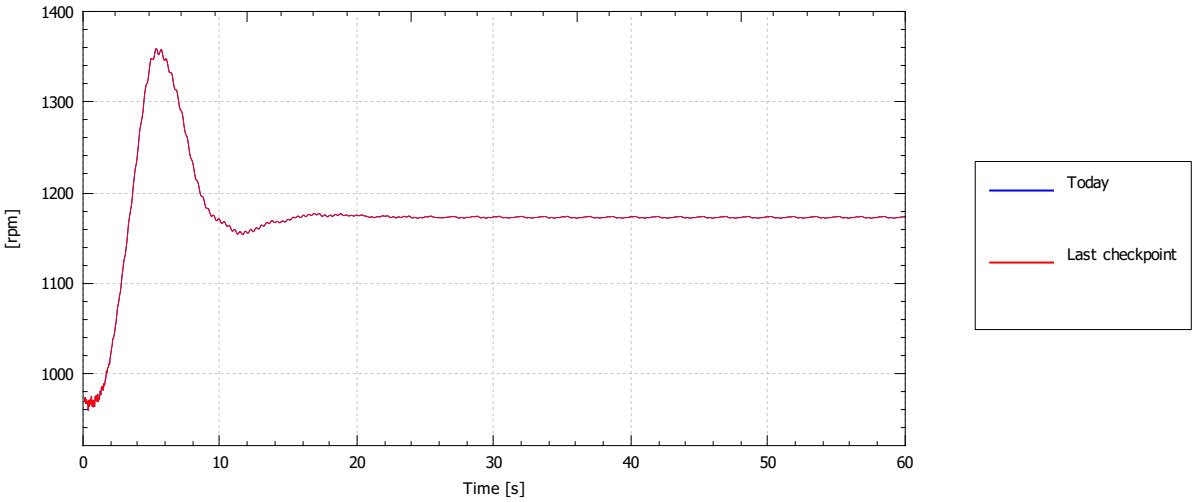

Torque on main shaft



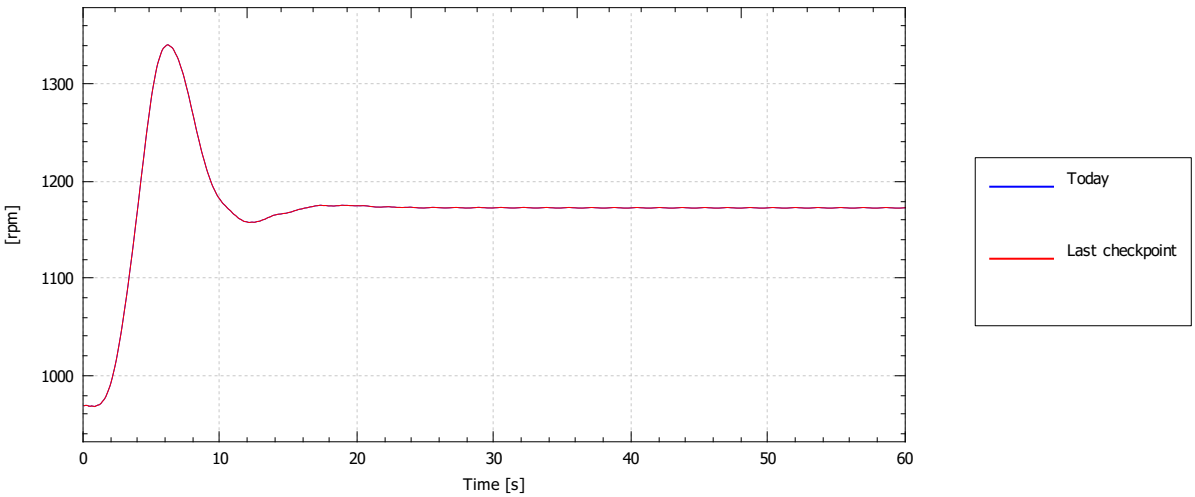
Torque diff. on main shaft

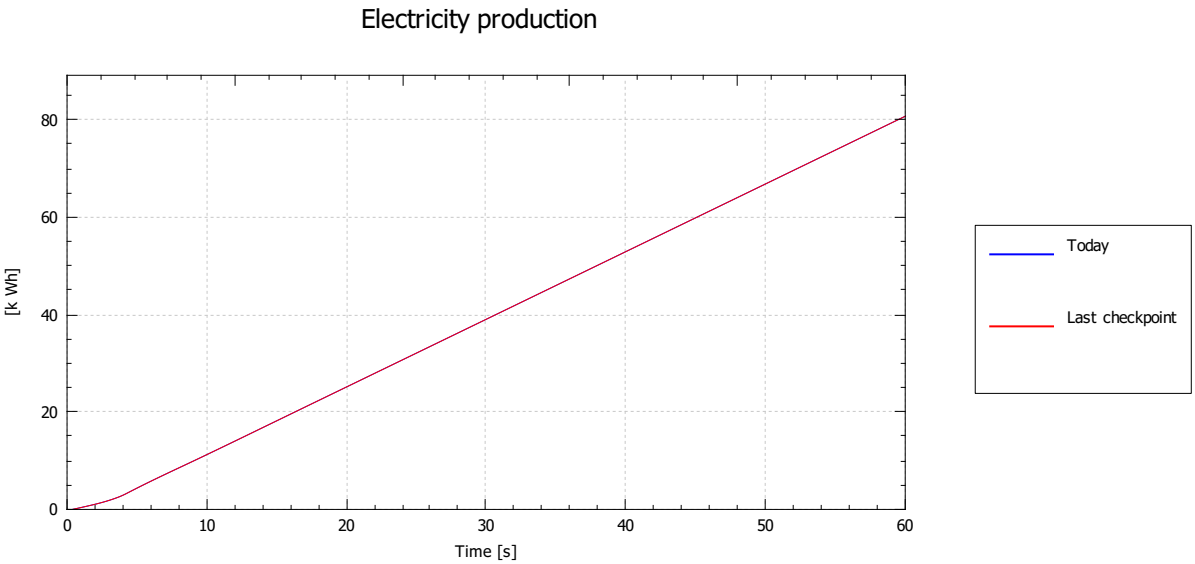


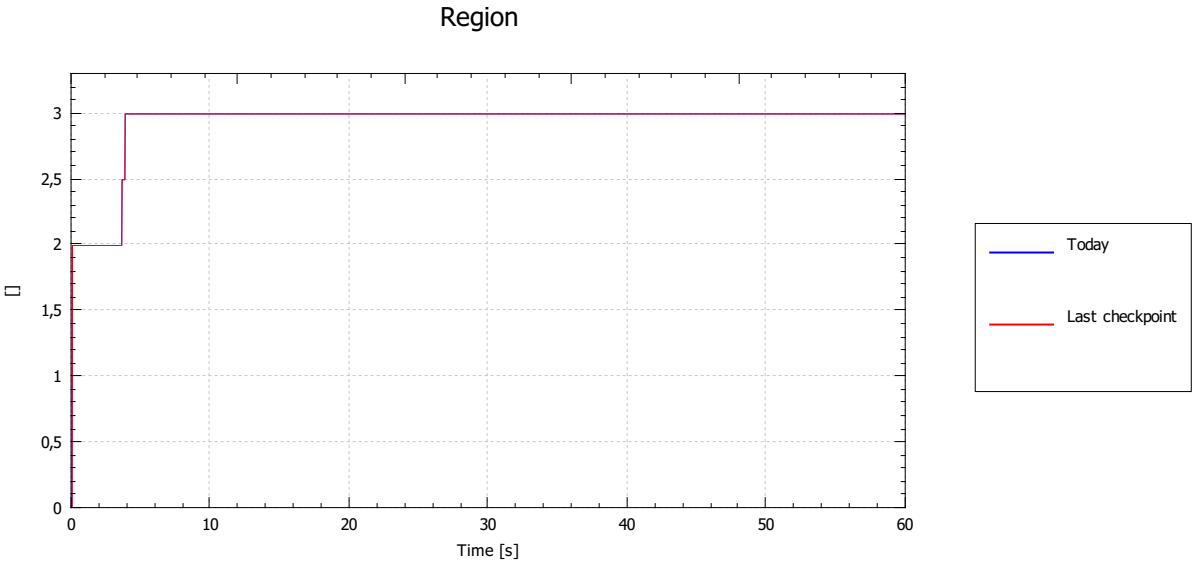

RPM




Filtered RPM

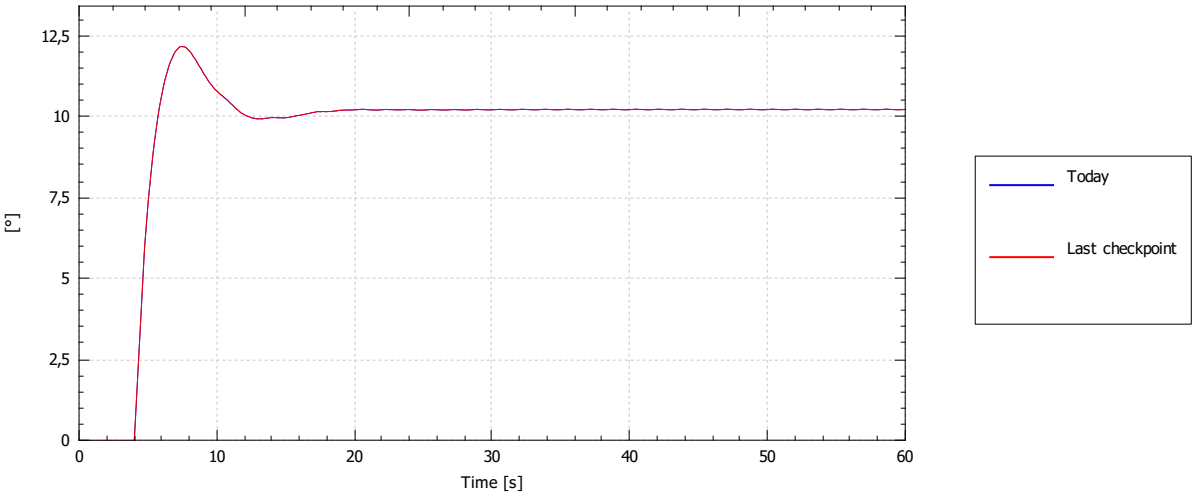




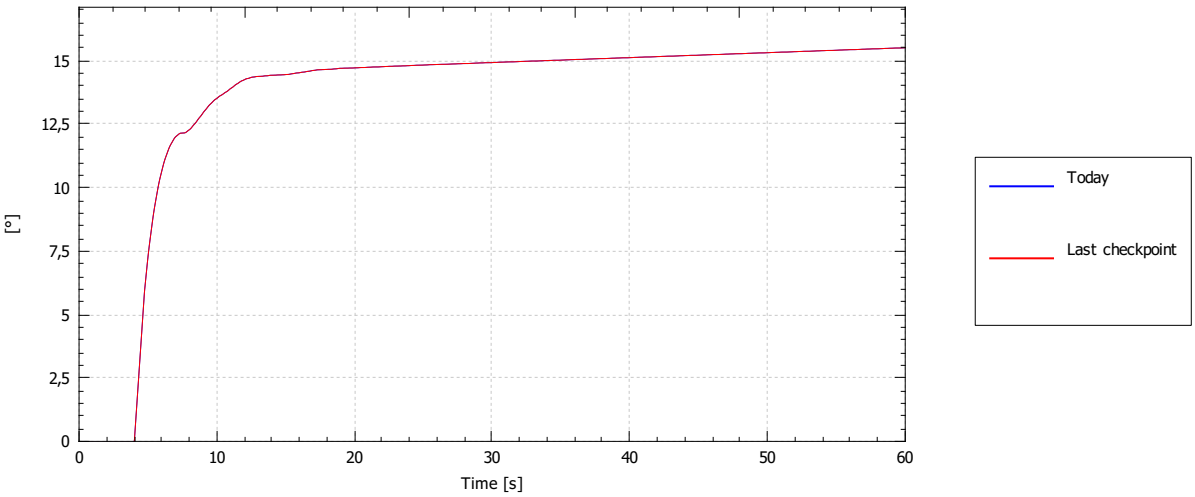




**Demanded pitch controller**

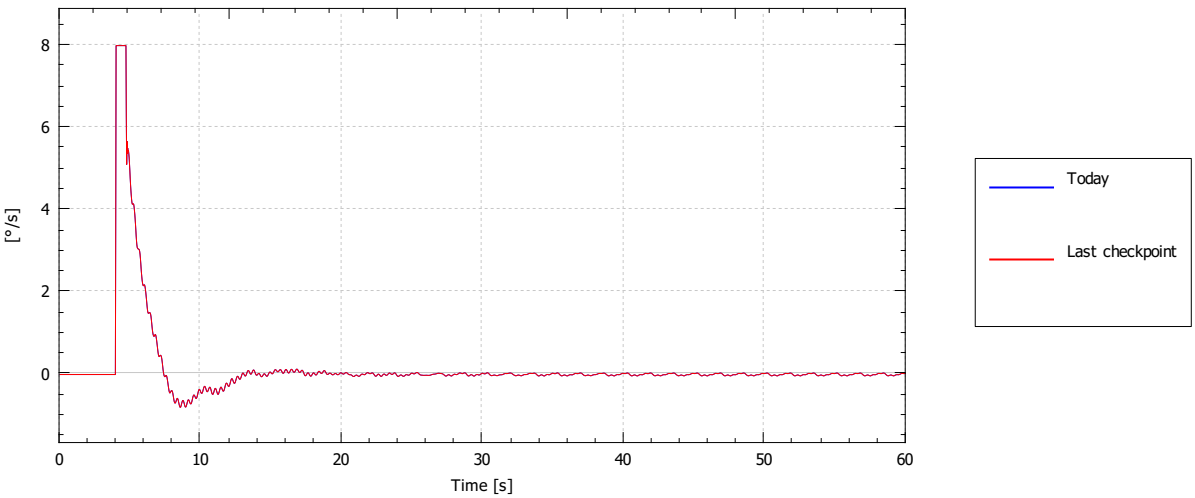
Demanded collective pitch angle



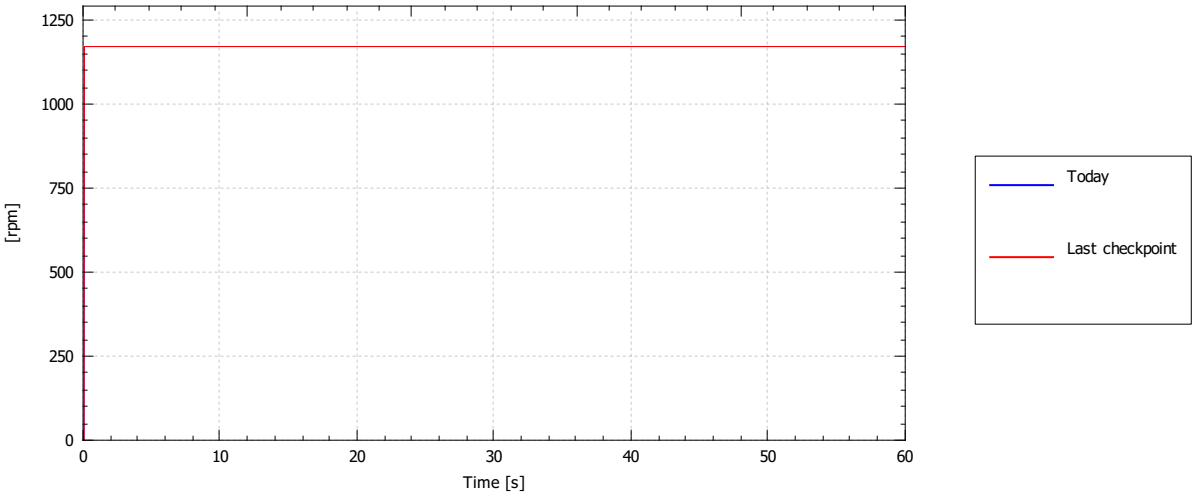

Cumulative demanded collective pitch angle



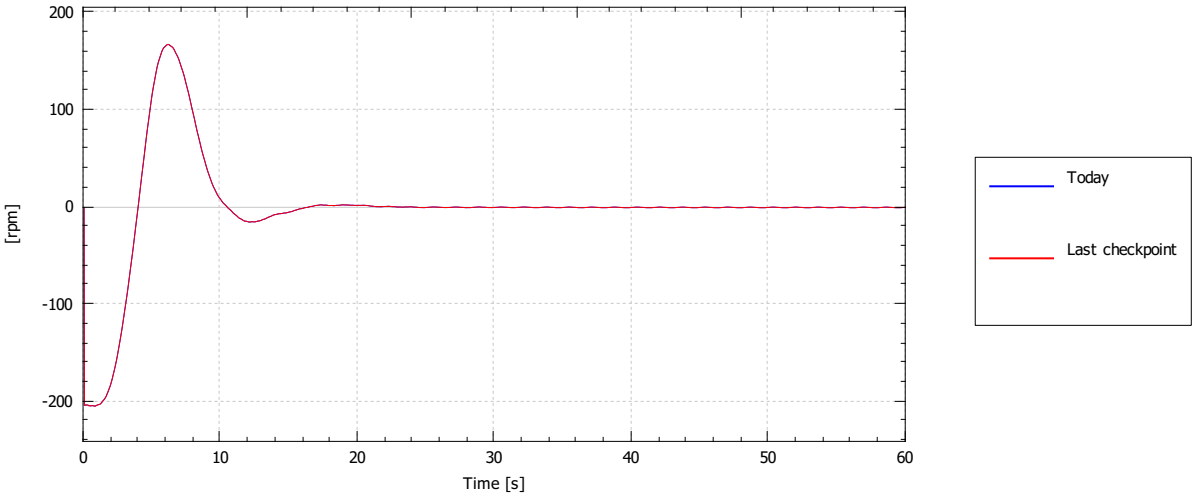

Demanded collective pitch angle rate



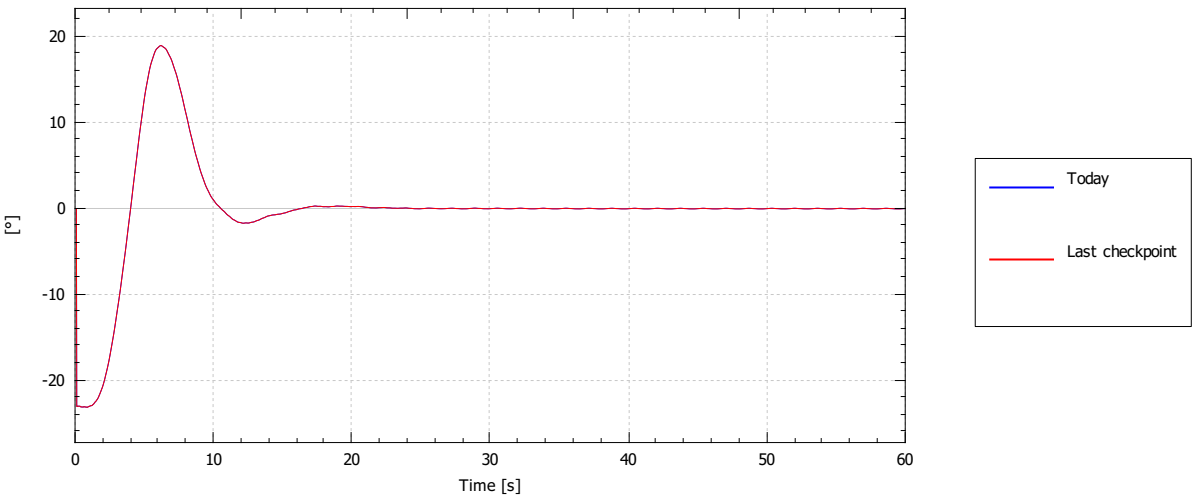
Set point



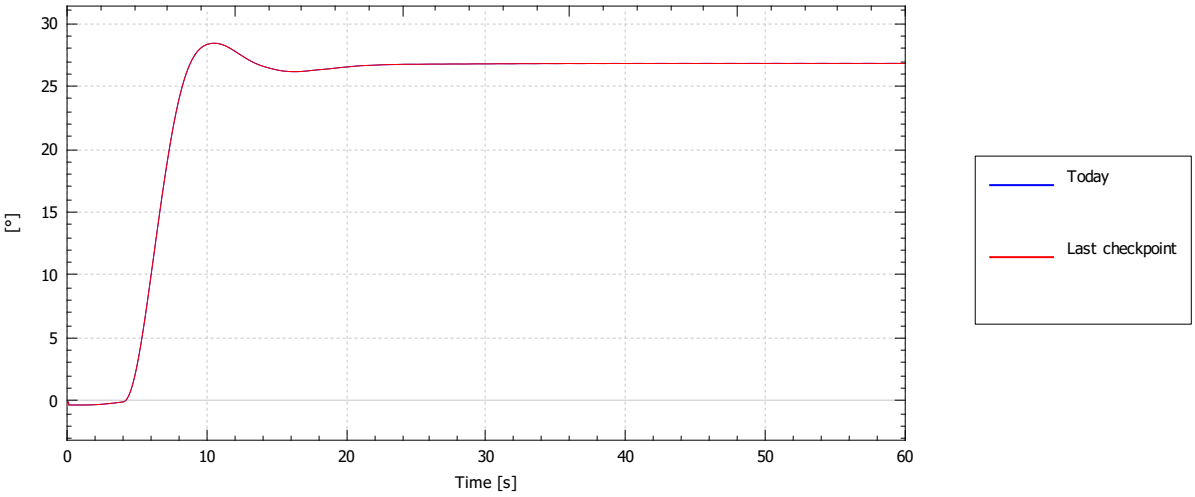

RPM error



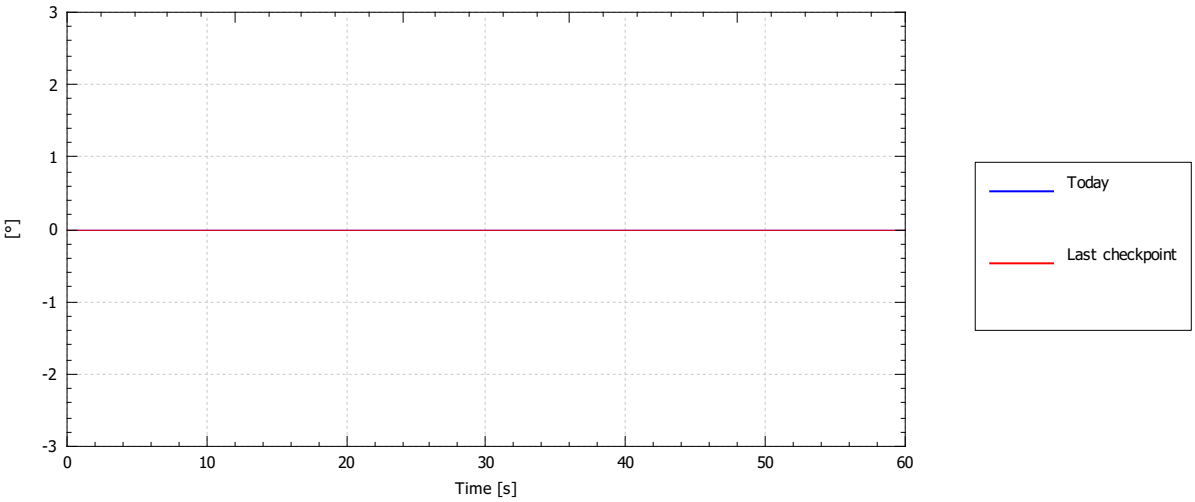

P term



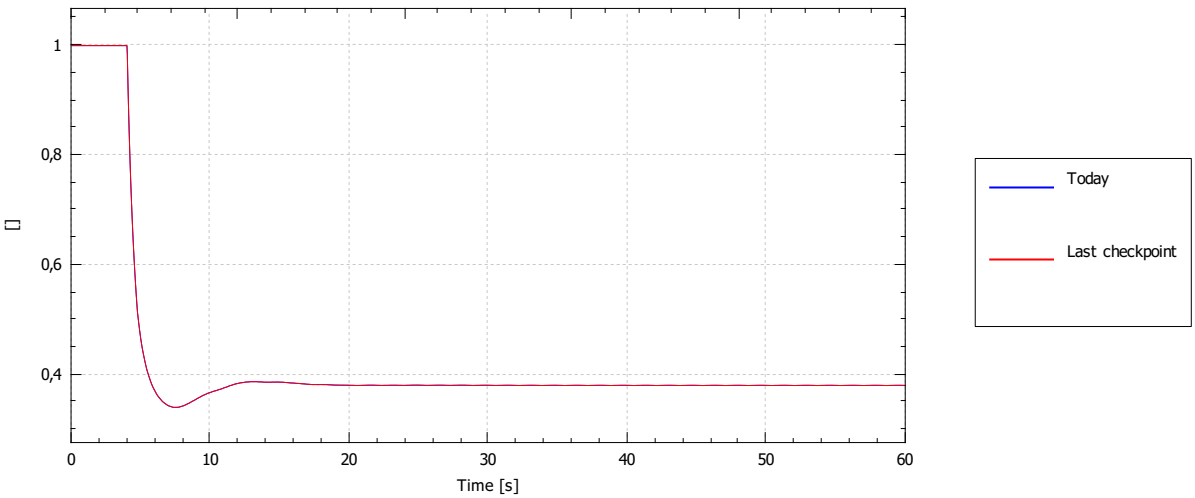
I term




D term

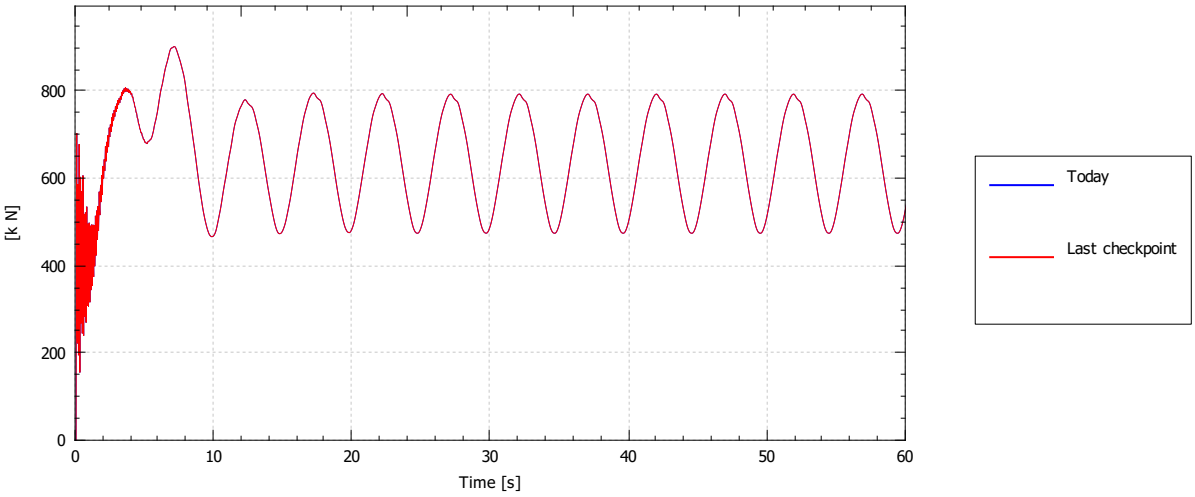



Gain scheduling factor

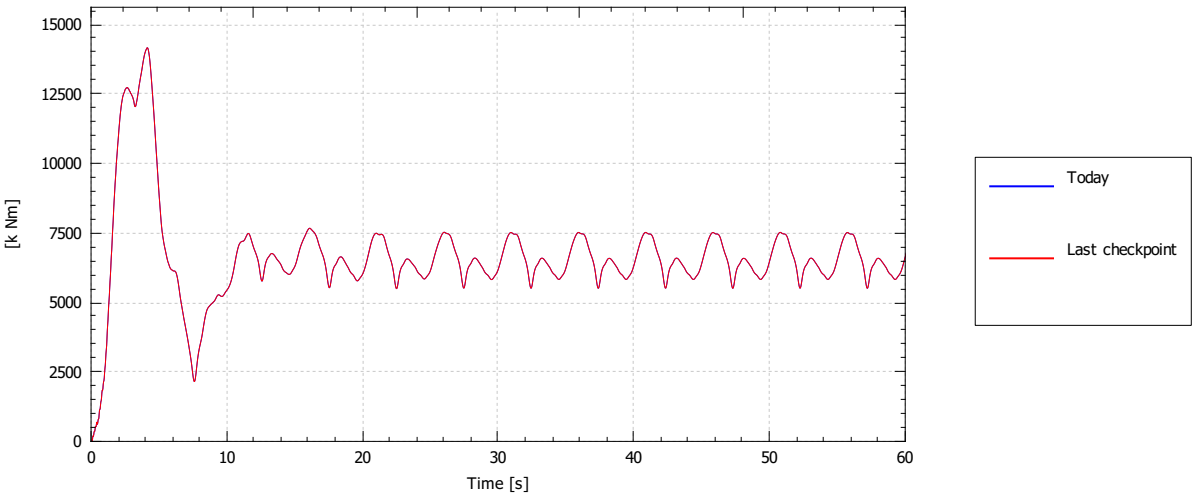


**Blade [Time] [Blade 1]**

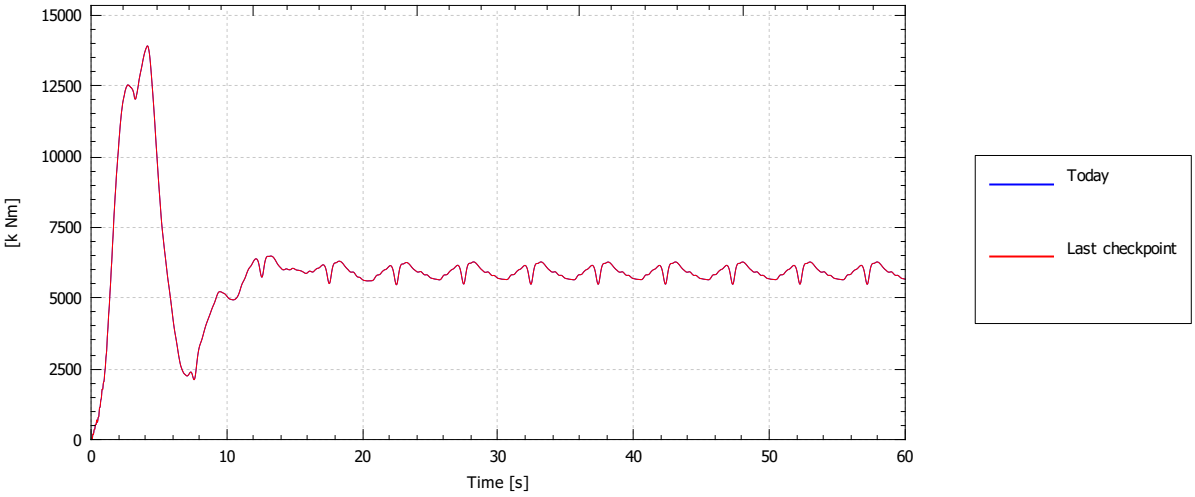
Root force (magnitude)



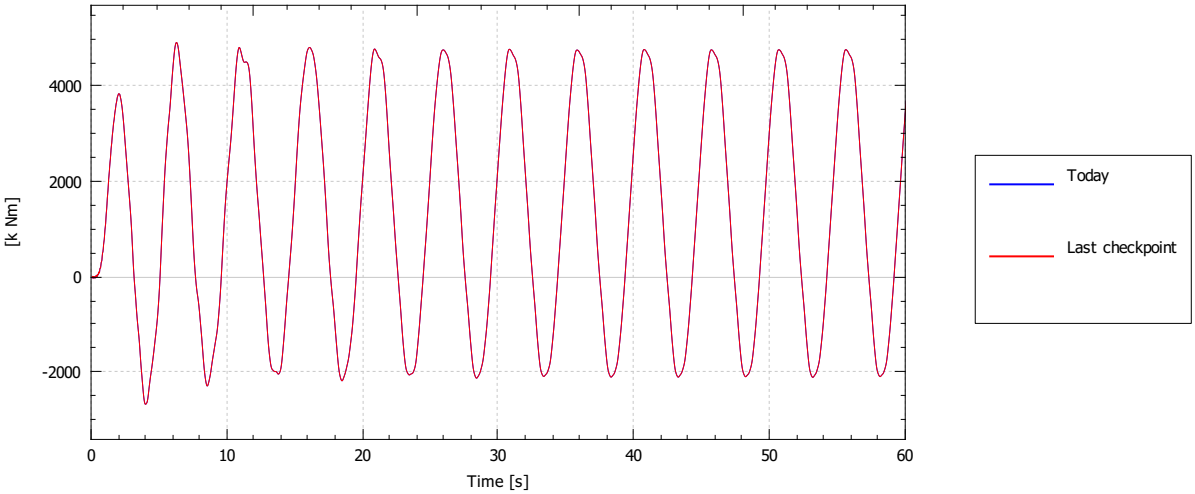

Root moment (magnitude)



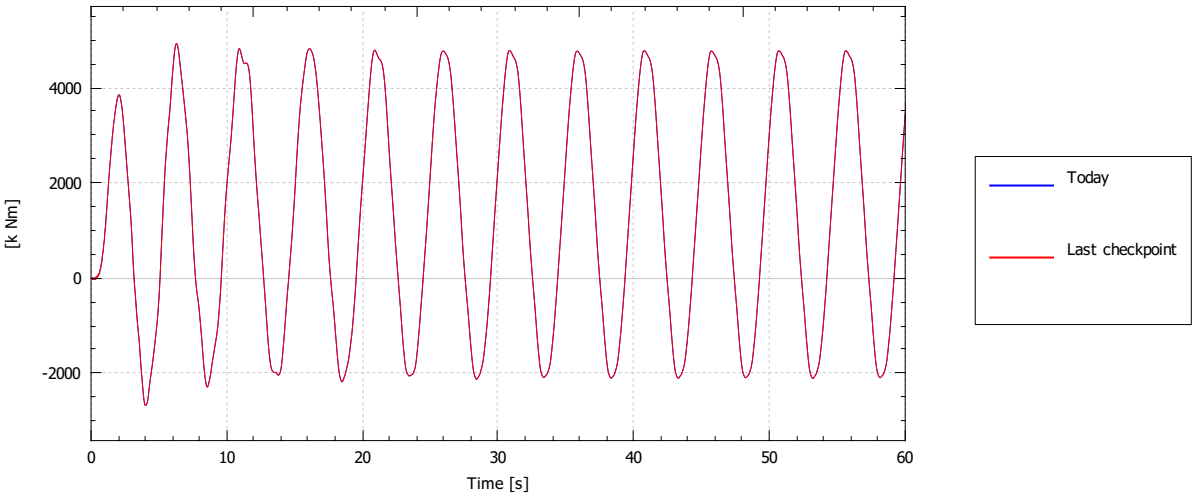

Root moment (out-of-plane)



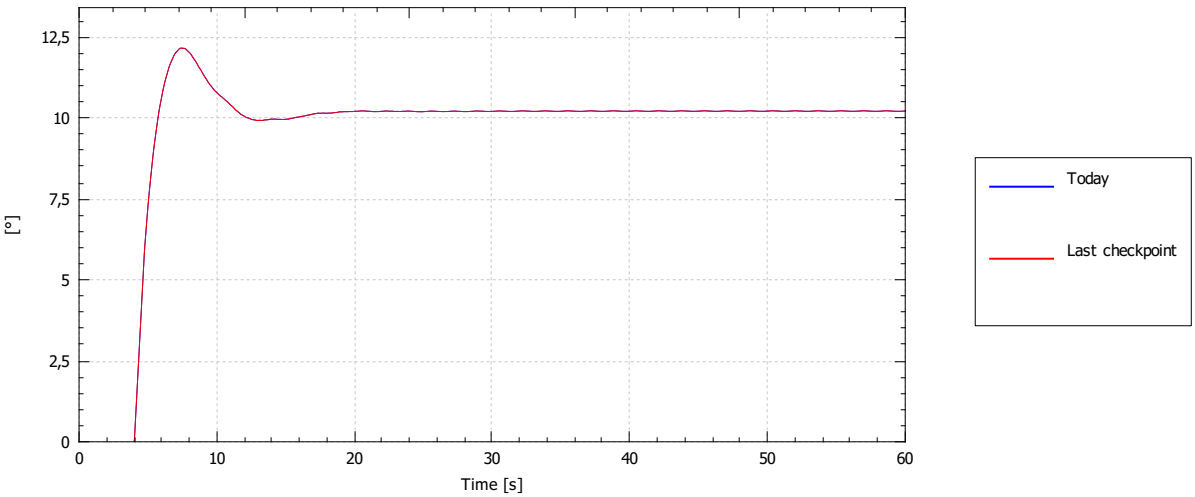
Root moment (in-plane)



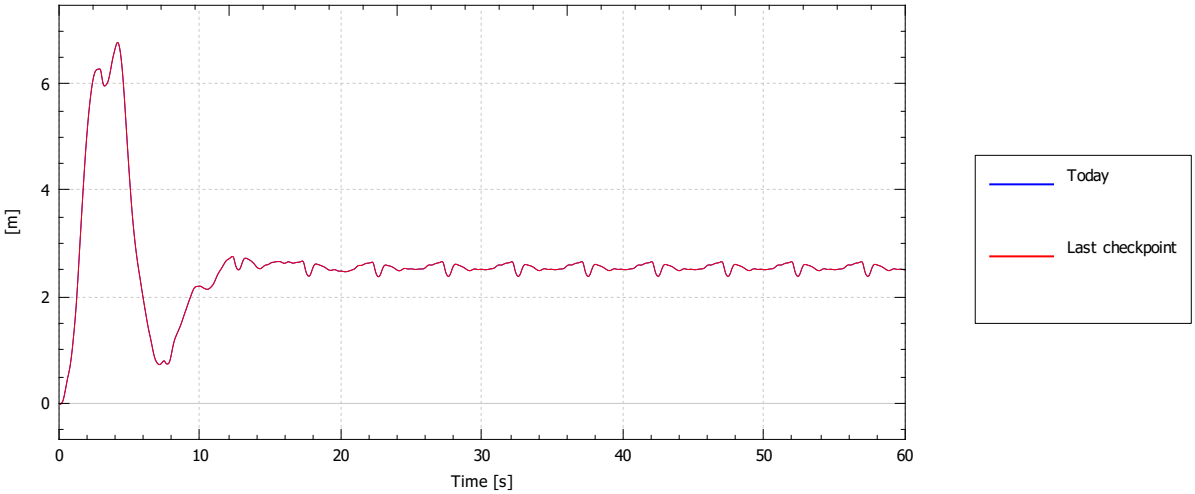

Root moment about shaft



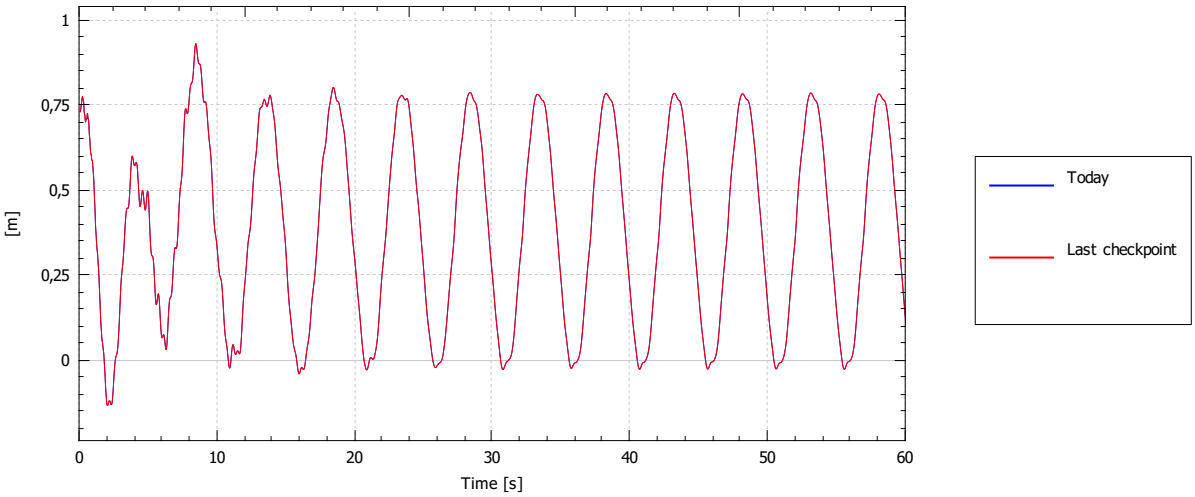

Pitch angle



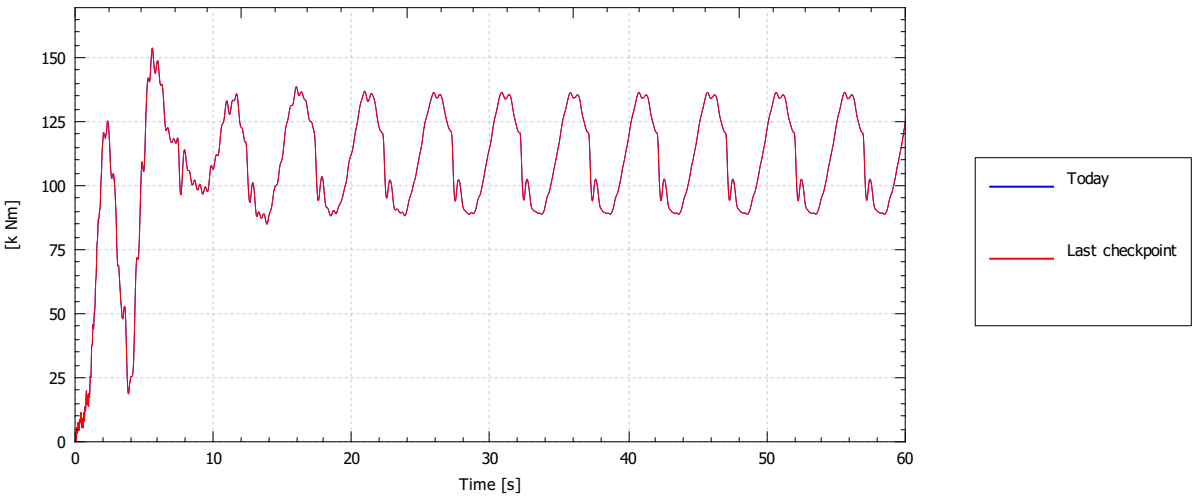
Tip deflection (out-of-plane)




Tip deflection (in-plane)

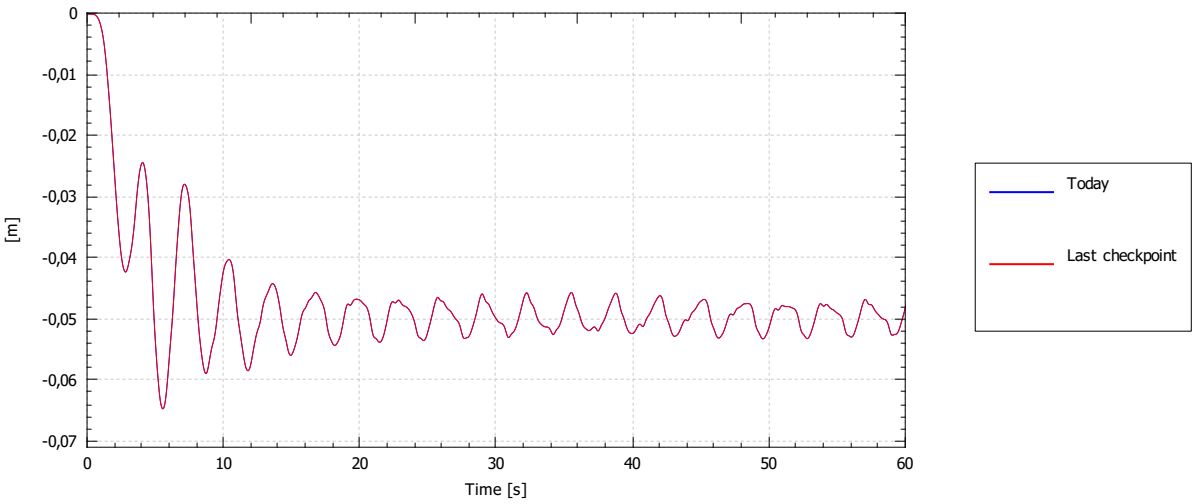



Root torque

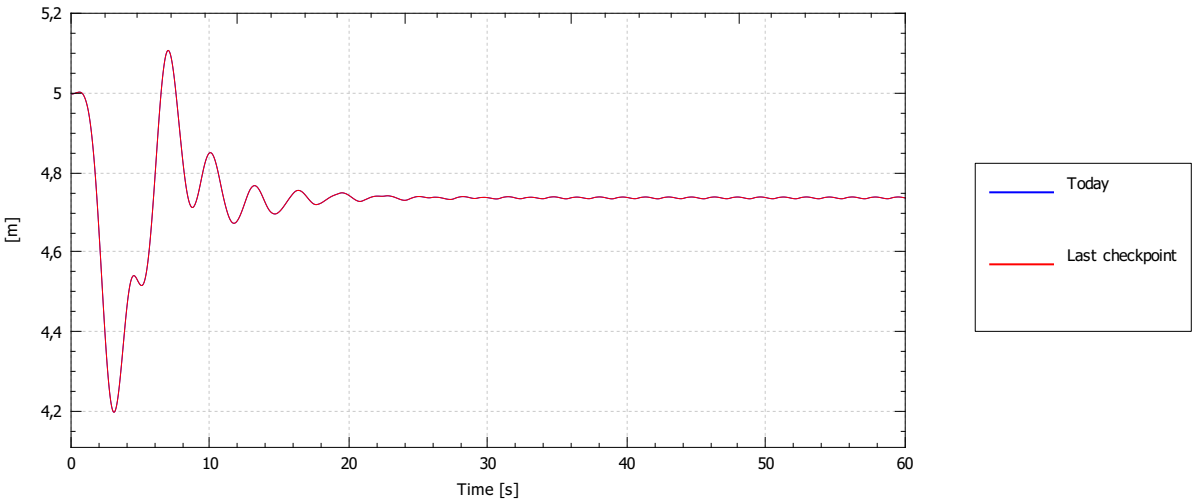


**Node [Node Hub | Hub]**

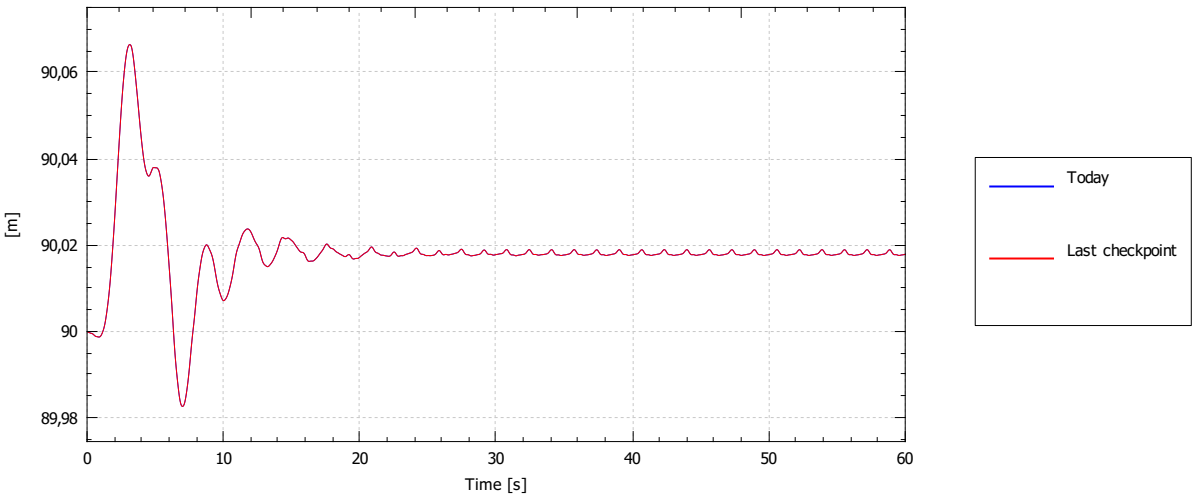
Position (x)

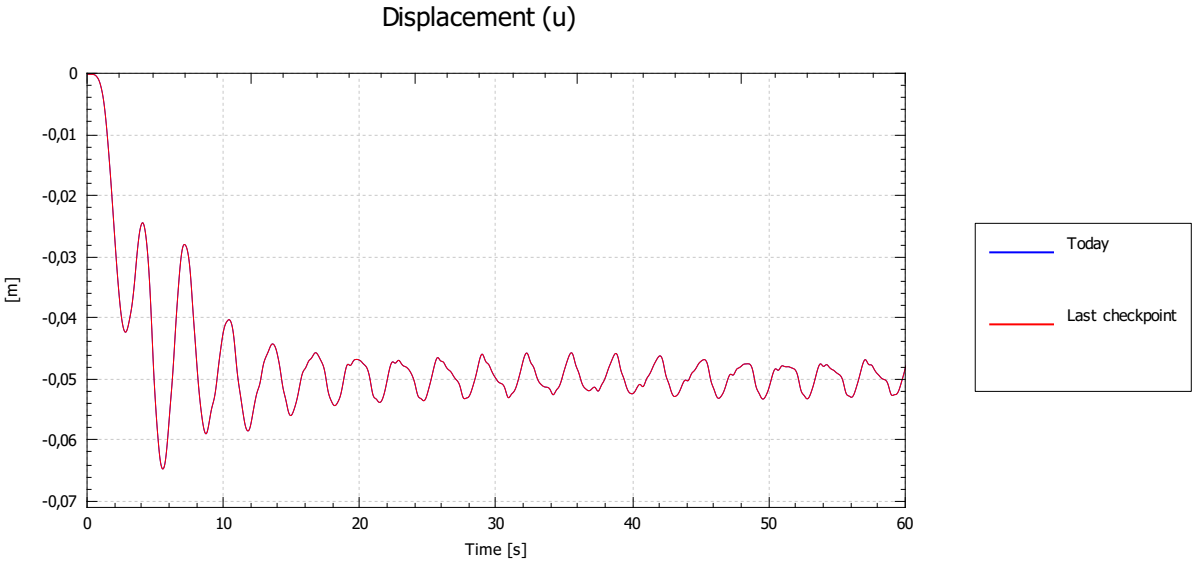


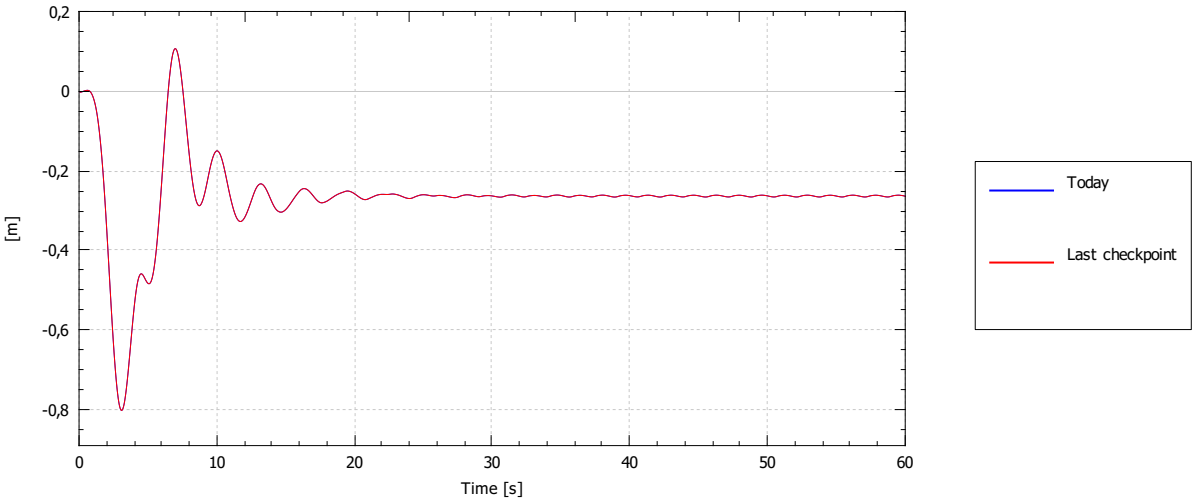

Position (y)

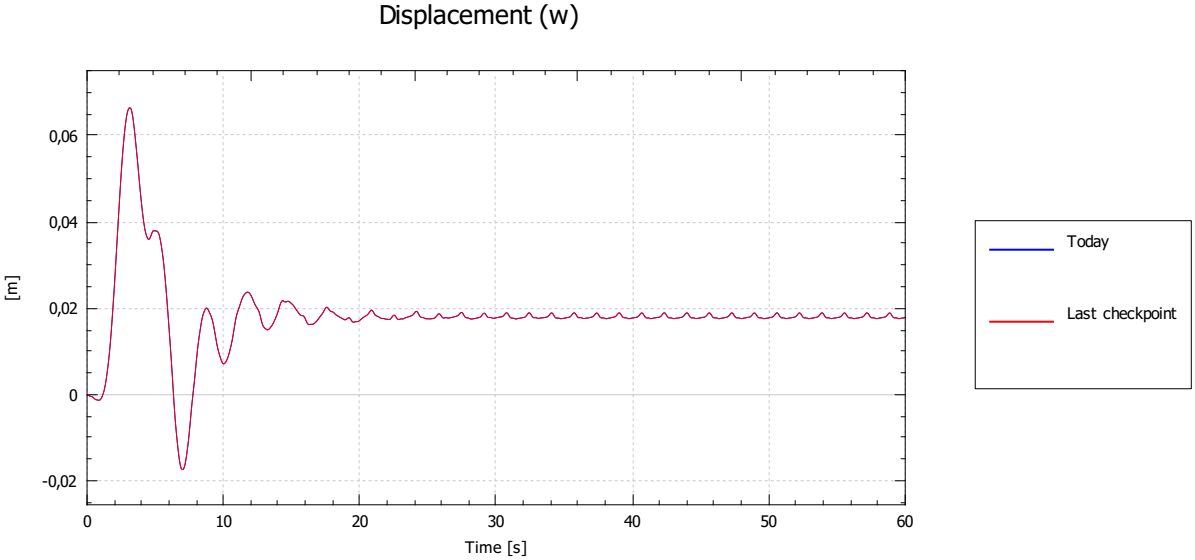



Position (z)

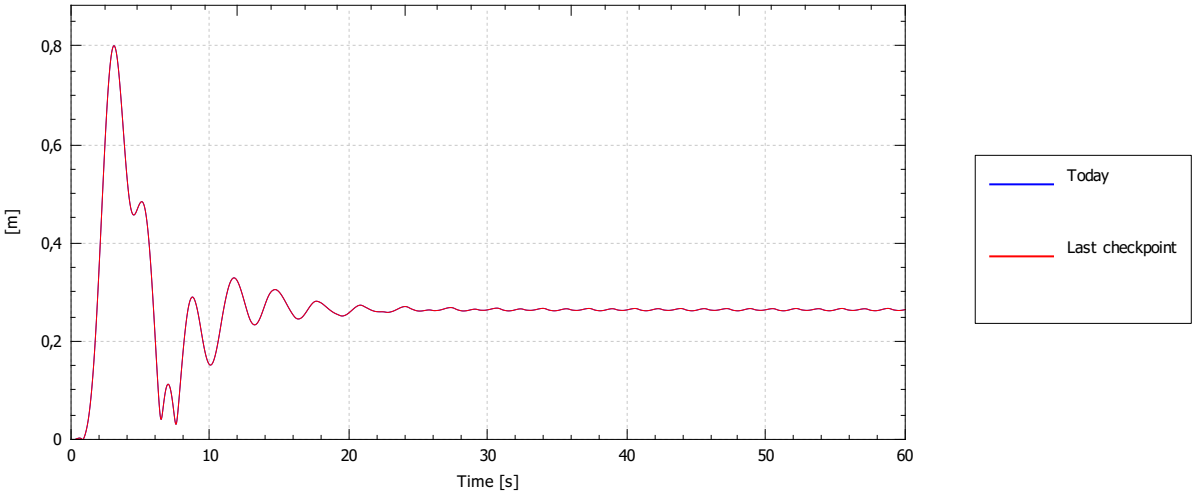



Displacement (u)
0
-0,01
-0,02
-0,03
-0,04
-0,05
-0,06
-0,07
[m]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint

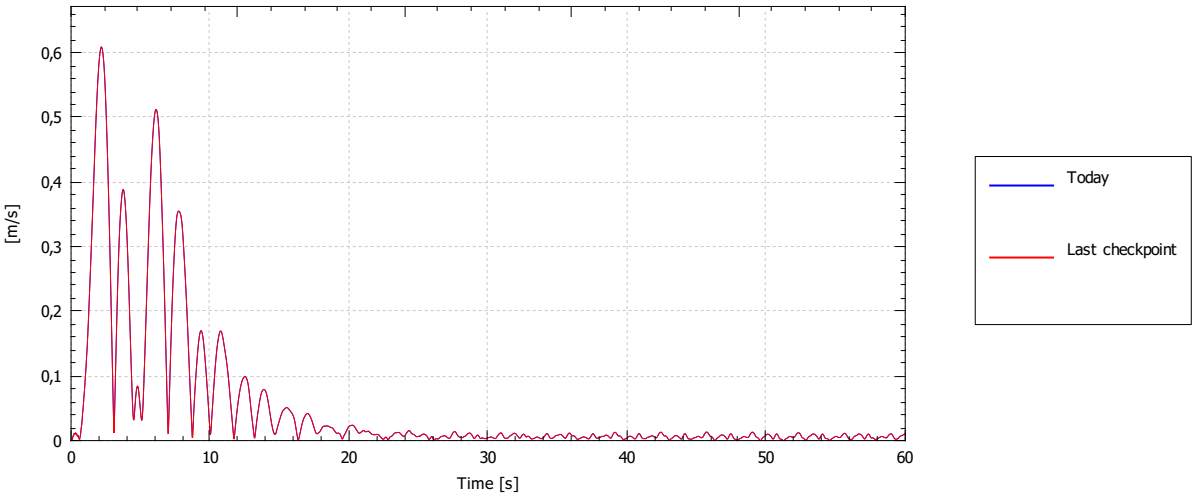

Displacement (v)
0,2
0
-0,2
-0,4
-0,6
-0,8
[m]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint


Displacement (w)
0,06
0,04
0,02
0
-0,02
[m]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint

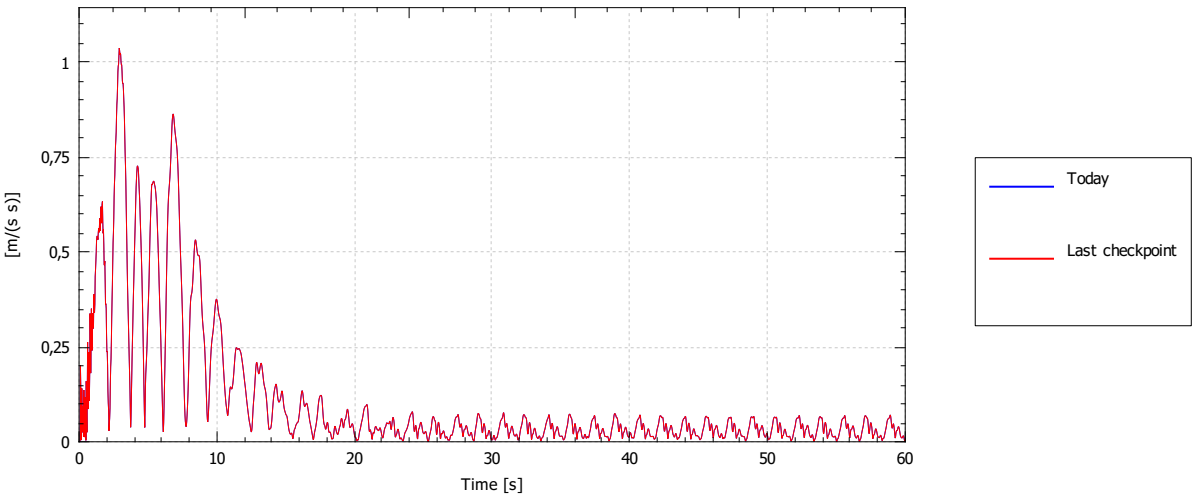
Displacement magnitude



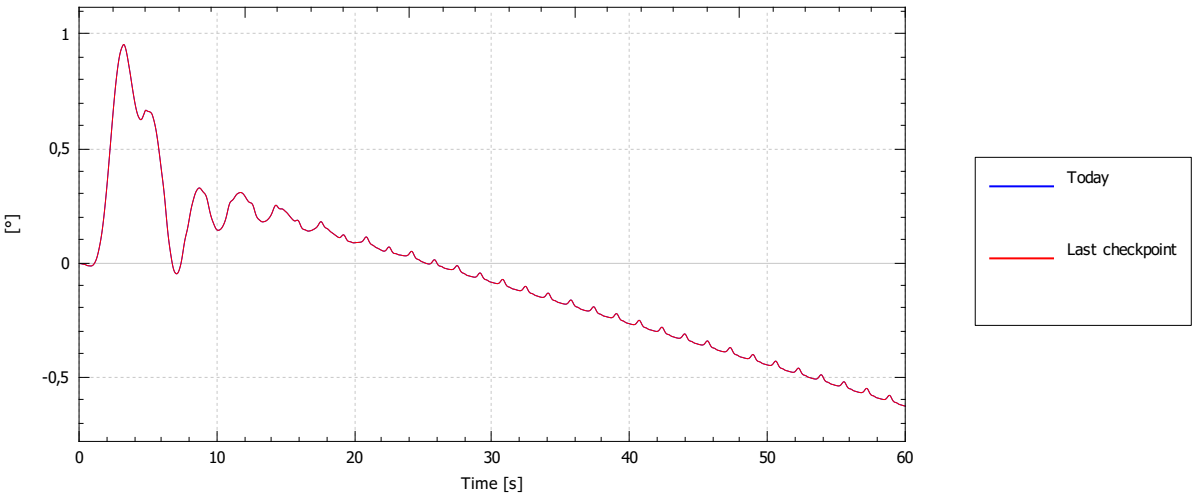

Speed



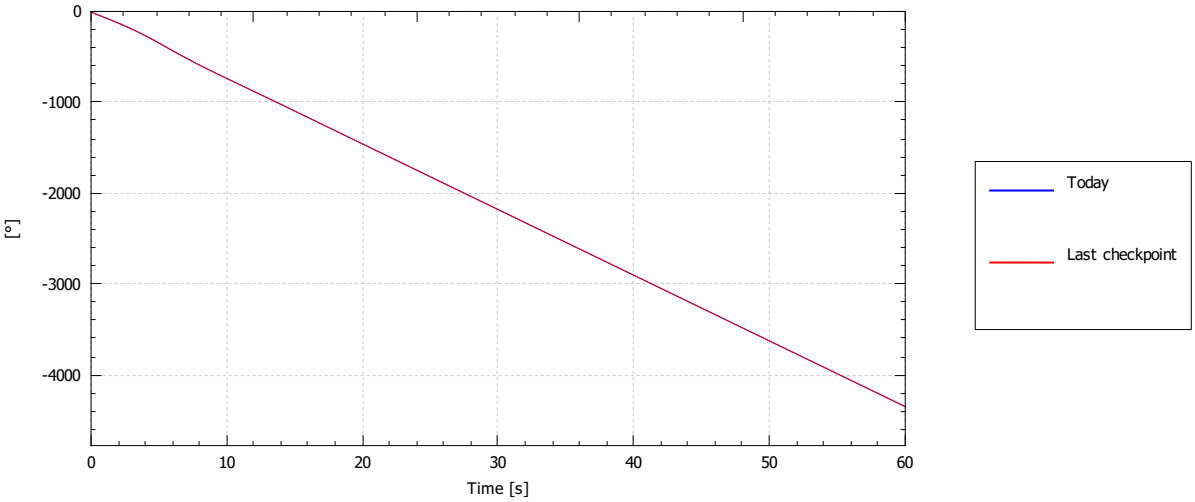

Acceleration, magnitude



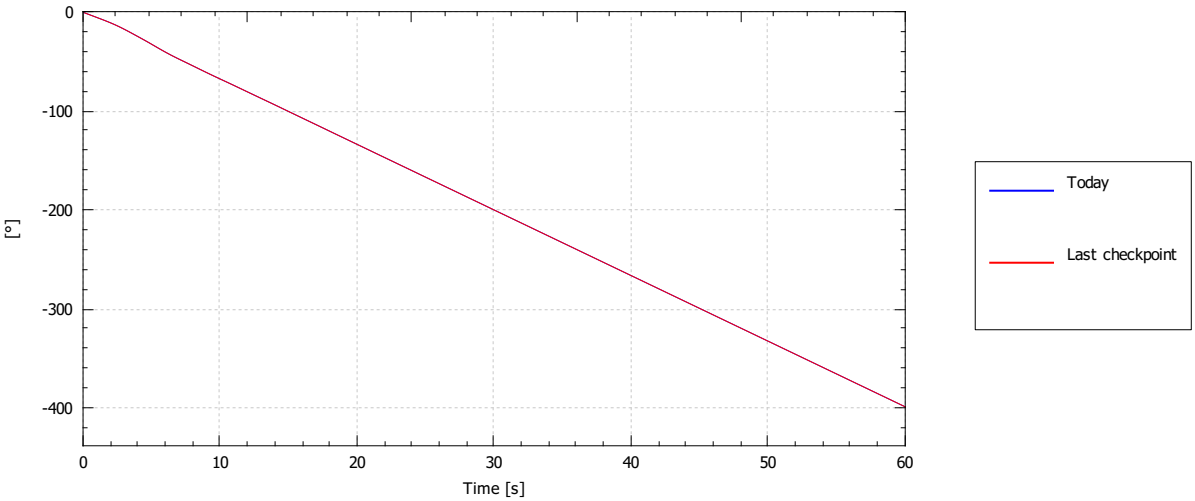
Rotational displacement (ru)



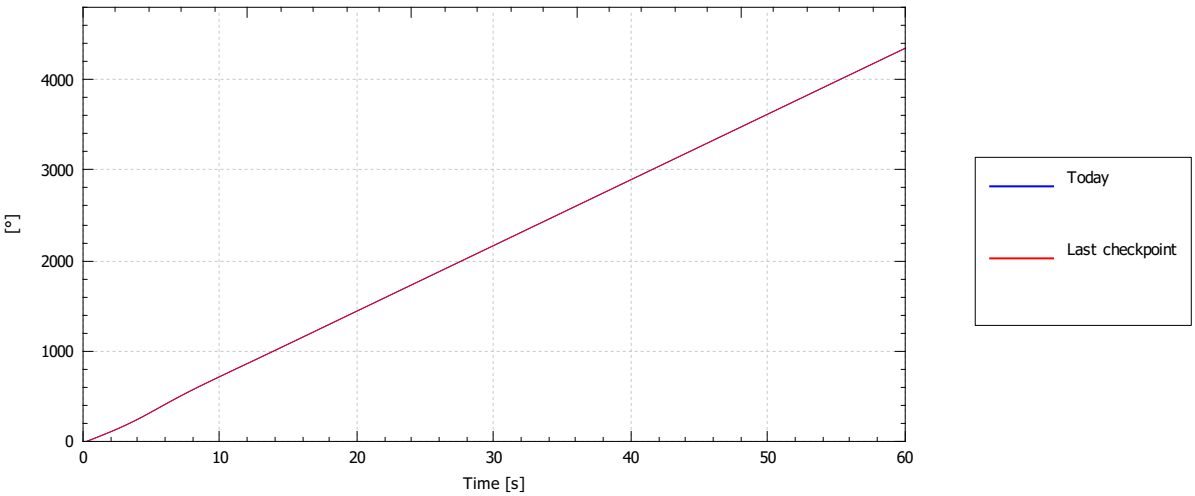

Rotational displacement (rv)



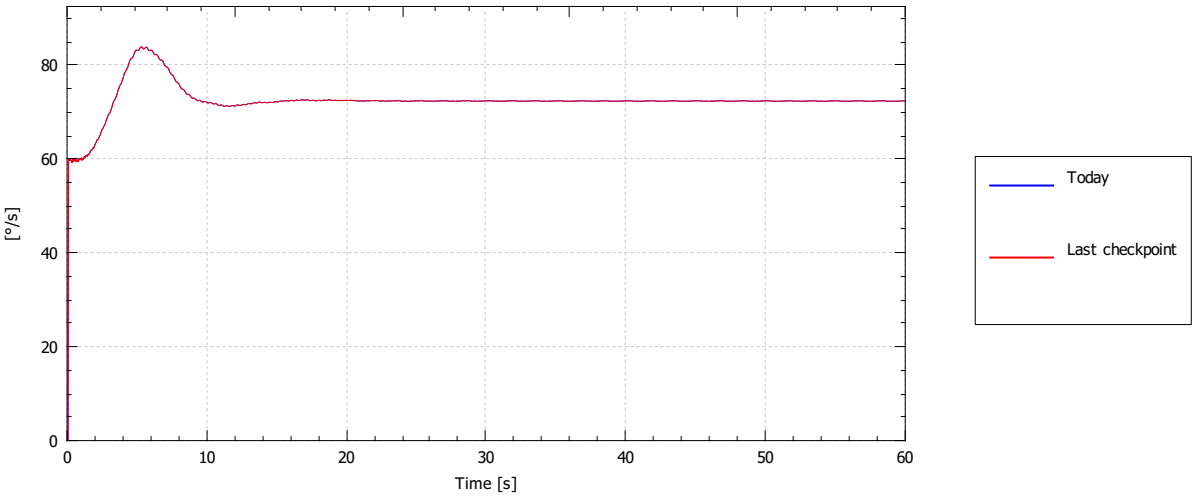

Rotational displacement (rw)



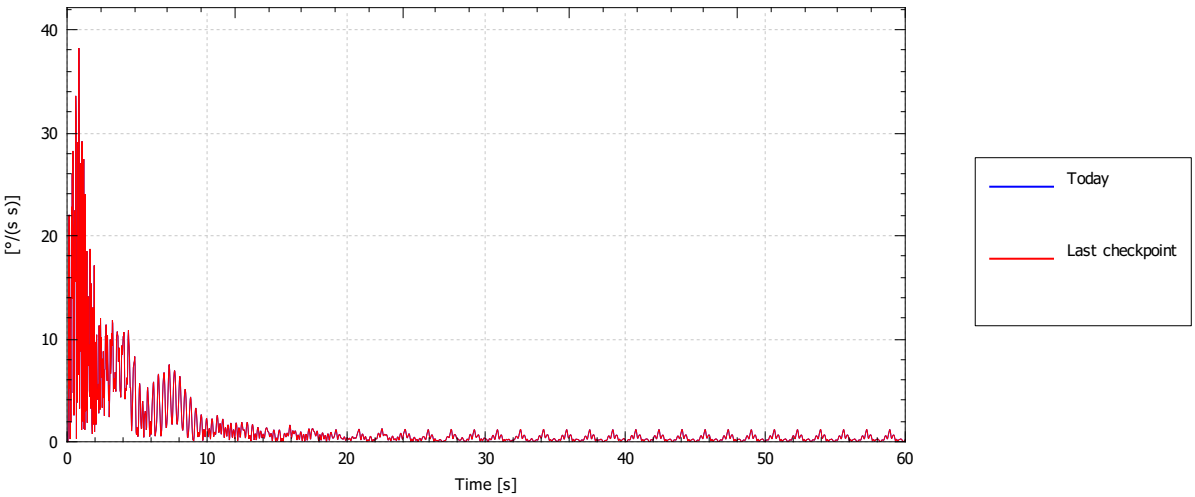
Rotational displacement magnitude



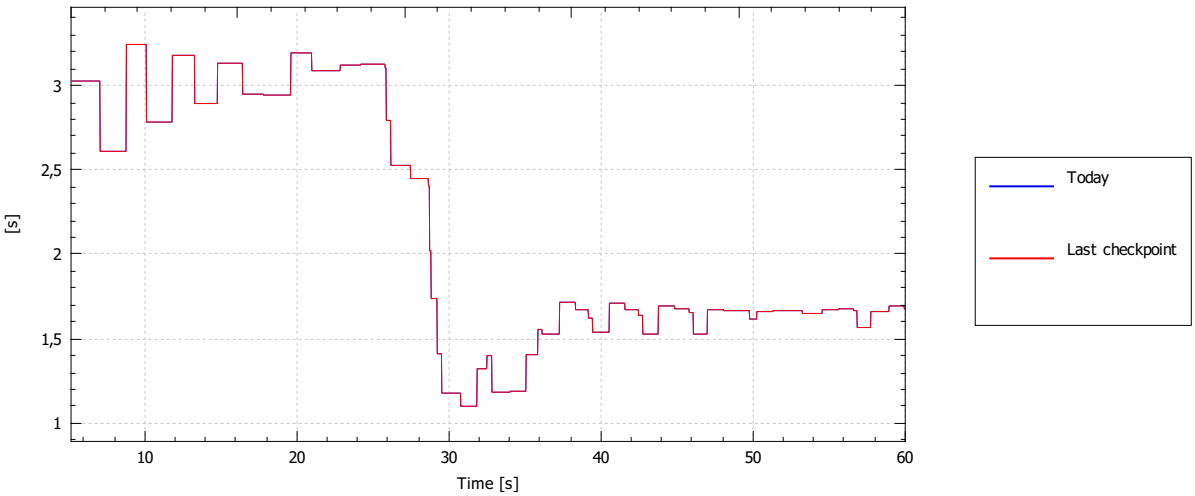

Rotational speed



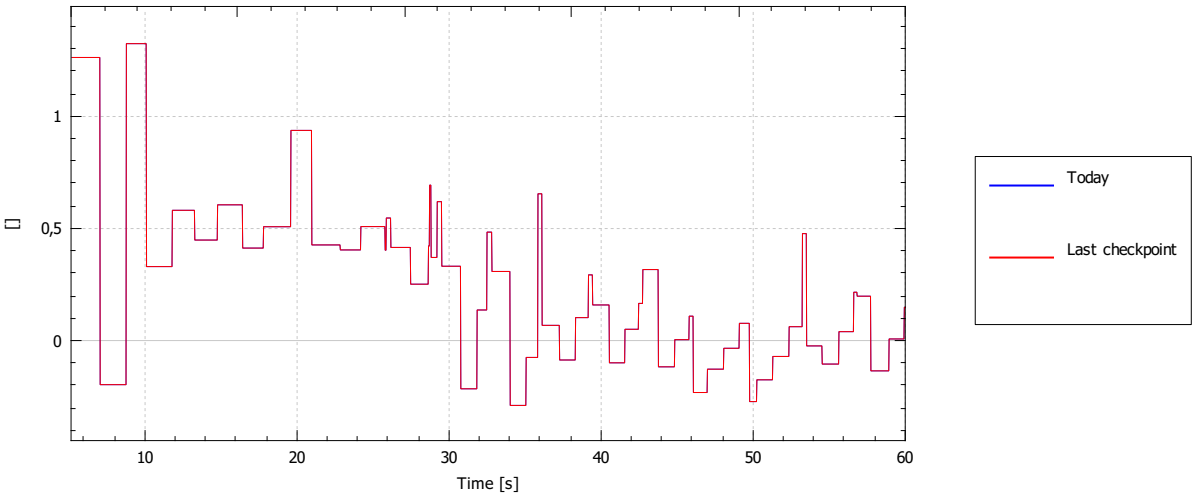

Rotational acceleration mag



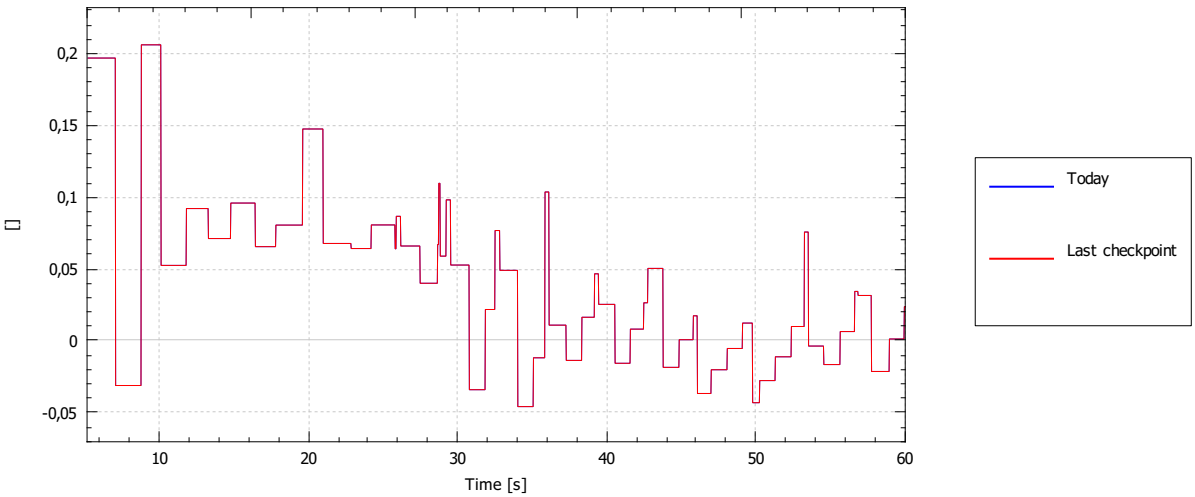
Displacement period




Displacement logarithmic decrement

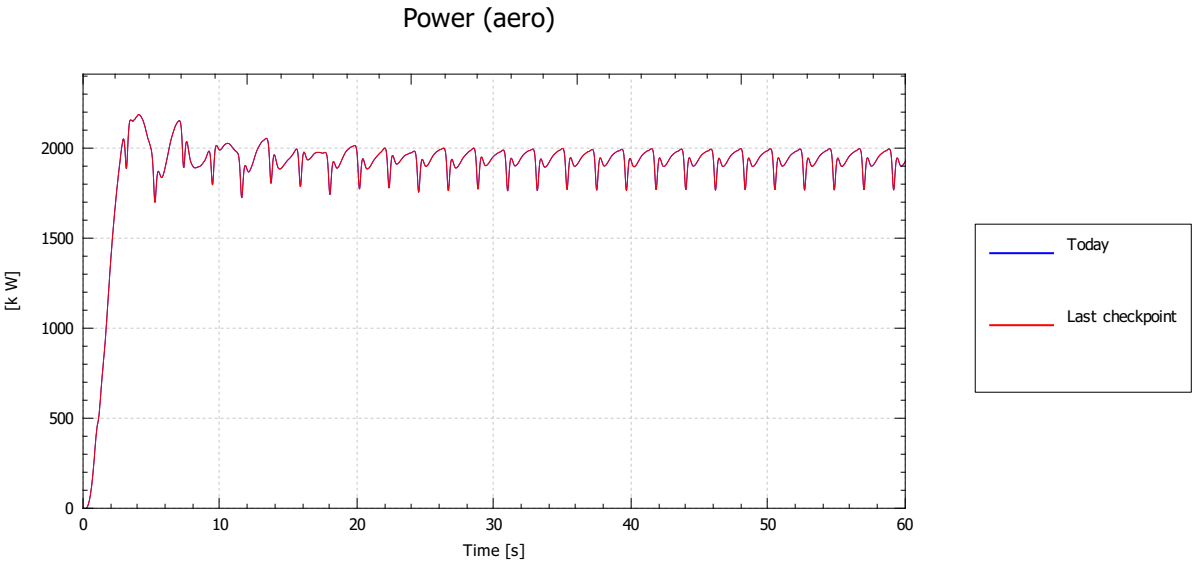


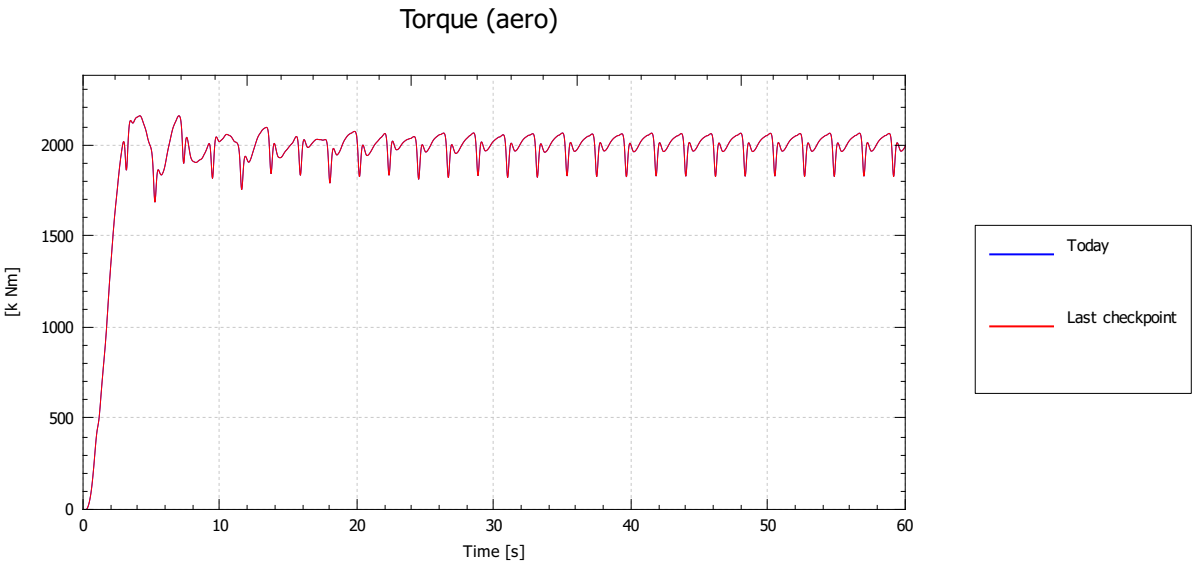

Displacement damping ratio



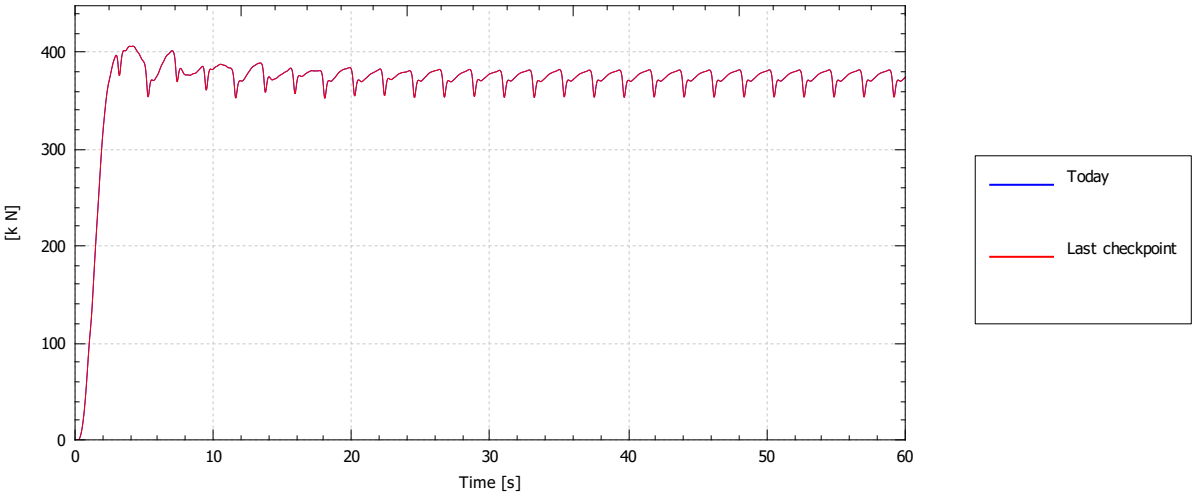
**Load case: initial angle**

**Rotor**

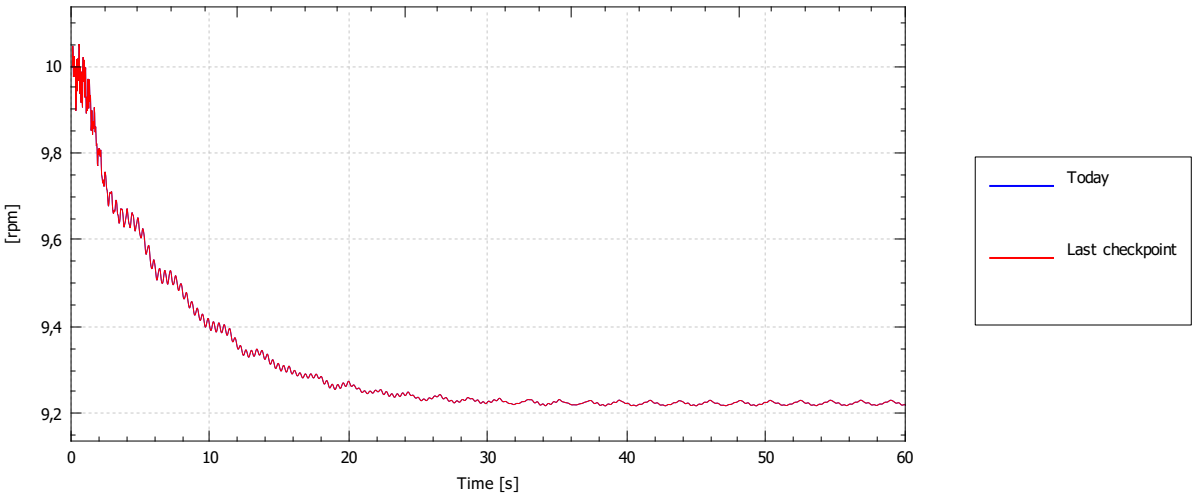


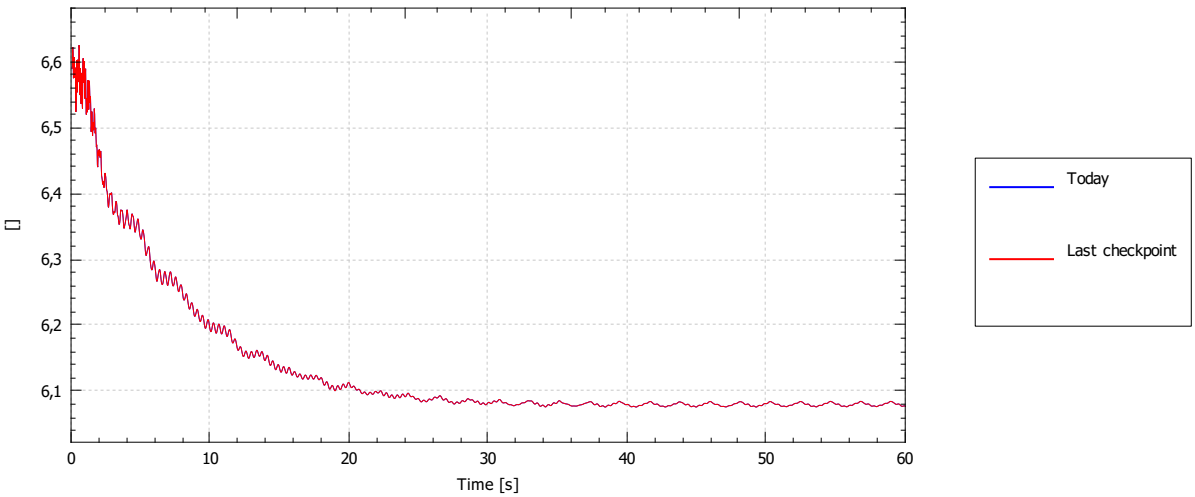
Thrust (aero)



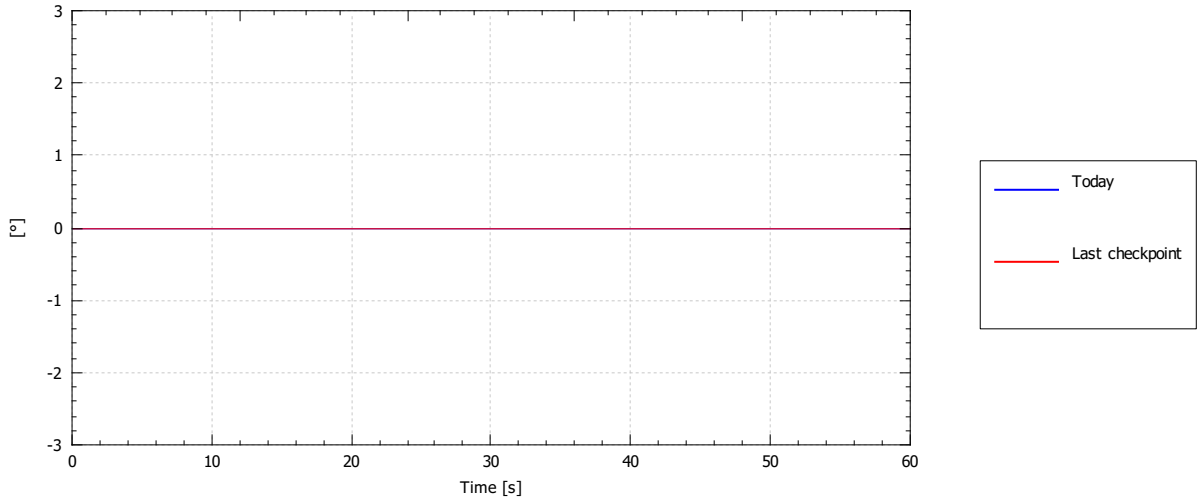

RPM



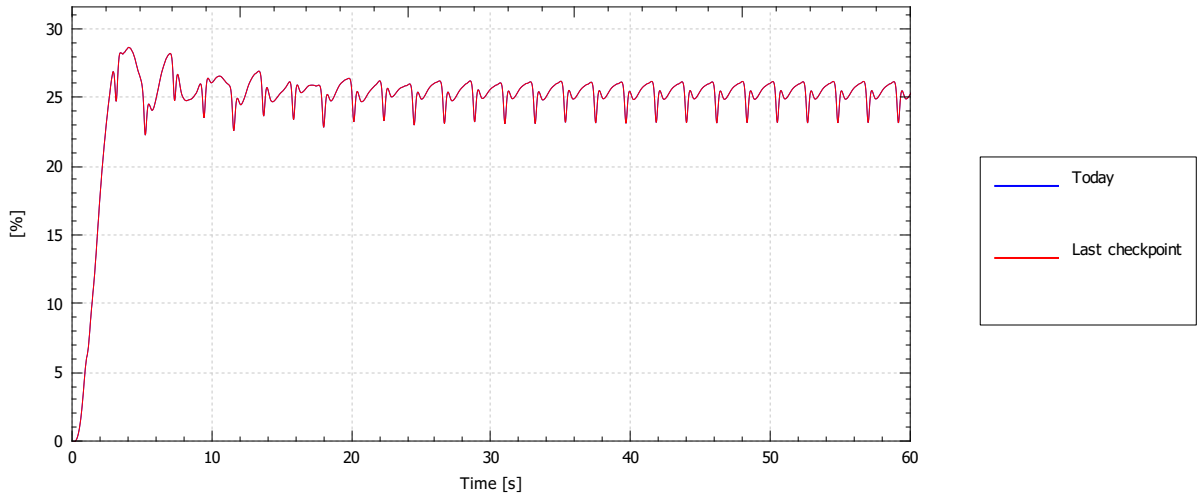

TSR



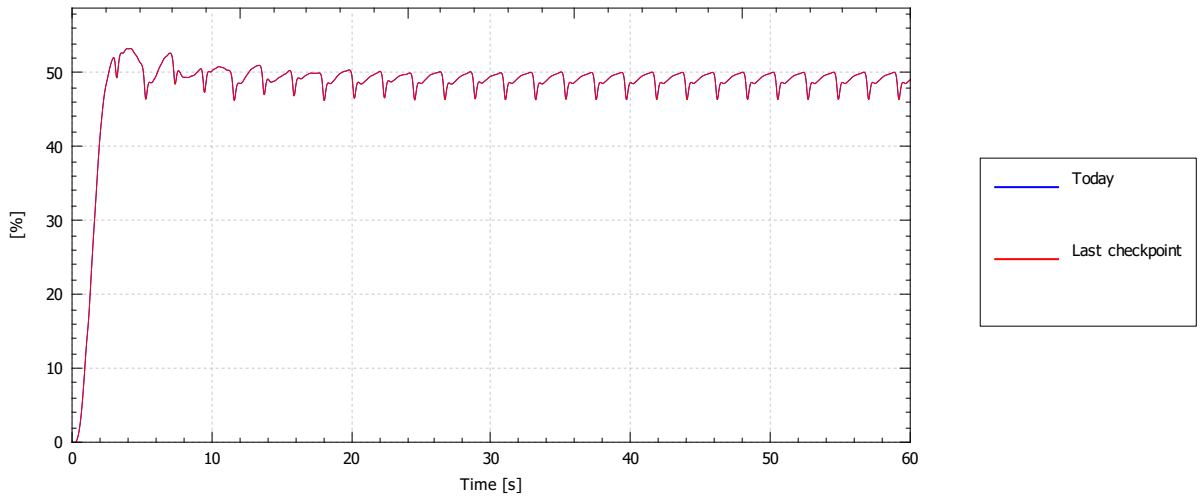
Representative demanded pitch angle



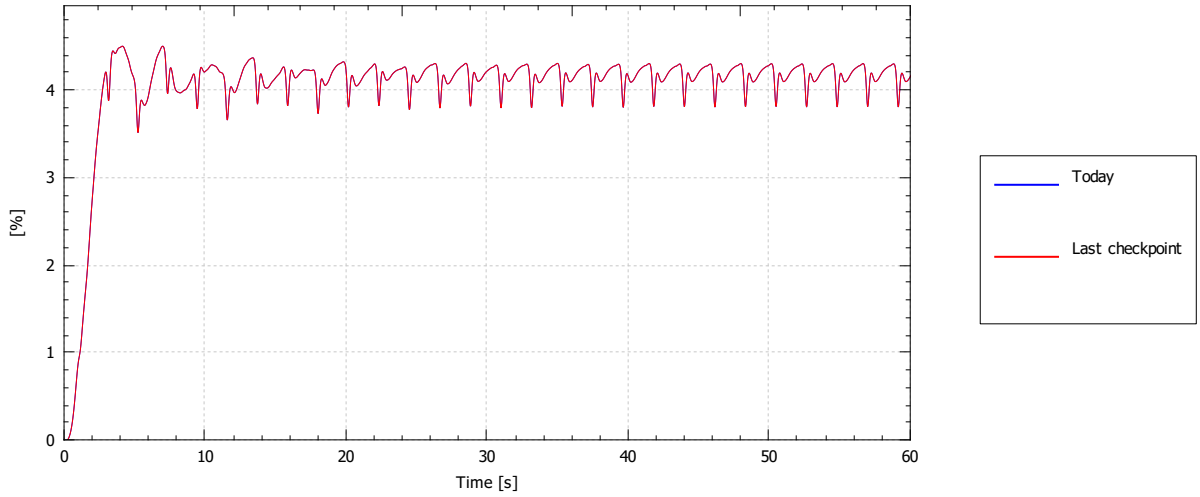

Power coef. (CP)



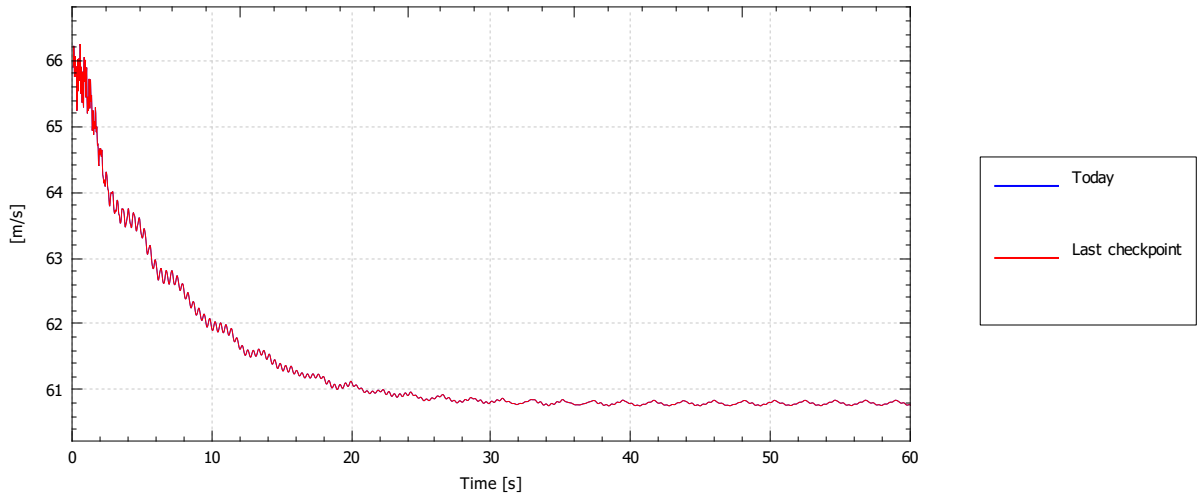

Thrust coef. (CT)



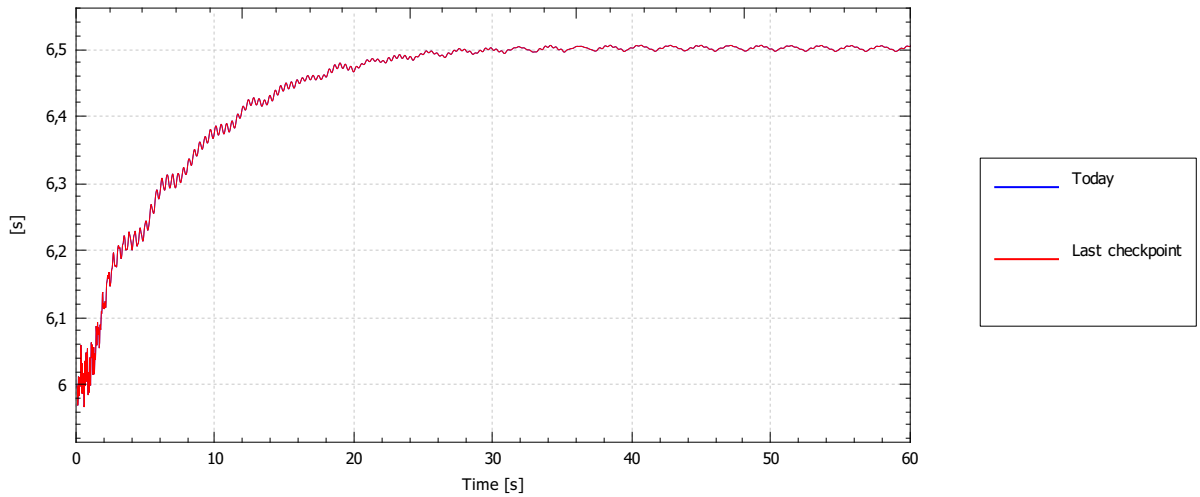
Torque coef. (CQ)



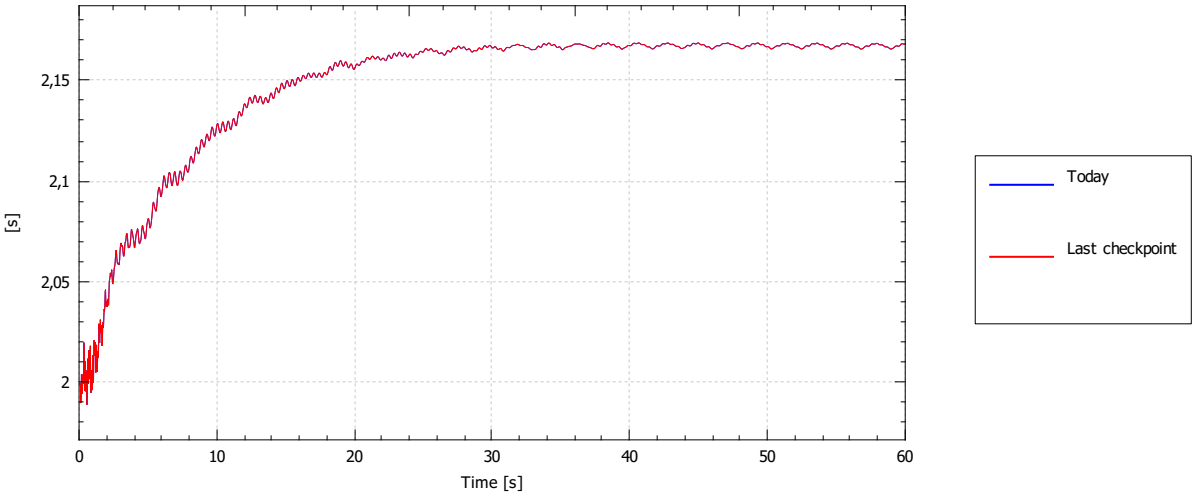

Tip speed



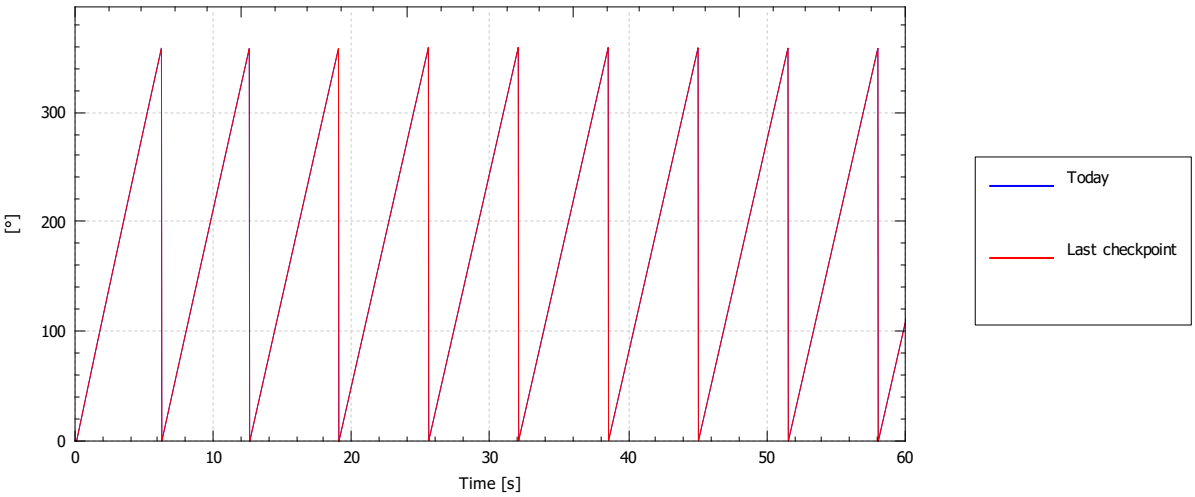

1P (one revolution)



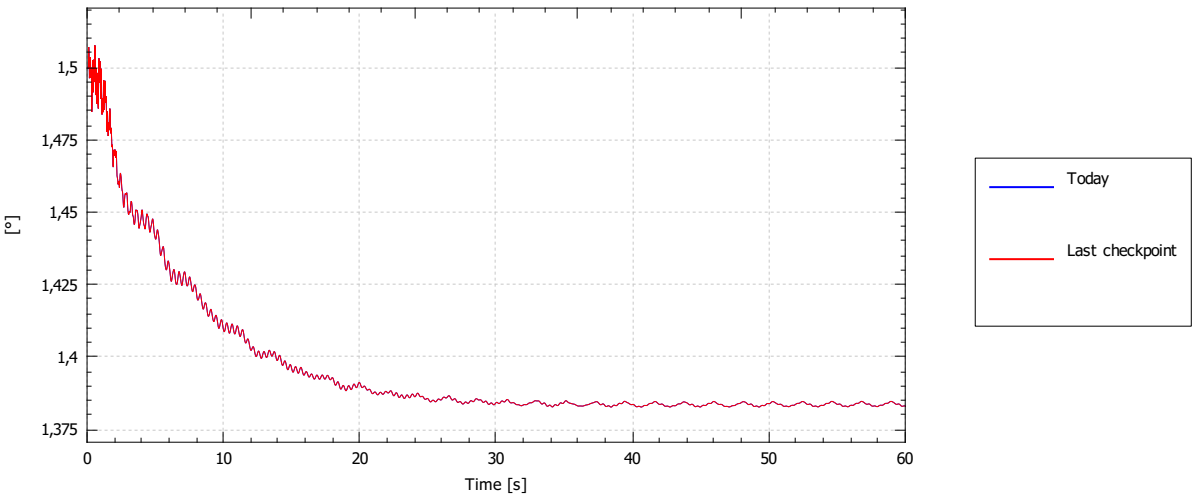
nP (blade passing)



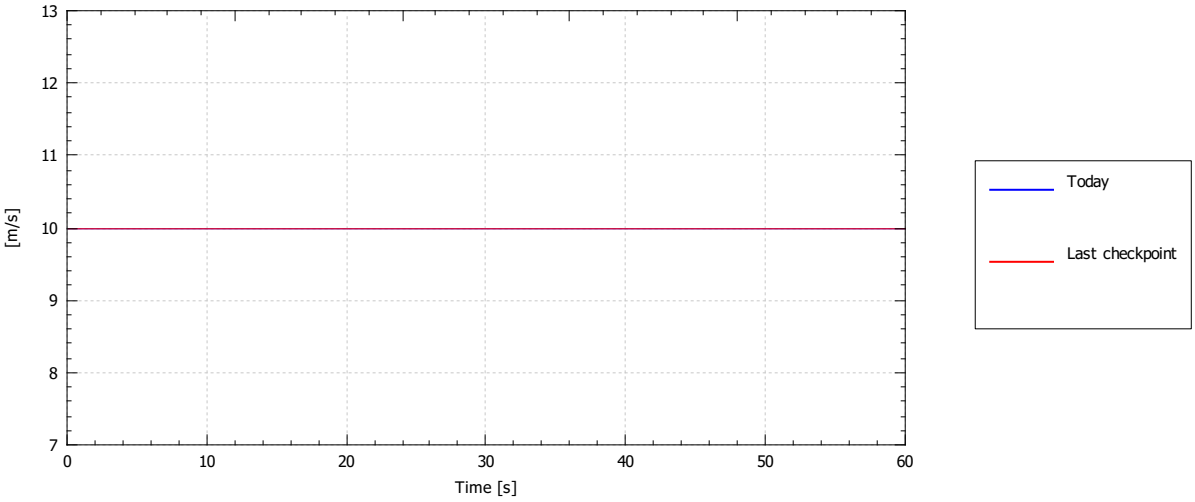

Azimuth angle



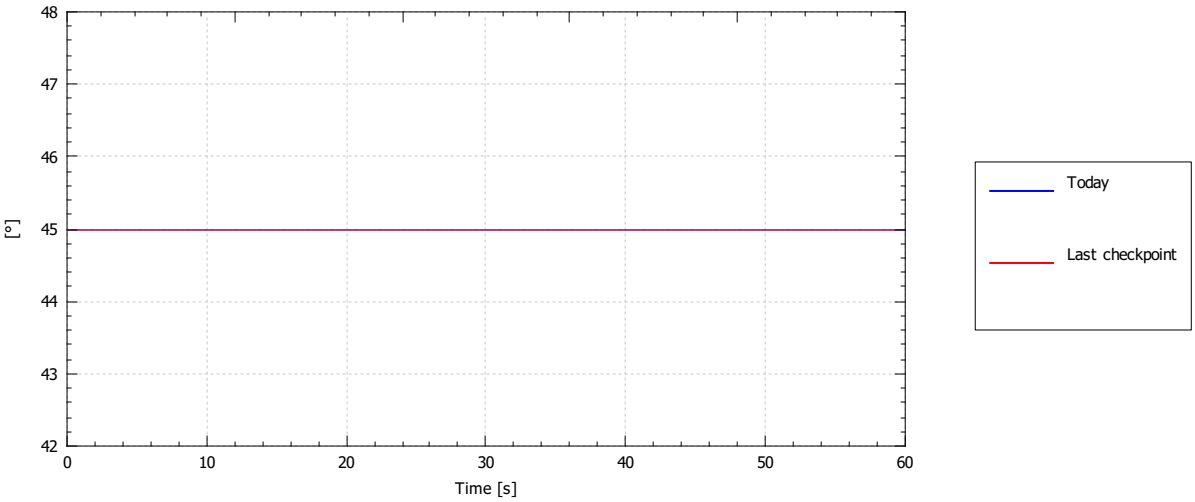

Rotation per timestep



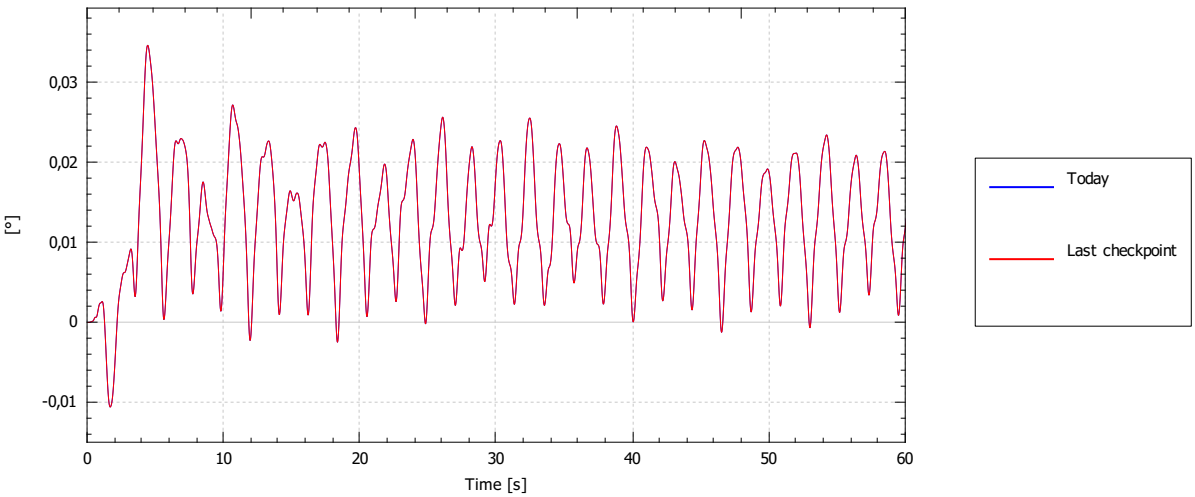
Wind speed at hub, magnitude



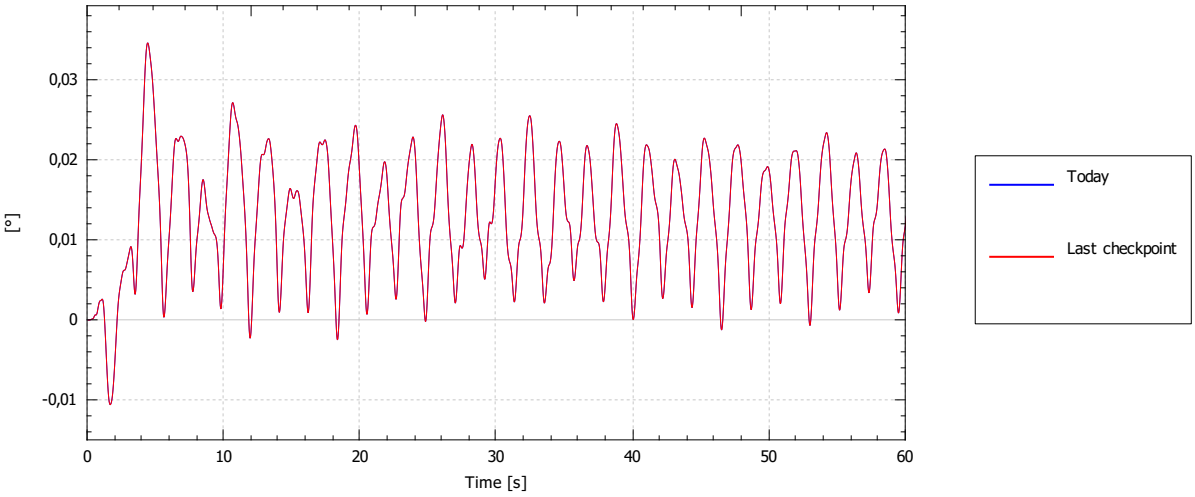

Wind angle at hub



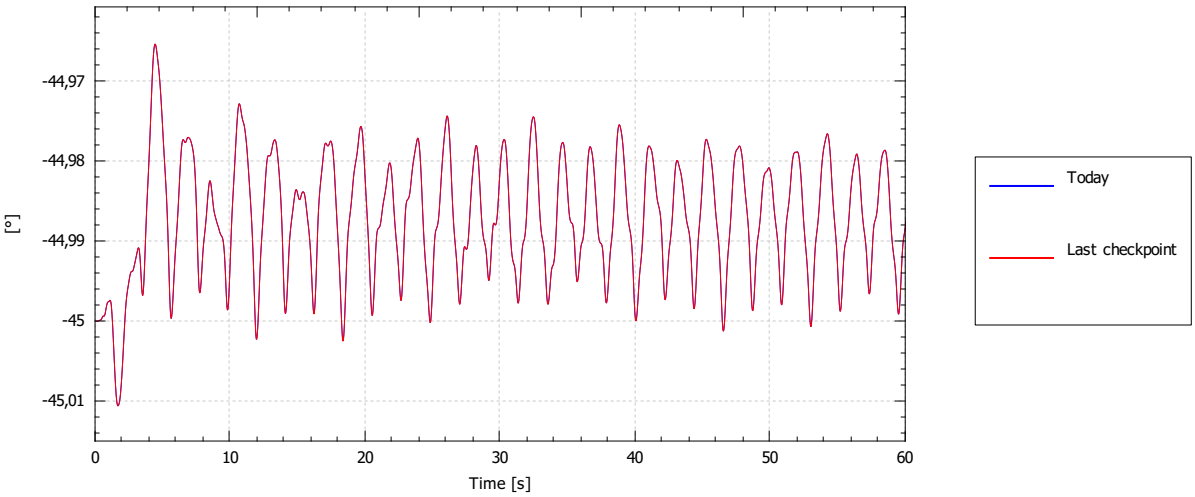

Yaw angle relative to forward



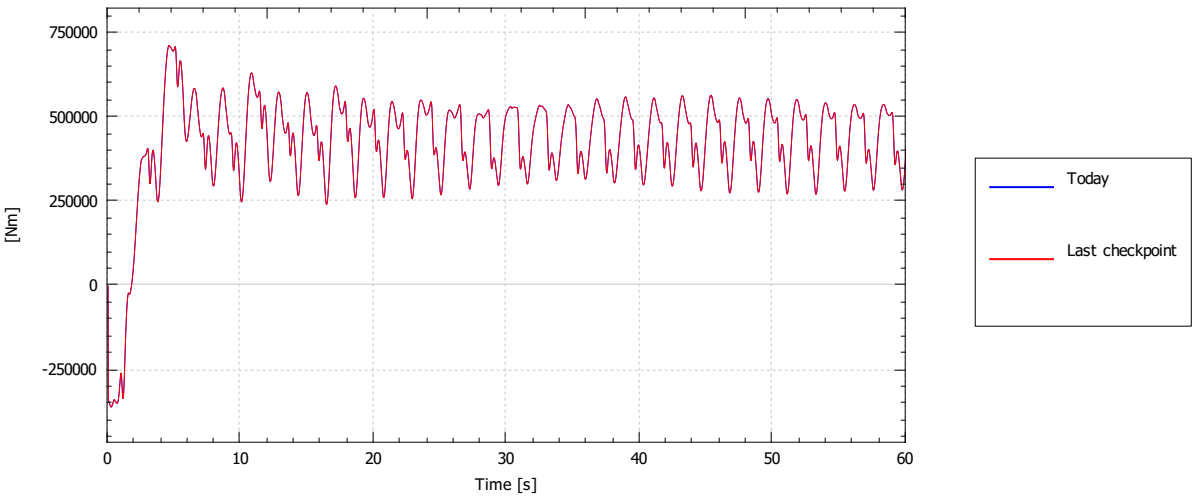
Yaw angle to reference direction




Yaw error

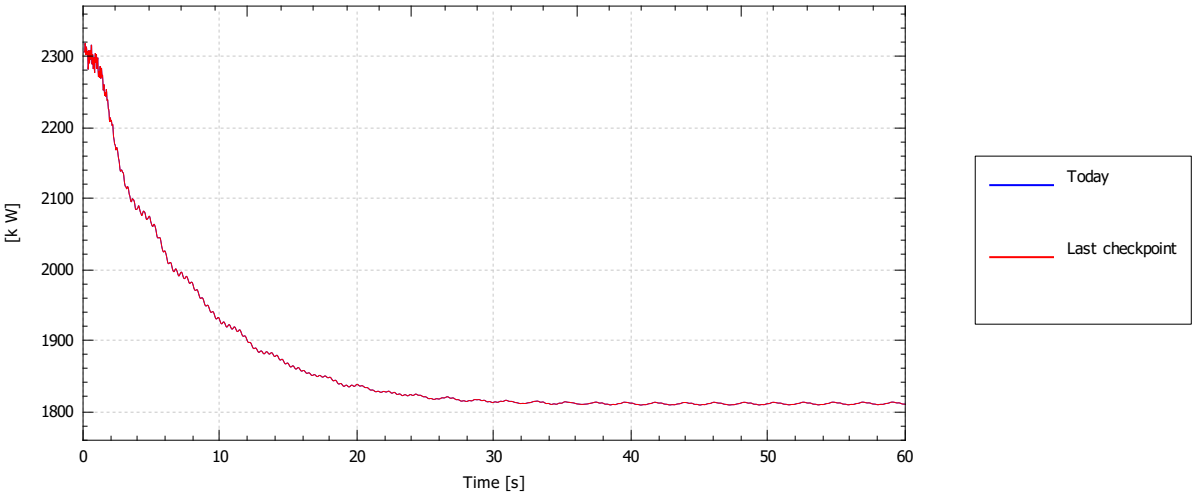



Torque about yaw axis

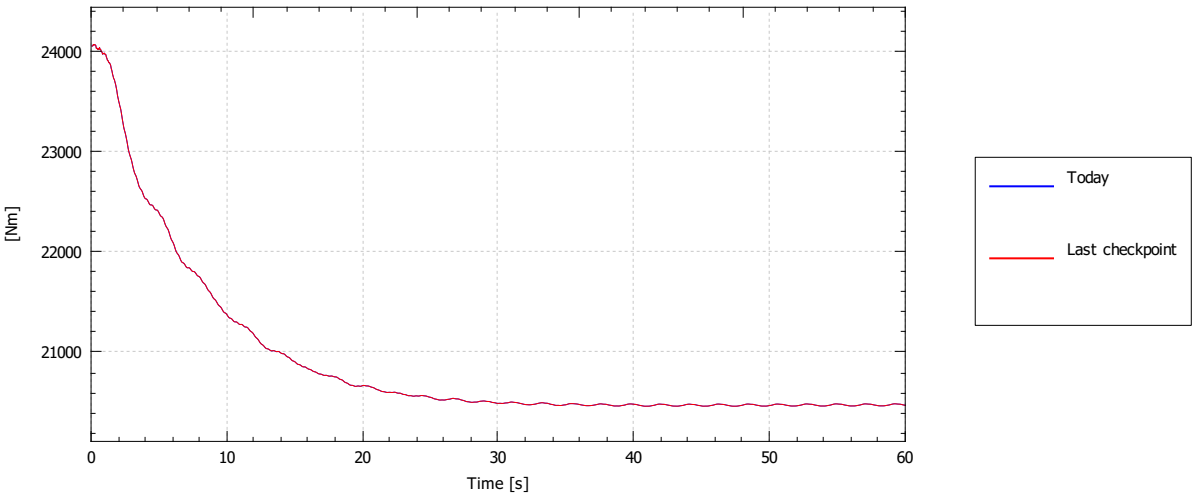


**Generator**

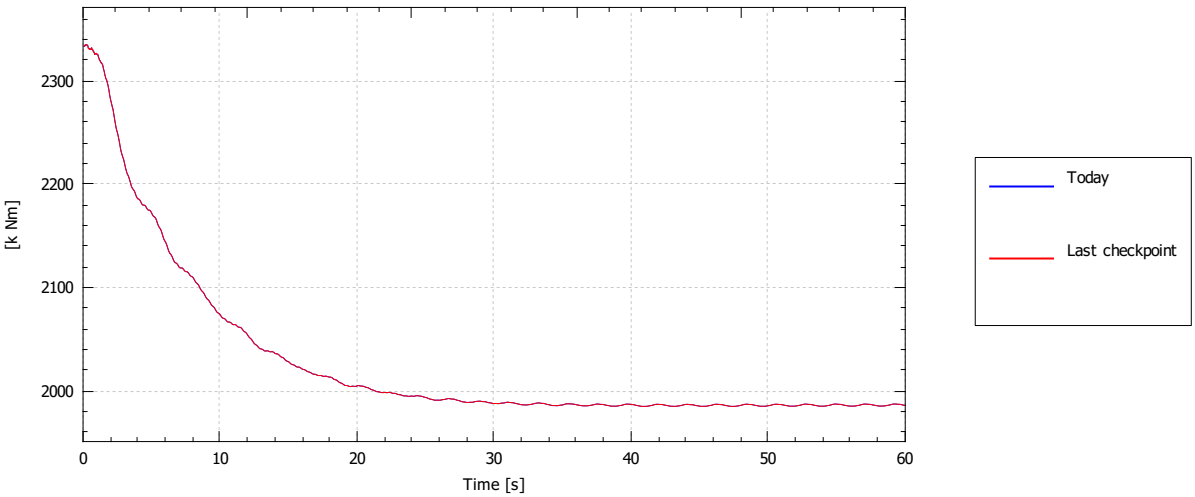
Power (electrical)



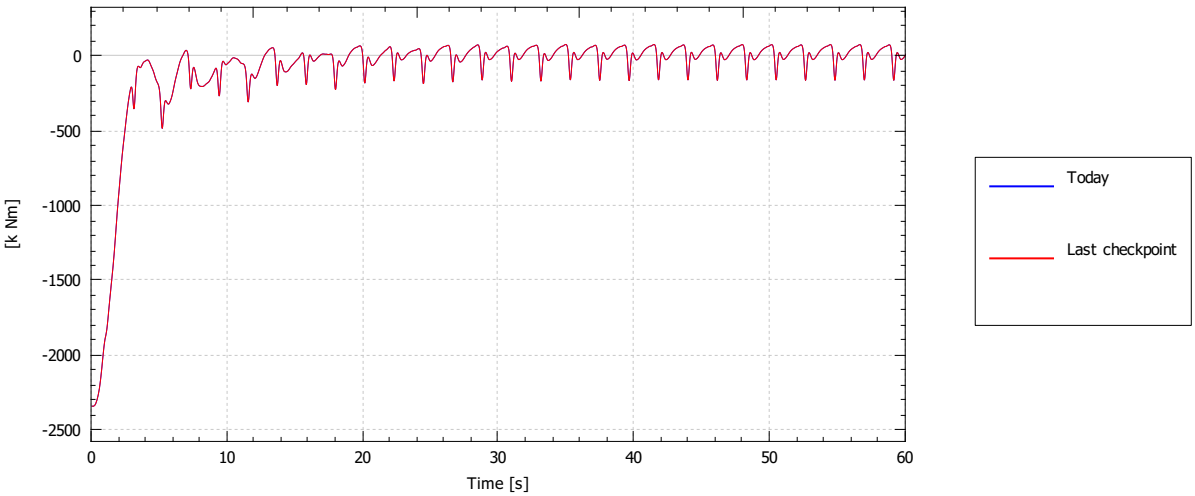

Torque



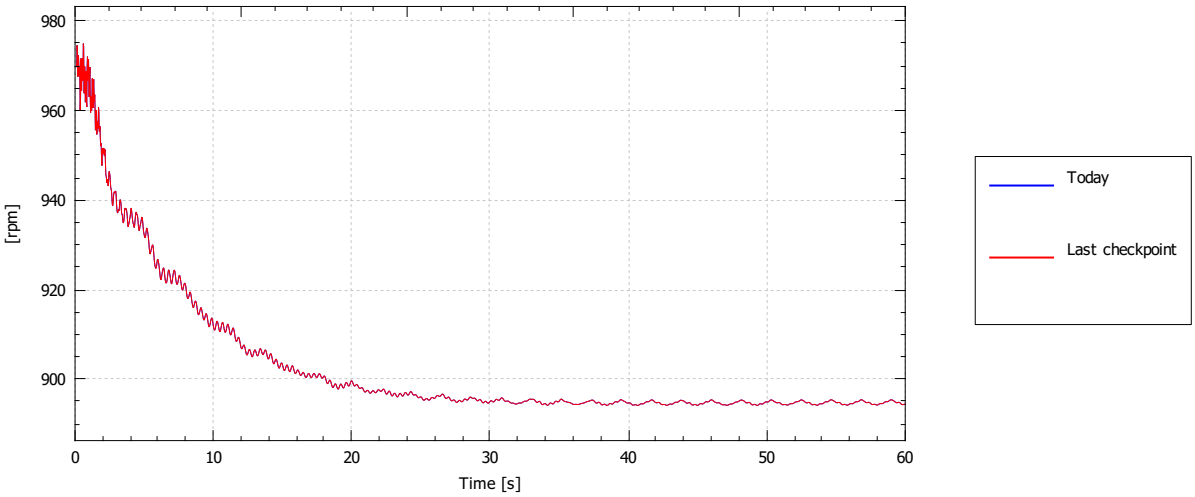

Torque on main shaft



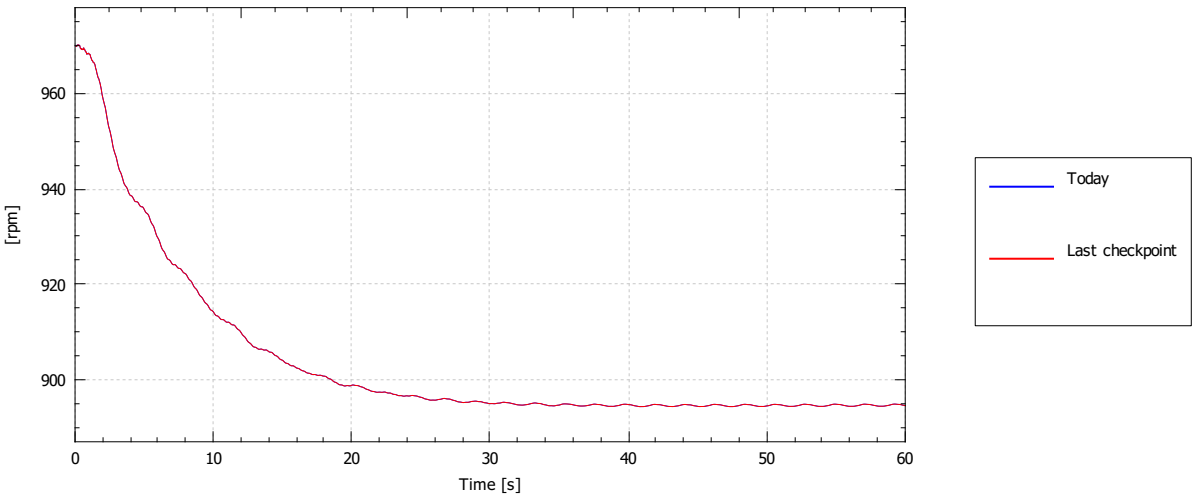
Torque diff. on main shaft

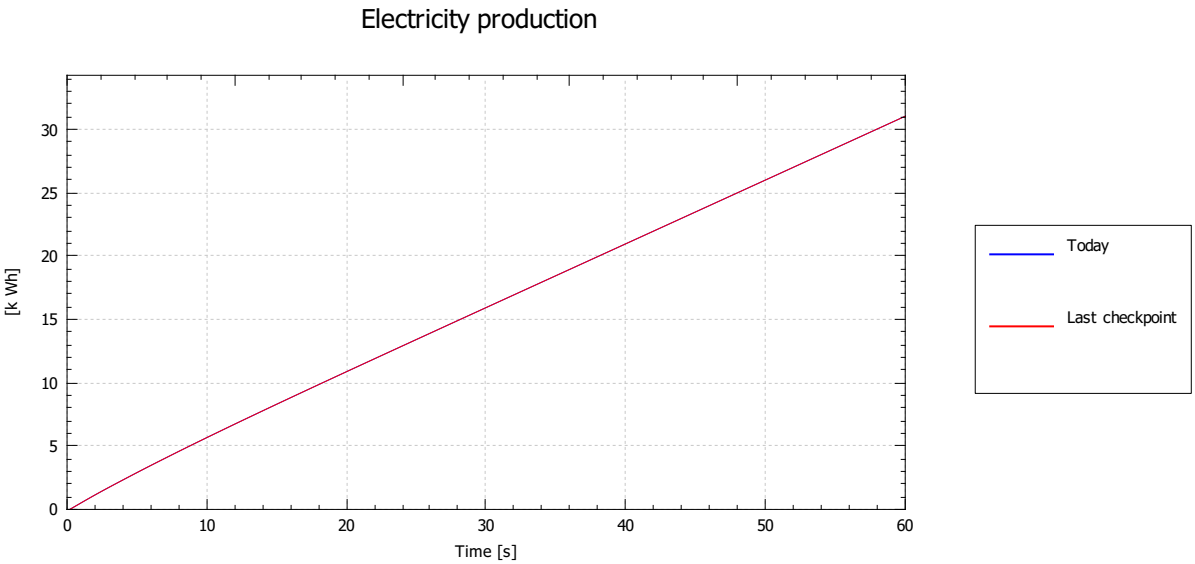


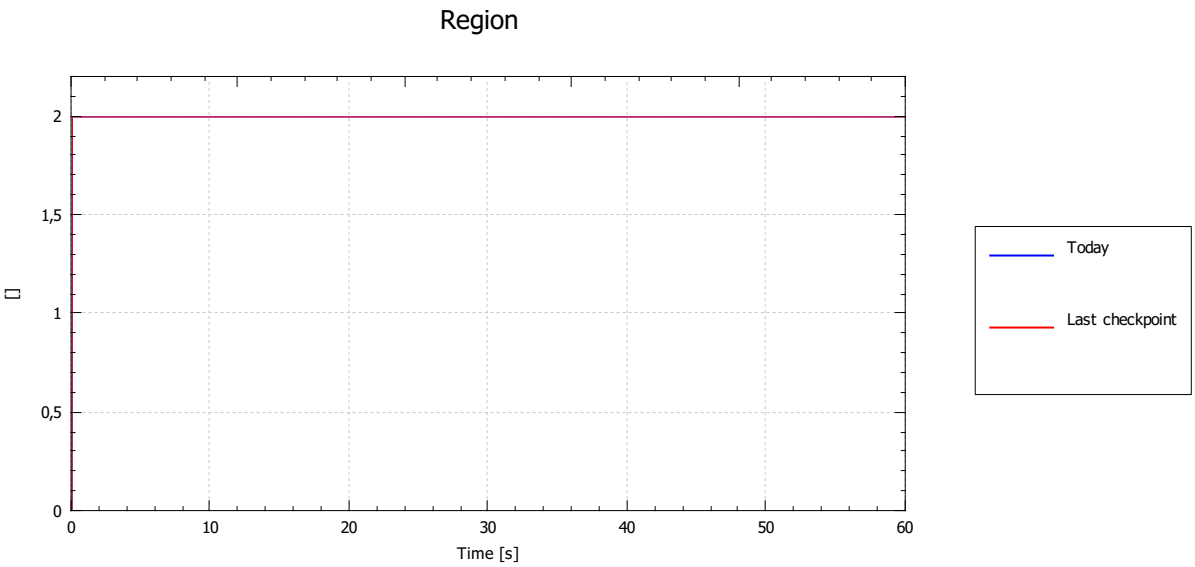

RPM




Filtered RPM

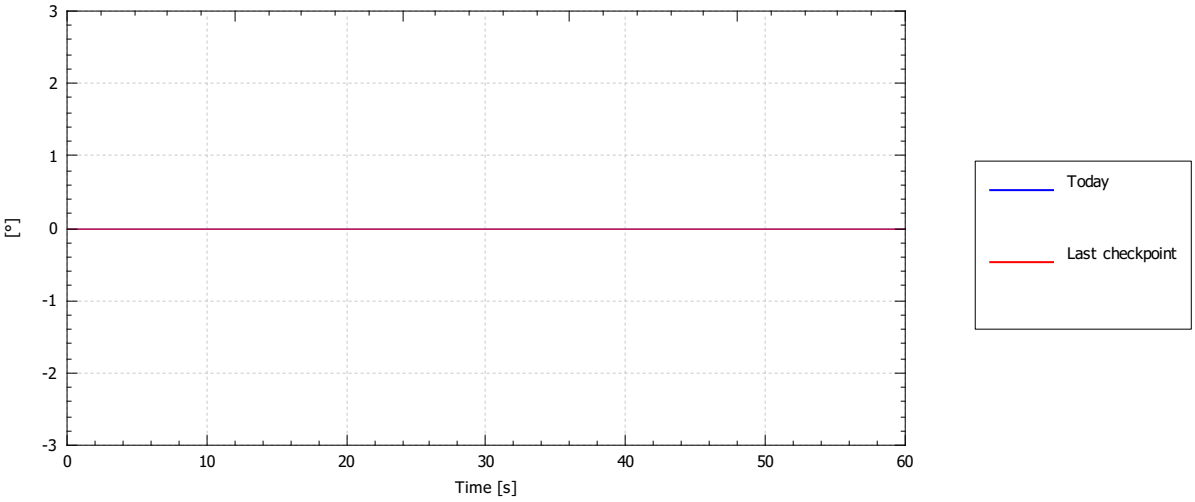




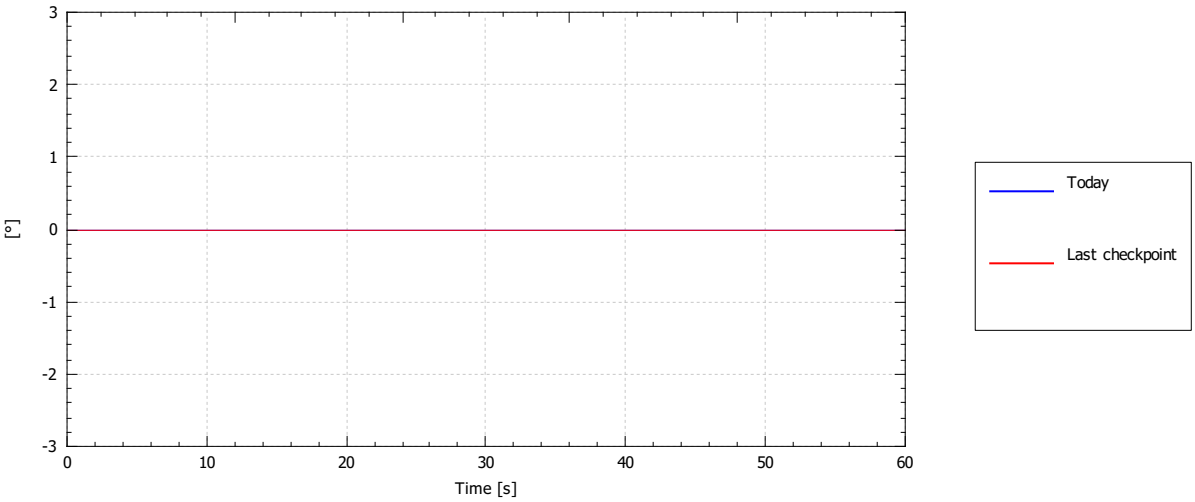




**Demanded pitch controller**

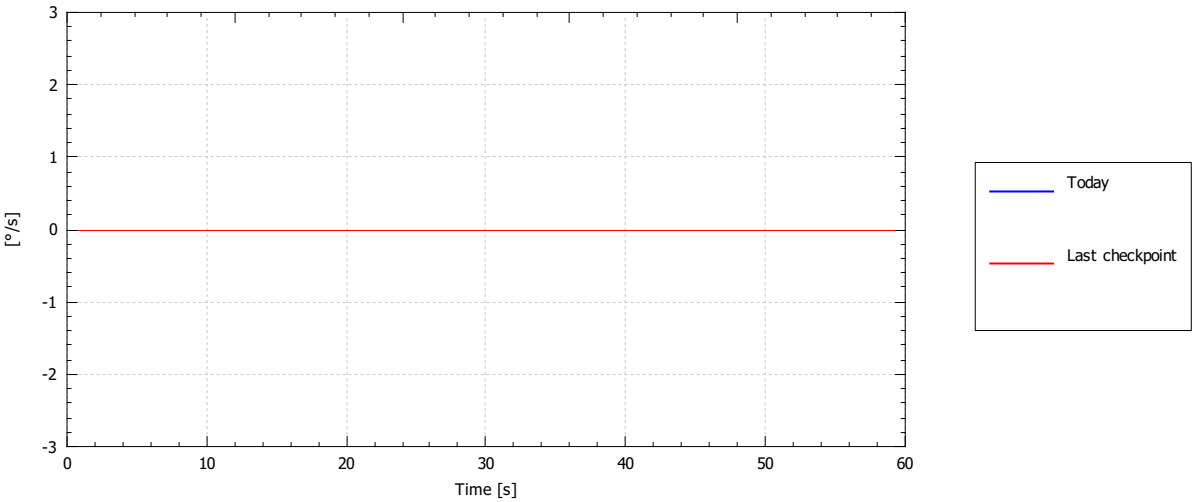
Demanded collective pitch angle

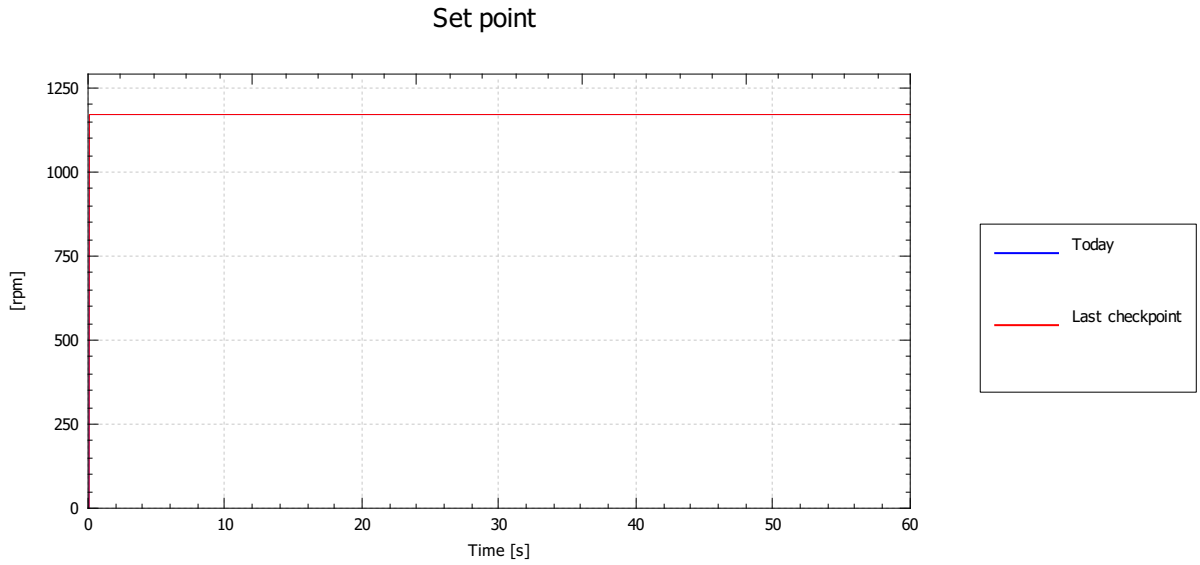


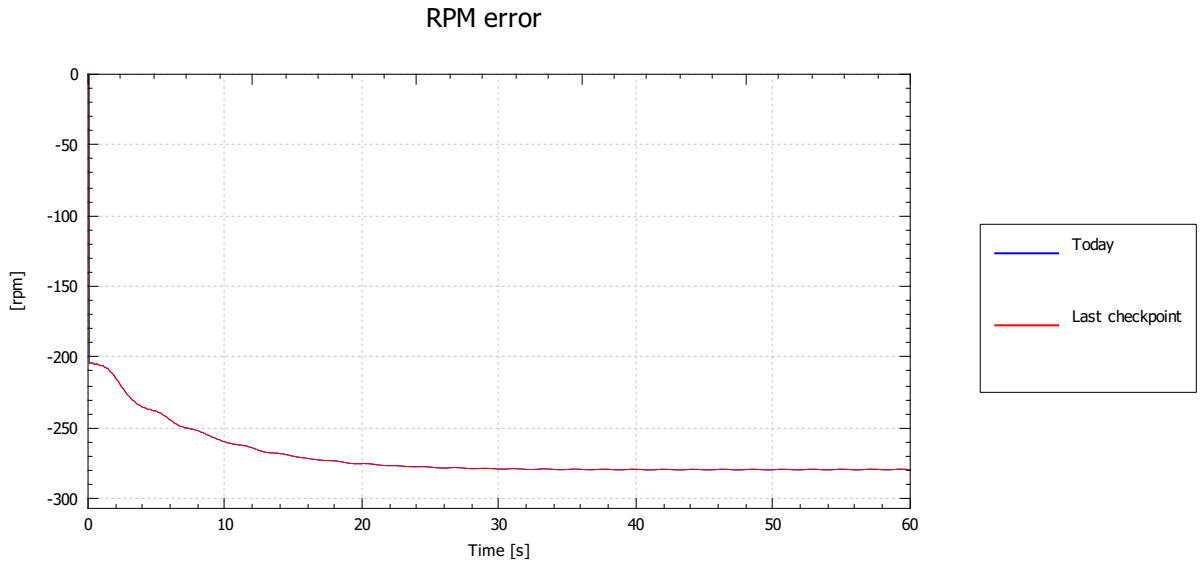

Cumulative demanded collective pitch angle

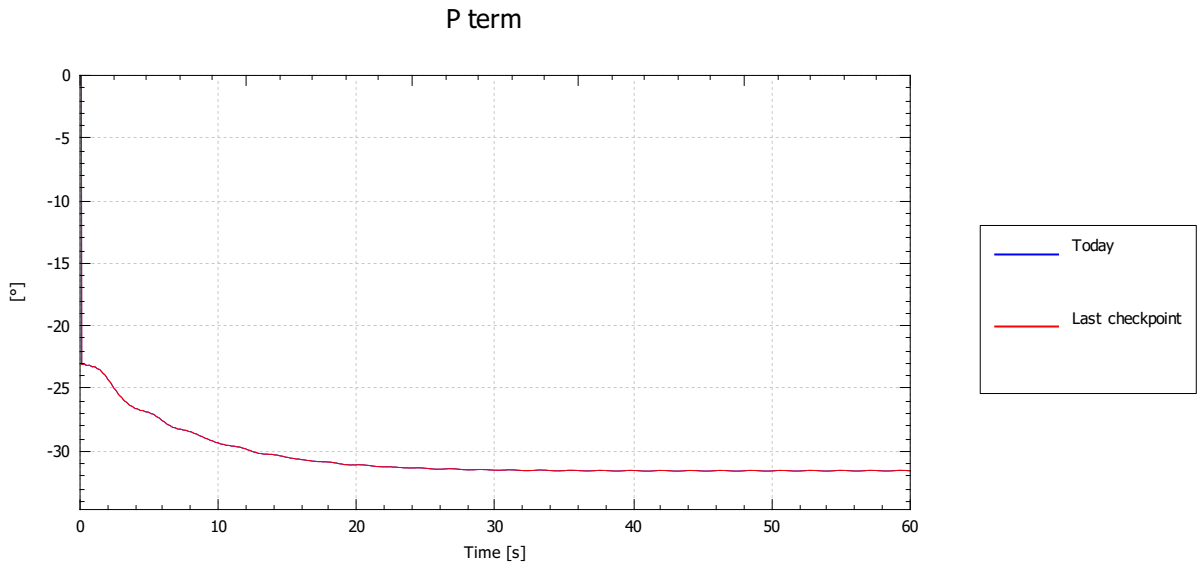



Demanded collective pitch angle rate

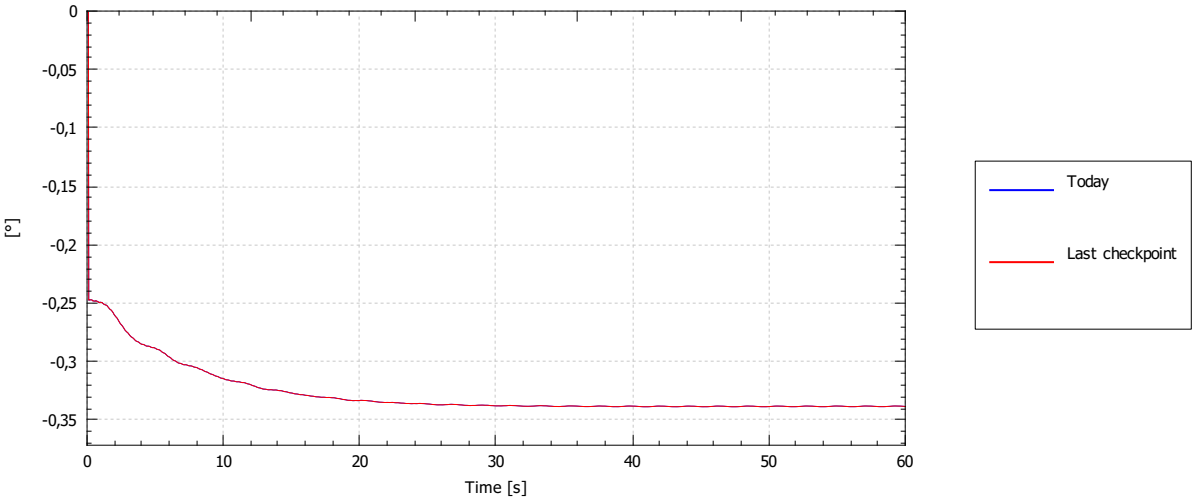



Set point
1250
1000
750
500
250
0
[rpm]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint

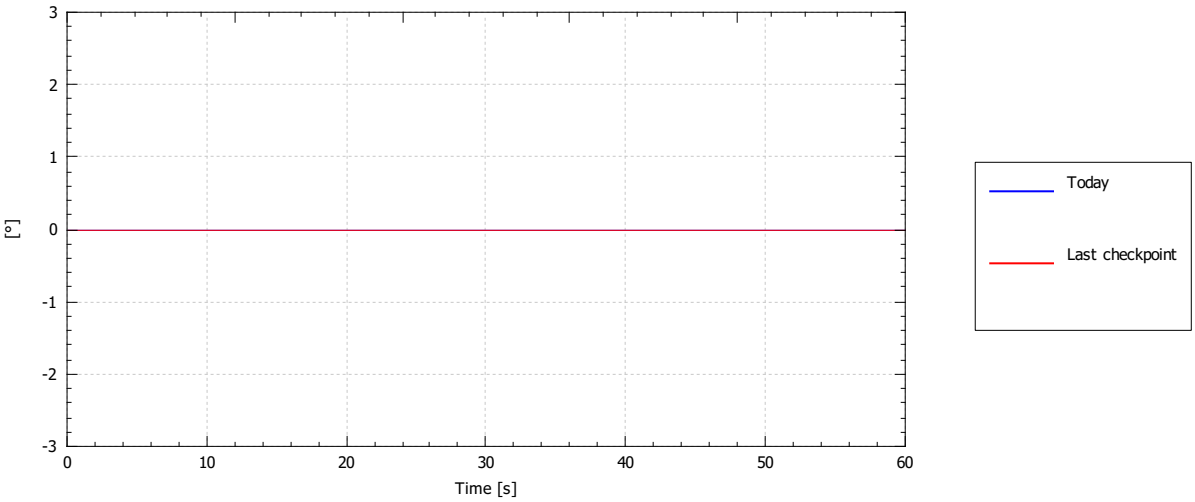

RPM error
0
-50
-100
-150
-200
-250
-300
[rpm]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint


P term
0
-5
-10
-15
-20
-25
-30
[°]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint

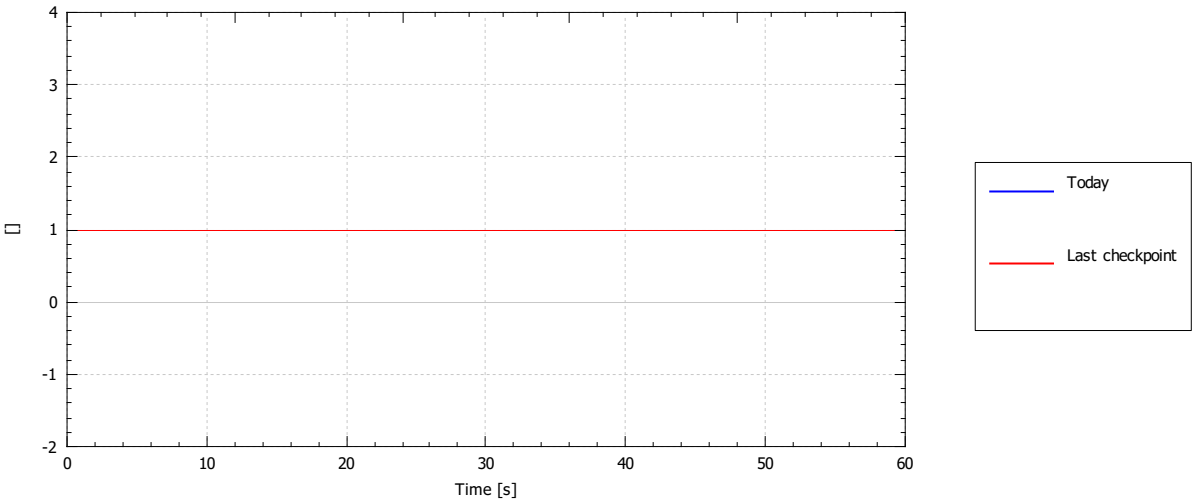
I term




D term

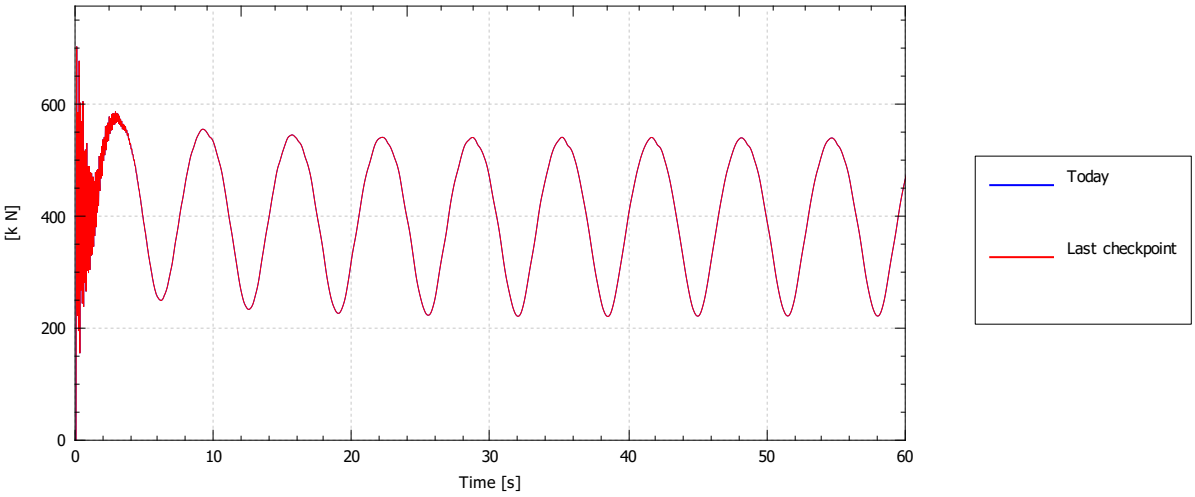



Gain scheduling factor

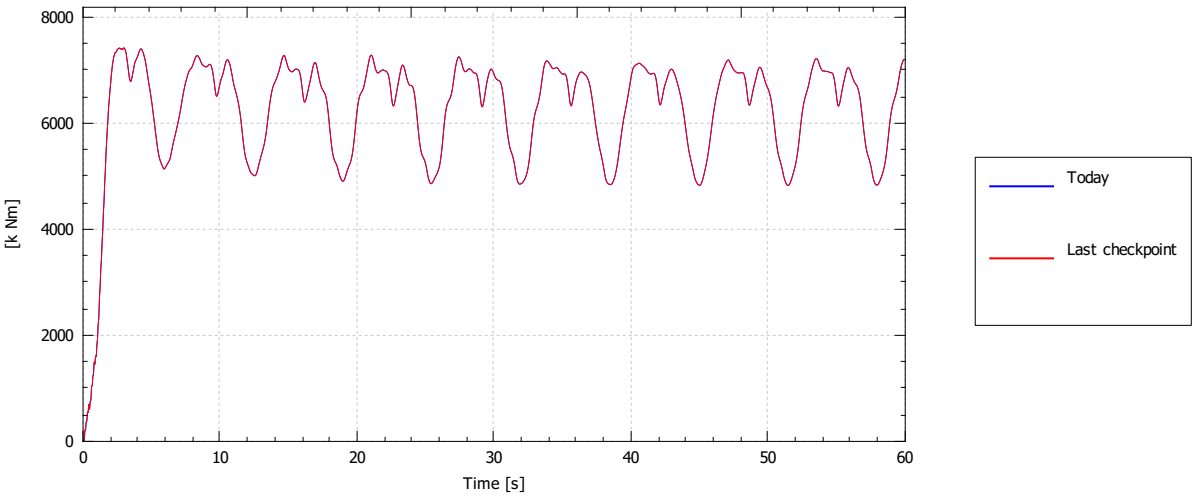


**Blade [Time] [Blade 1]**

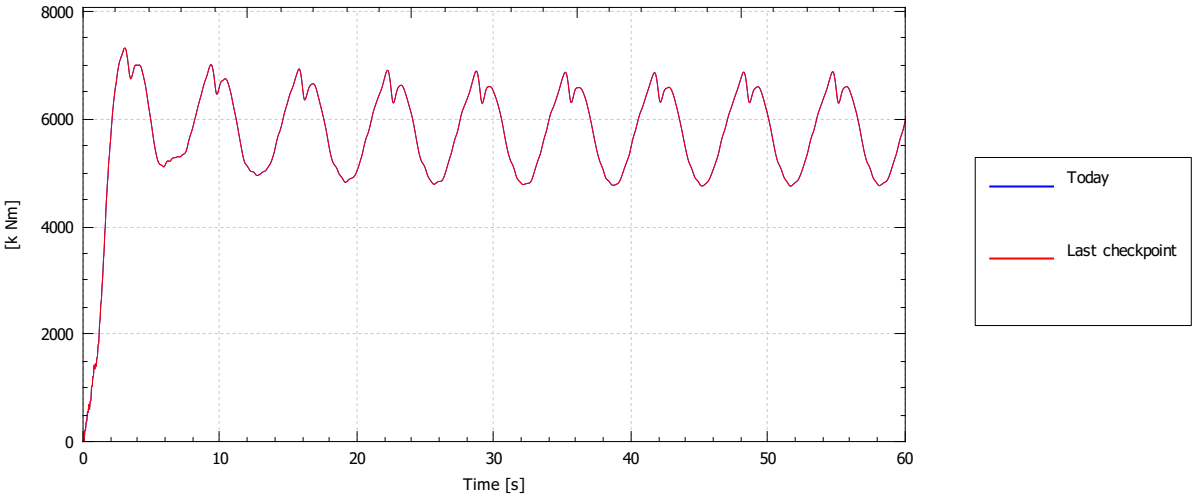
Root force (magnitude)



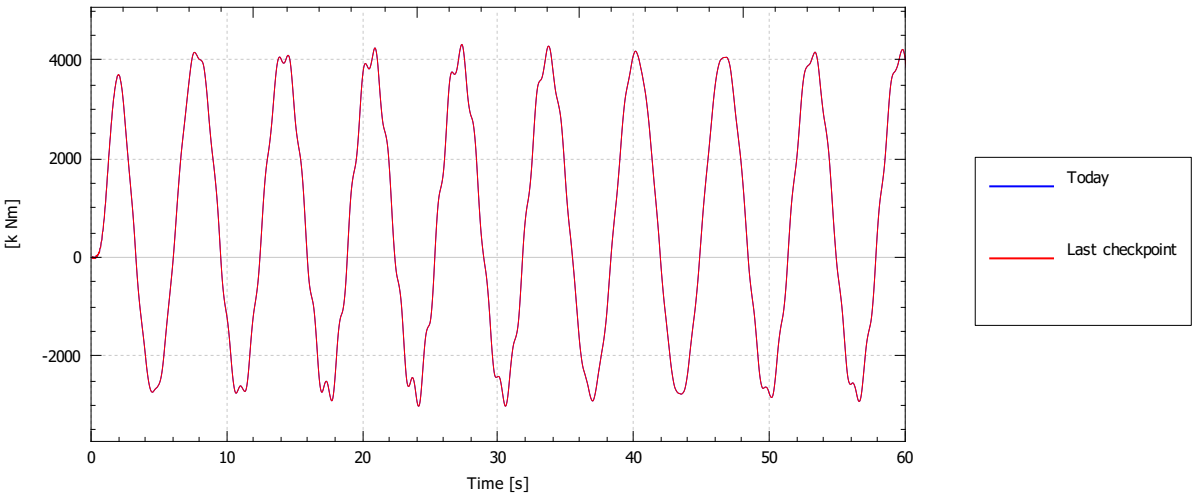

Root moment (magnitude)



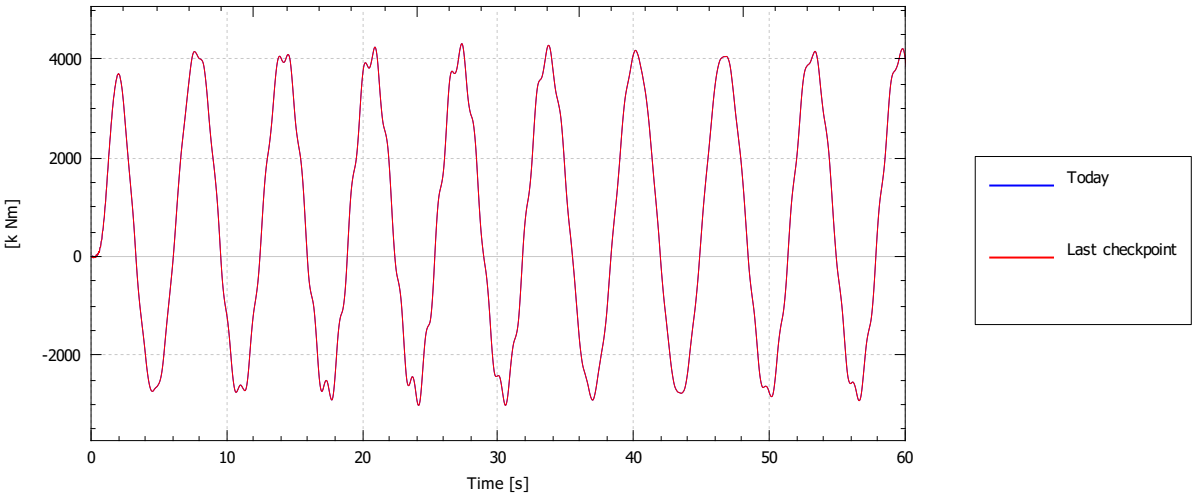

Root moment (out-of-plane)



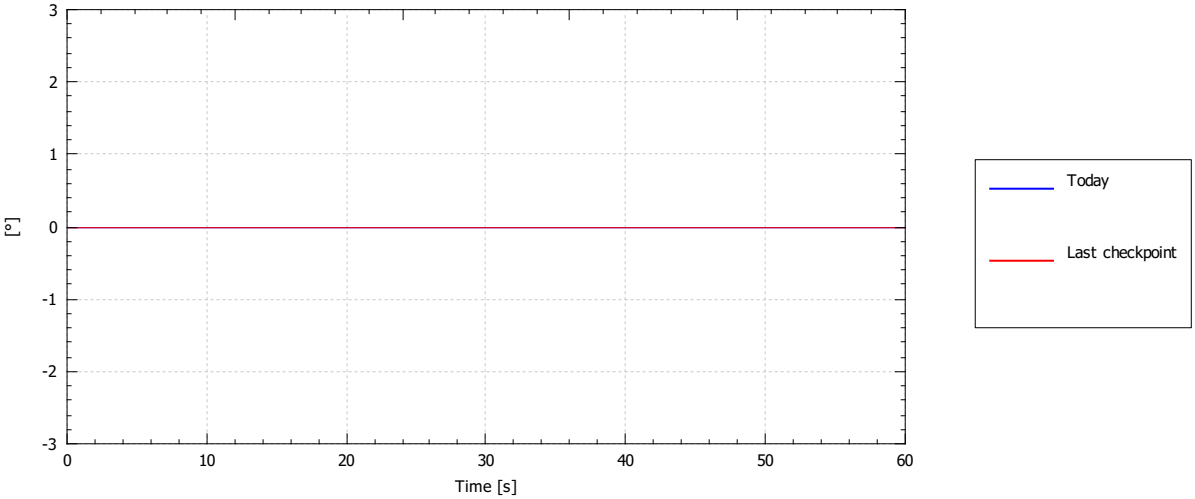
Root moment (in-plane)



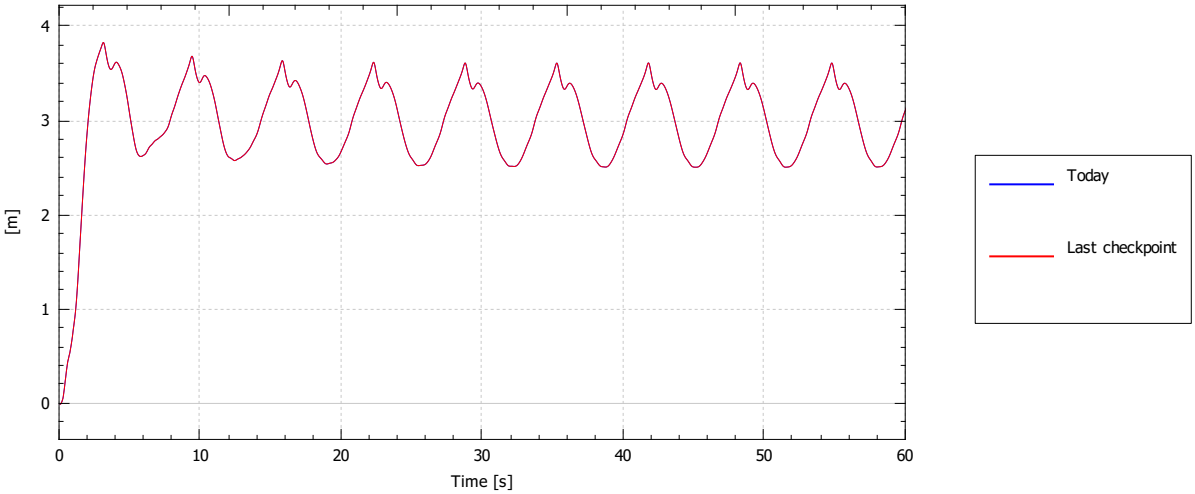

Root moment about shaft



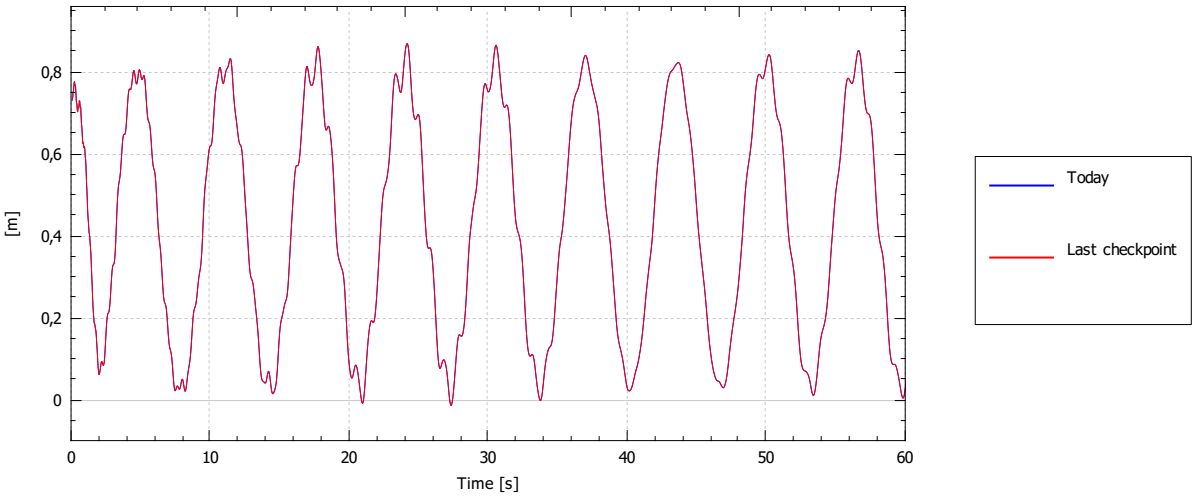

Pitch angle



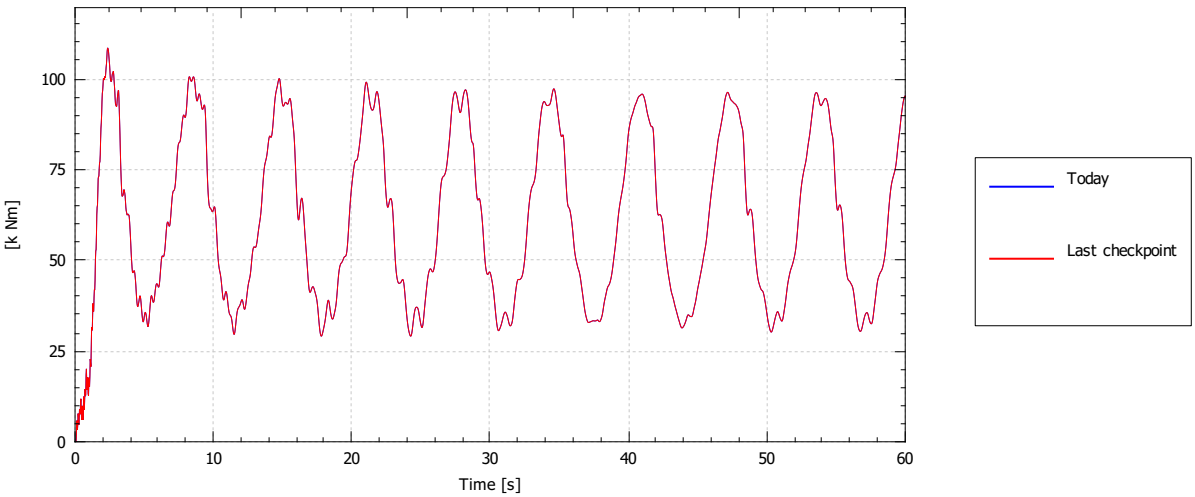
Tip deflection (out-of-plane)




Tip deflection (in-plane)

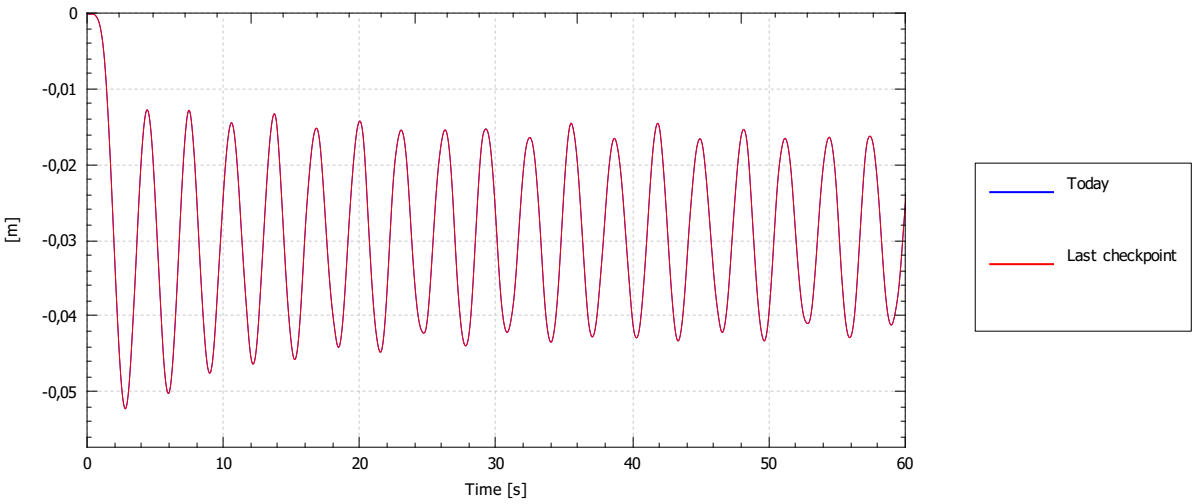



Root torque

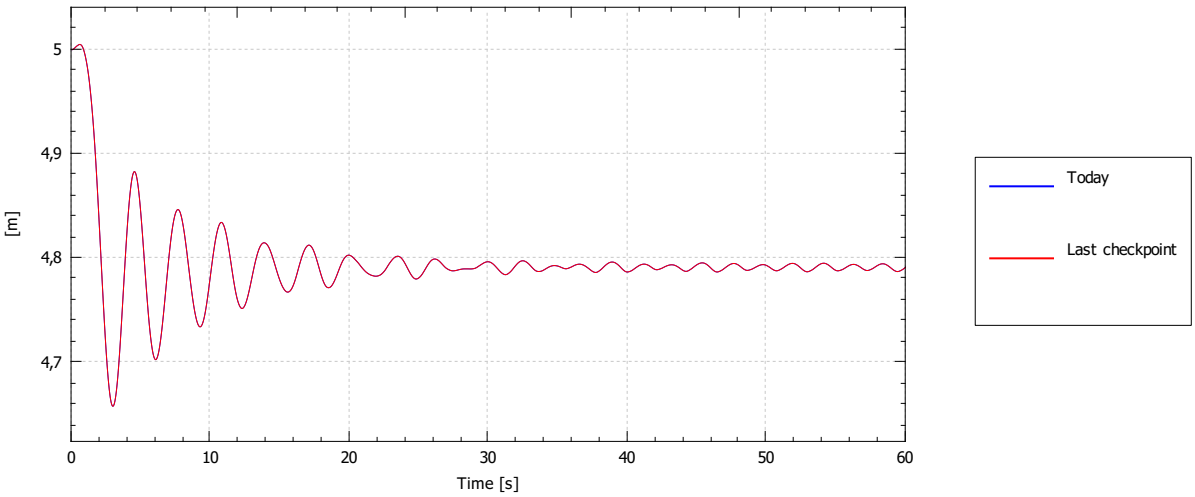


**Node [Node Hub | Hub]**

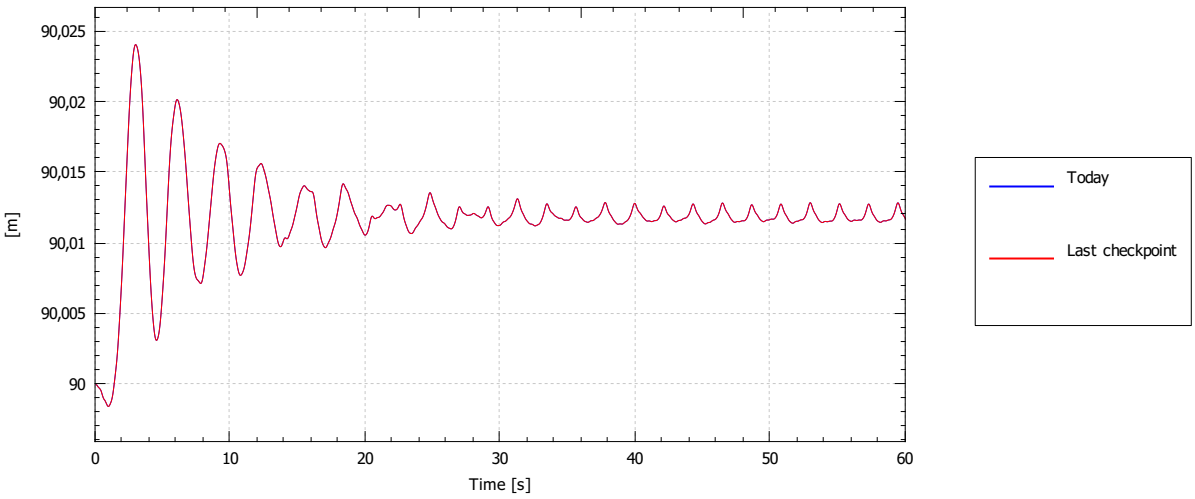
Position (x)

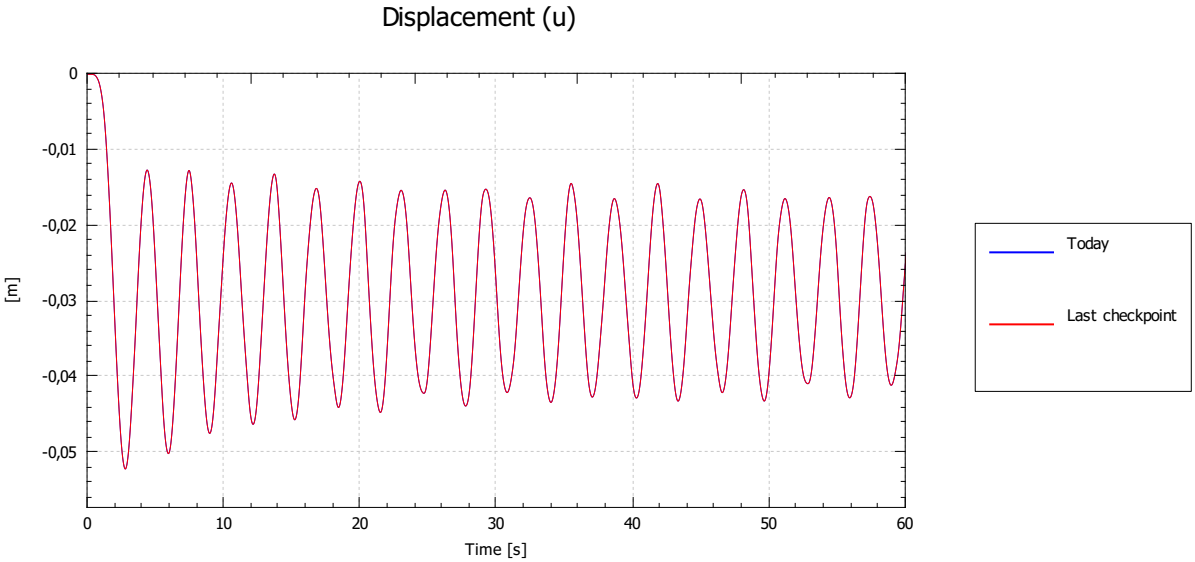


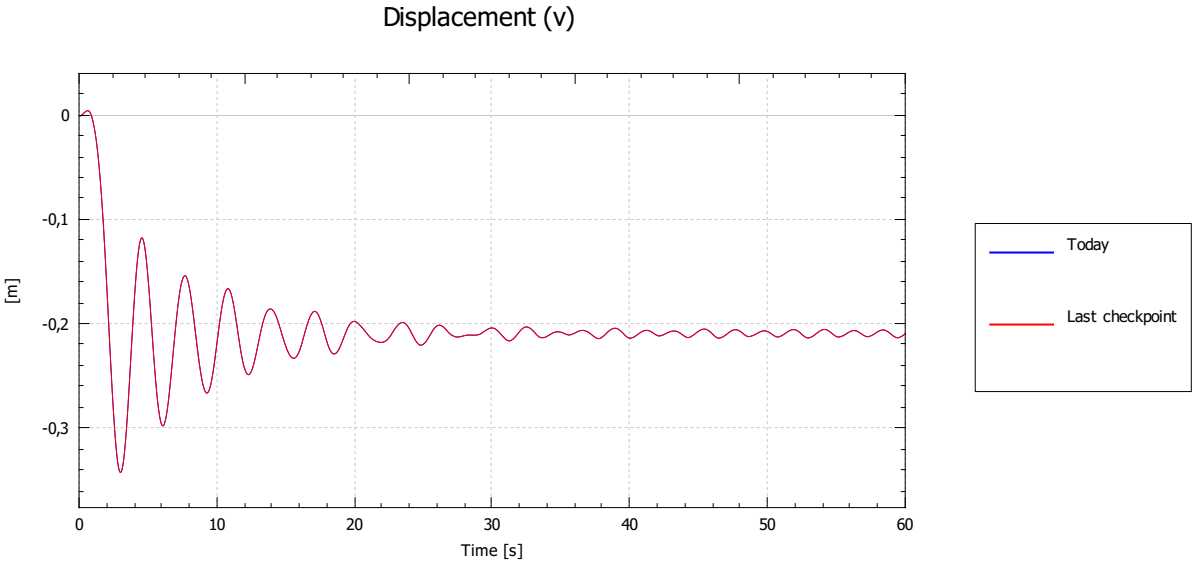

Position (y)

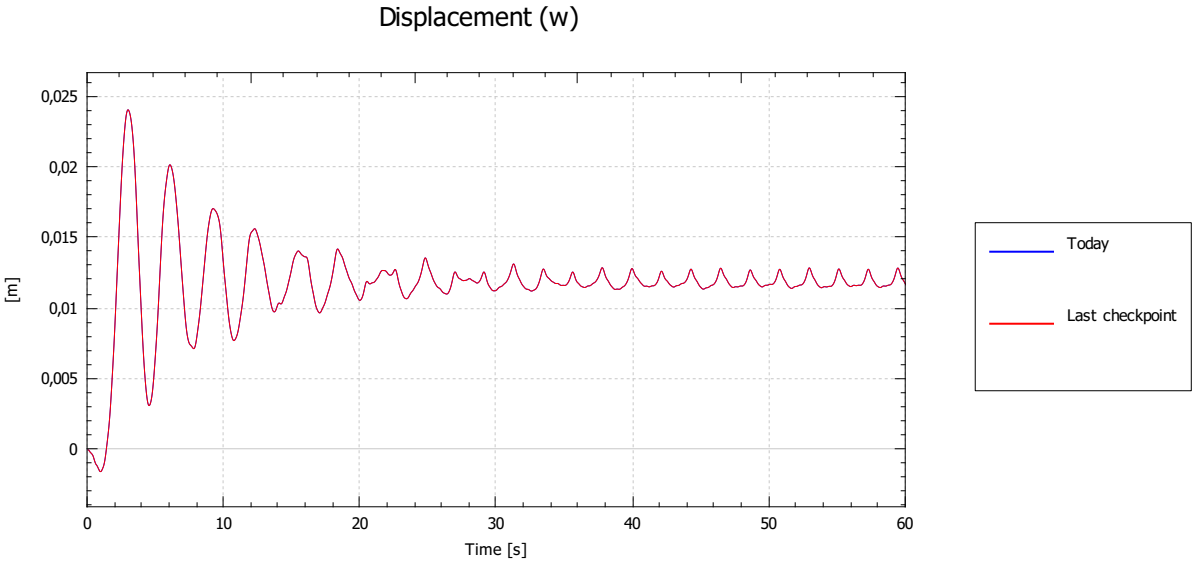



Position (z)

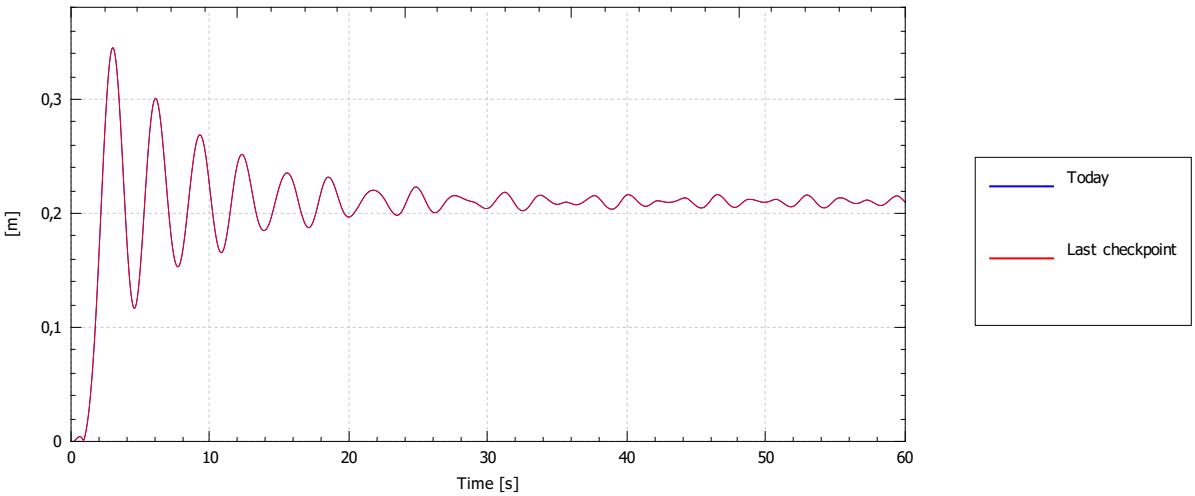



Displacement (u)
0
-0,01
-0,02
-0,03
-0,04
-0,05
[m]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint

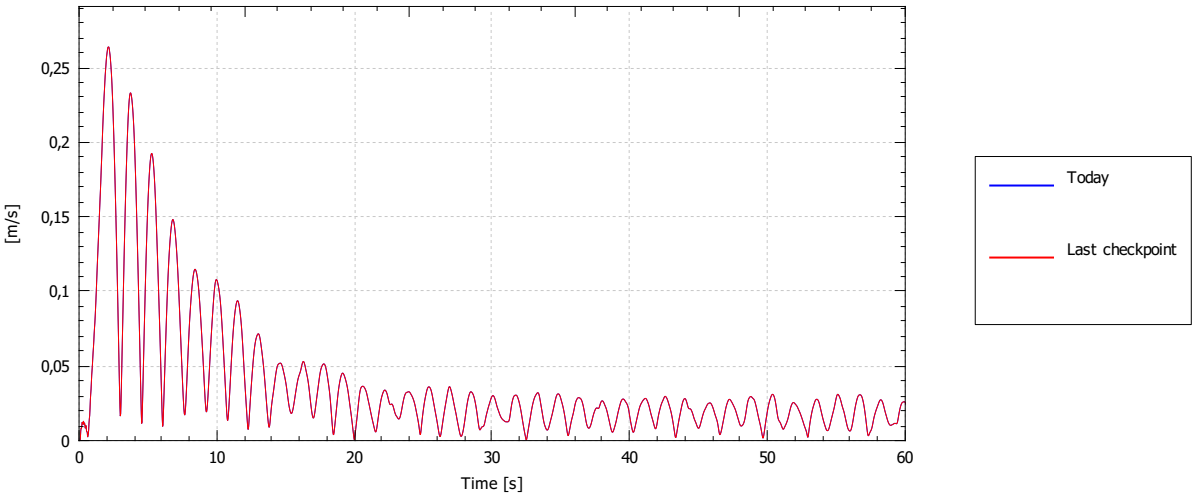

Displacement (v)
0
-0,1
-0,2
-0,3
[m]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint


Displacement (w)
0,025
0,02
0,015
0,01
0,005
0
[m]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint

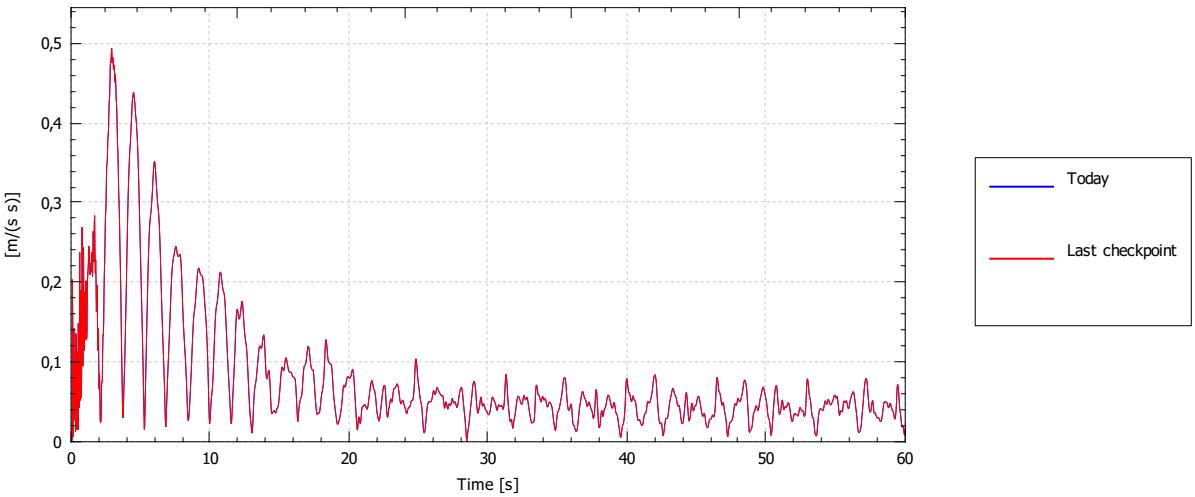
Displacement magnitude



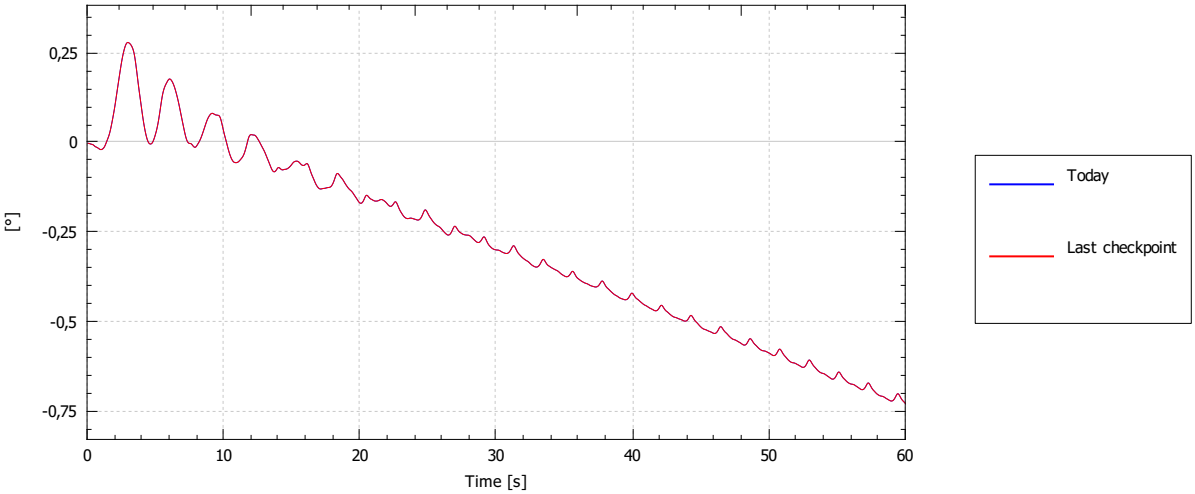

Speed



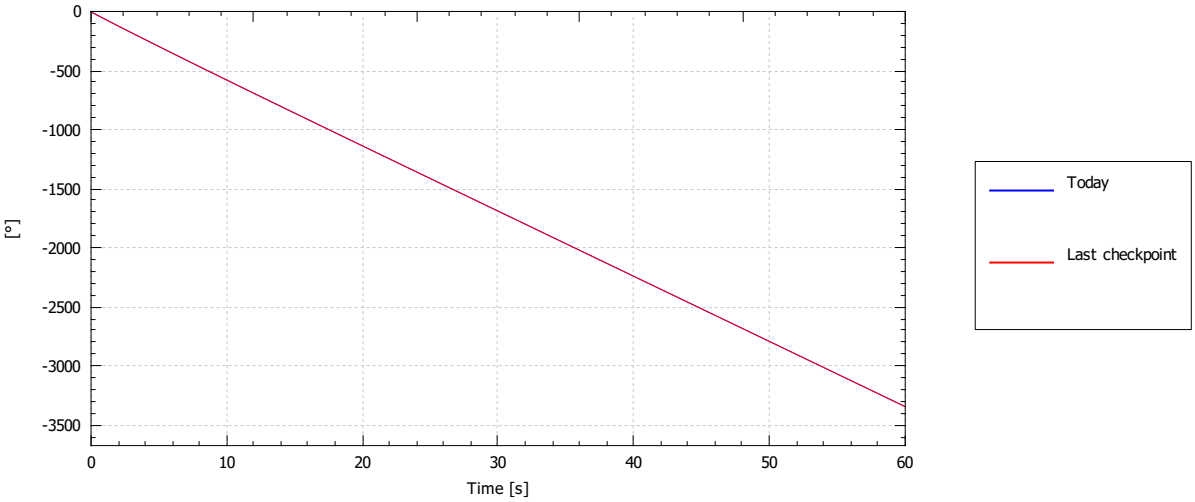

Acceleration, magnitude



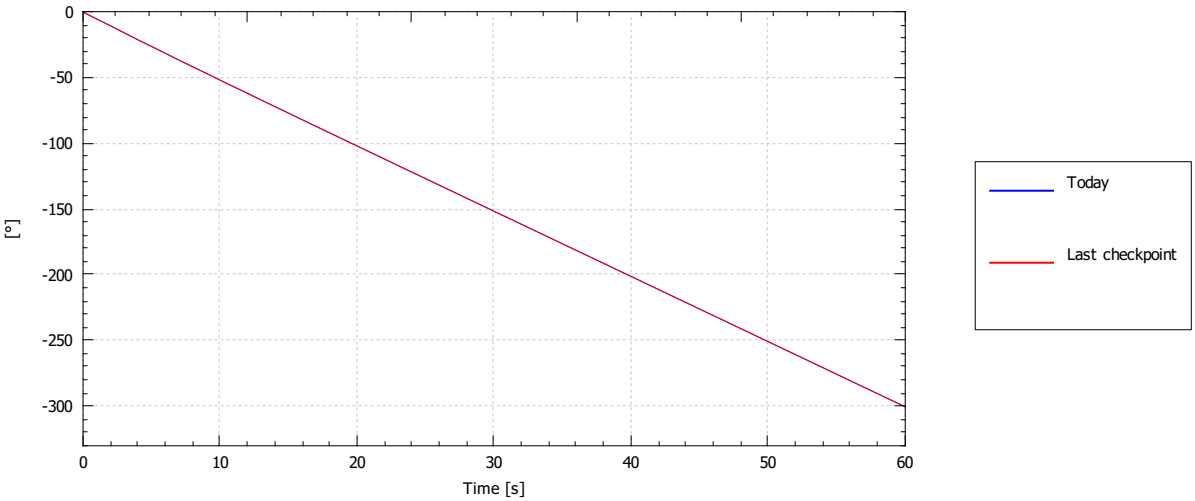
Rotational displacement (ru)



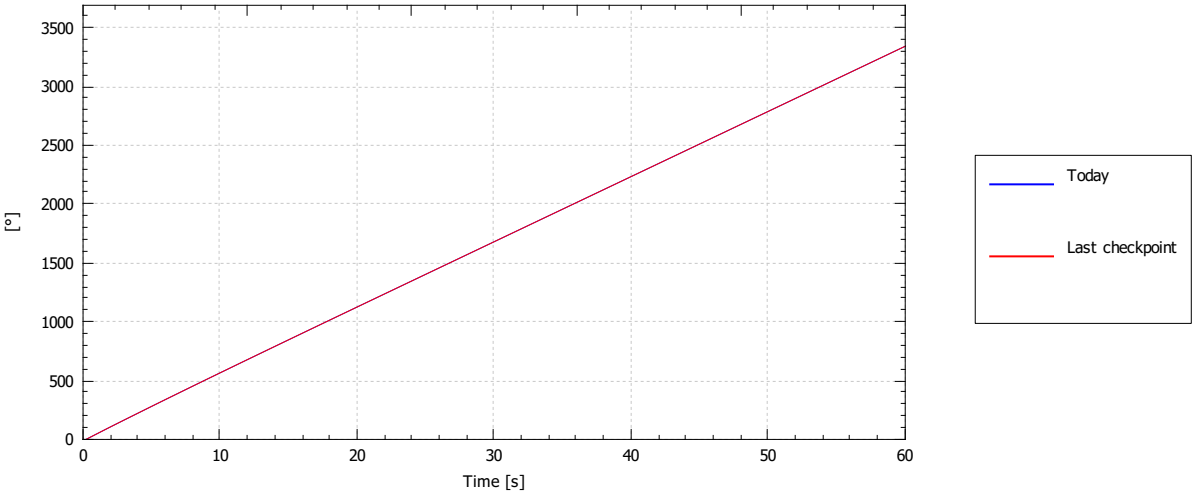

Rotational displacement (rv)



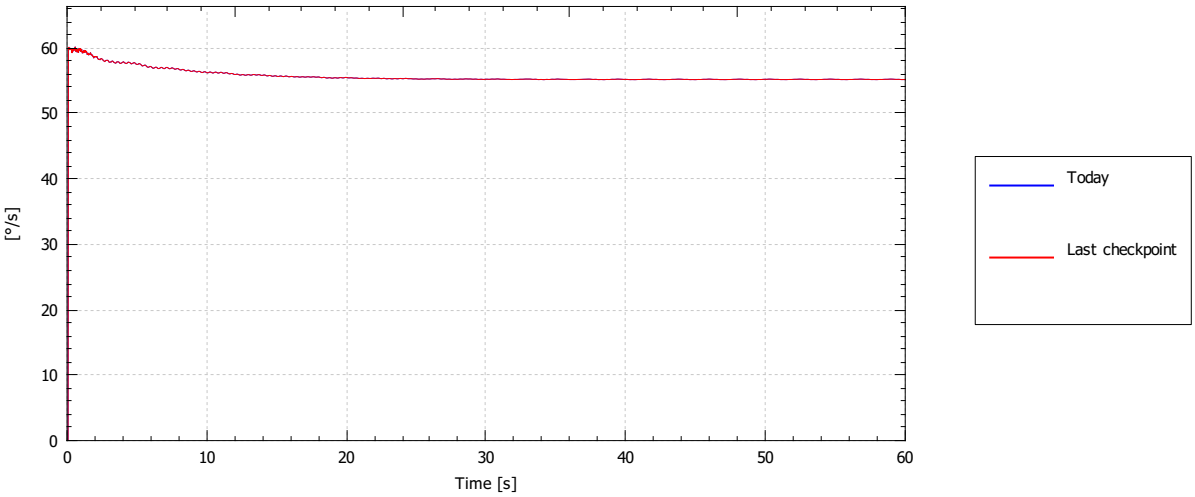

Rotational displacement (rw)



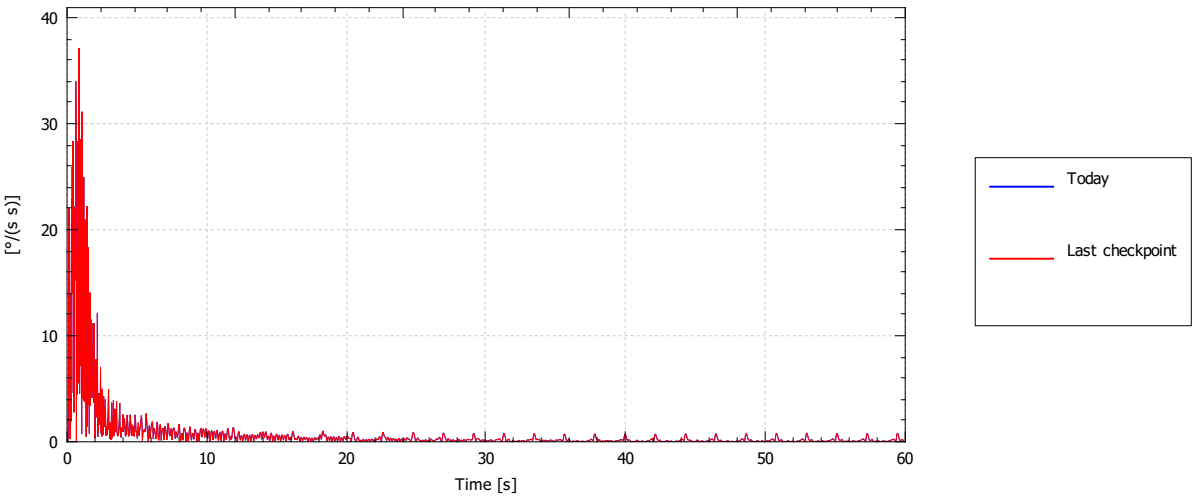
Rotational displacement magnitude



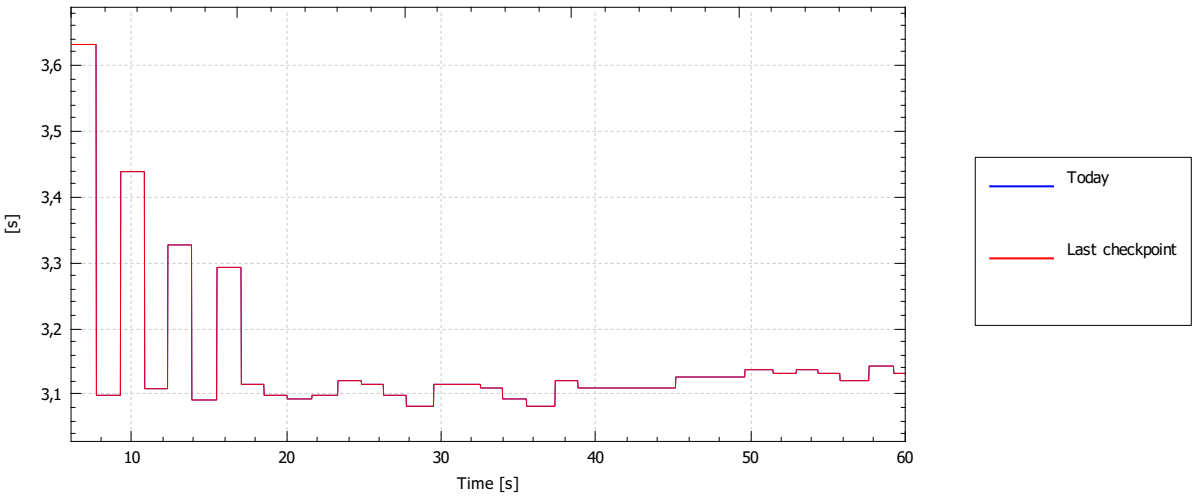

Rotational speed



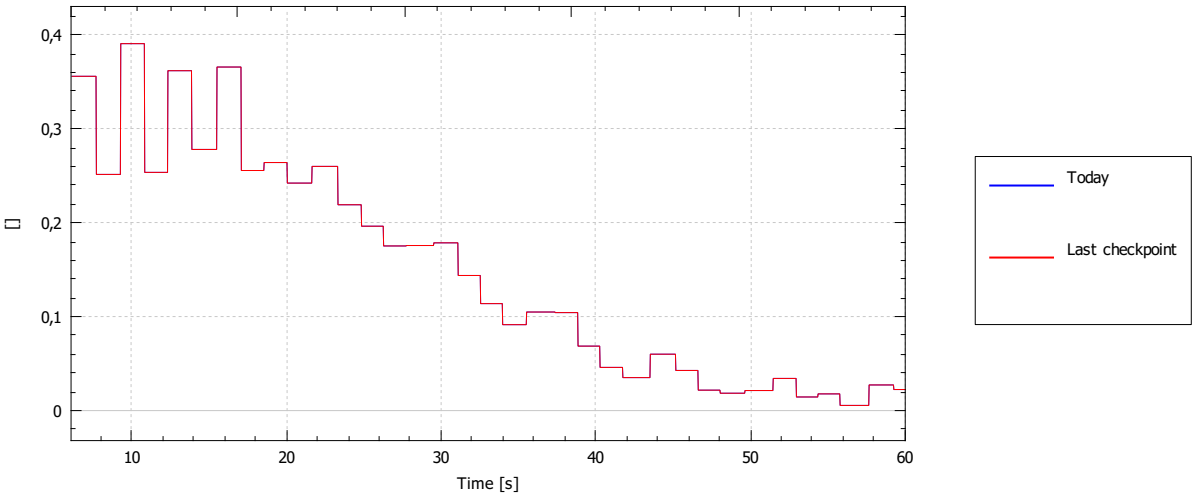

Rotational acceleration mag



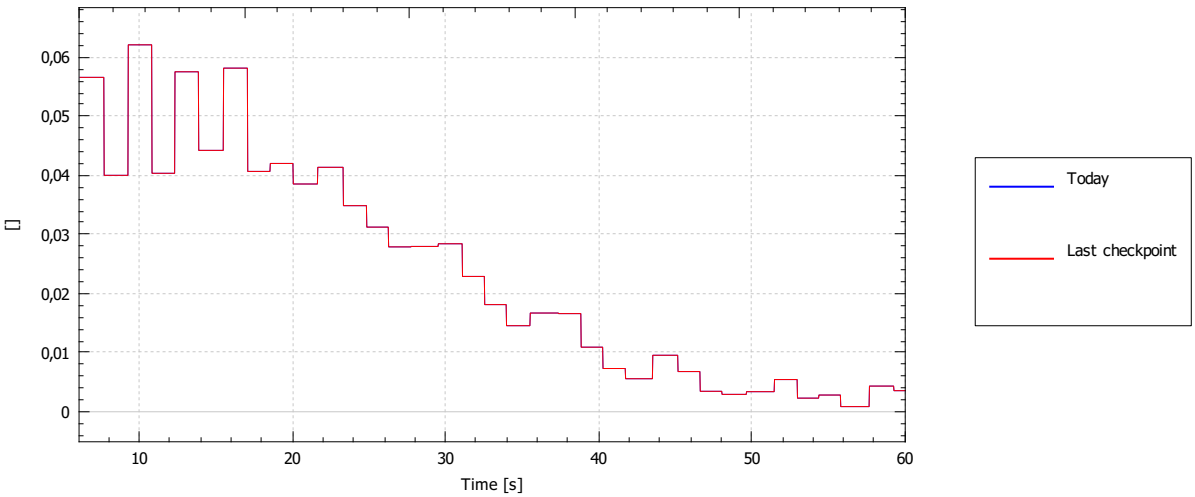
## Displacement period




## Displacement logarithmic decrement

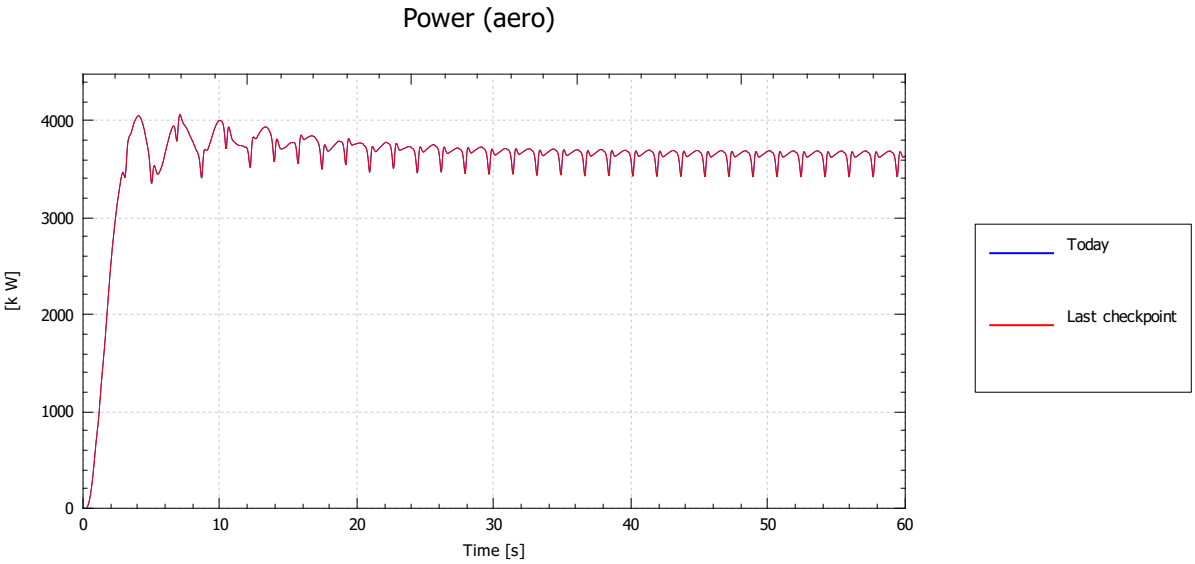


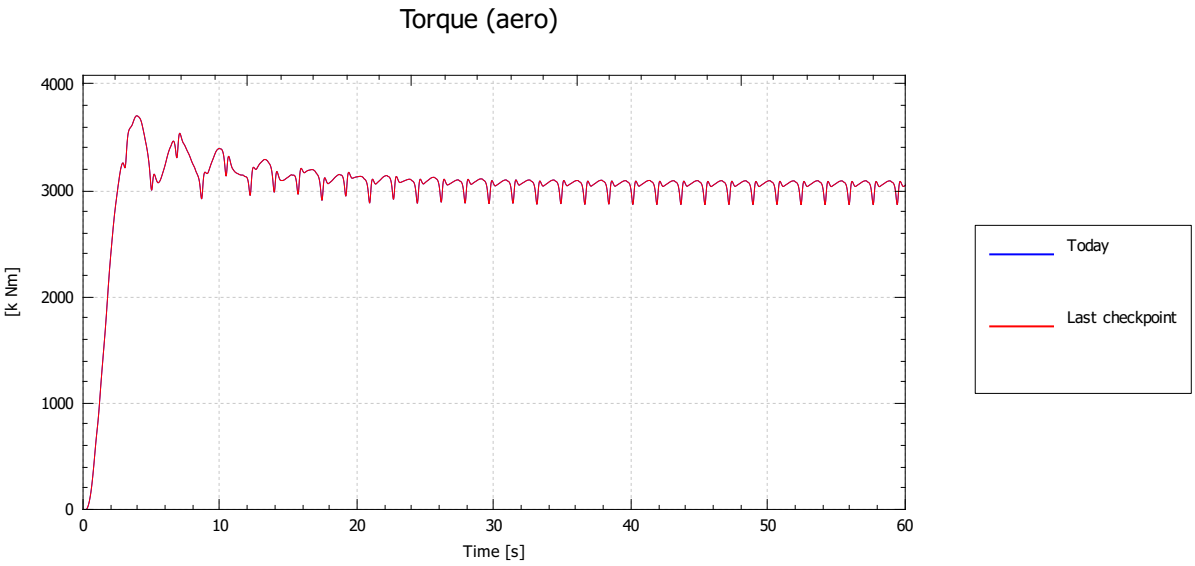

## Displacement damping ratio



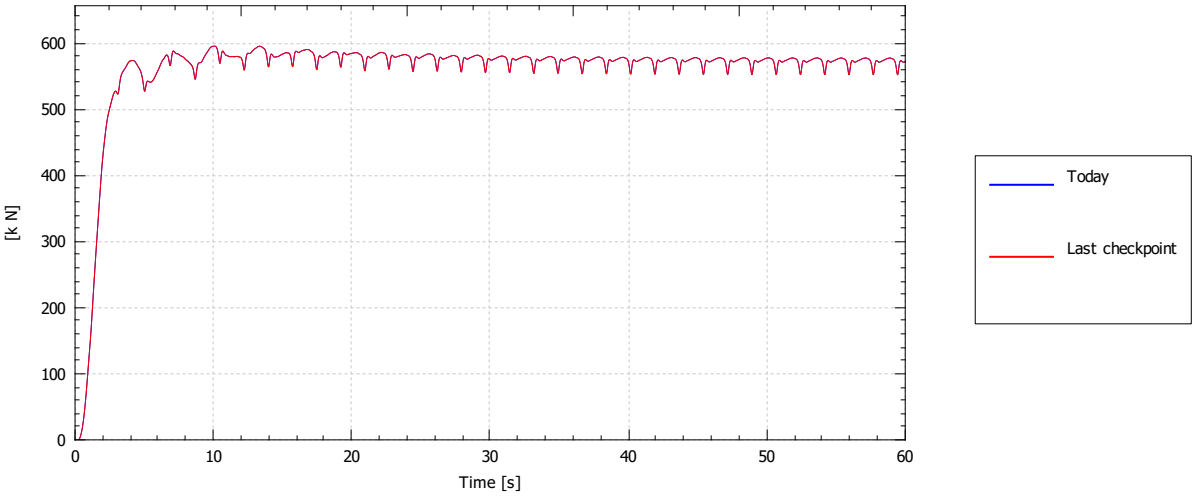
**Load case: shear**

**Rotor**

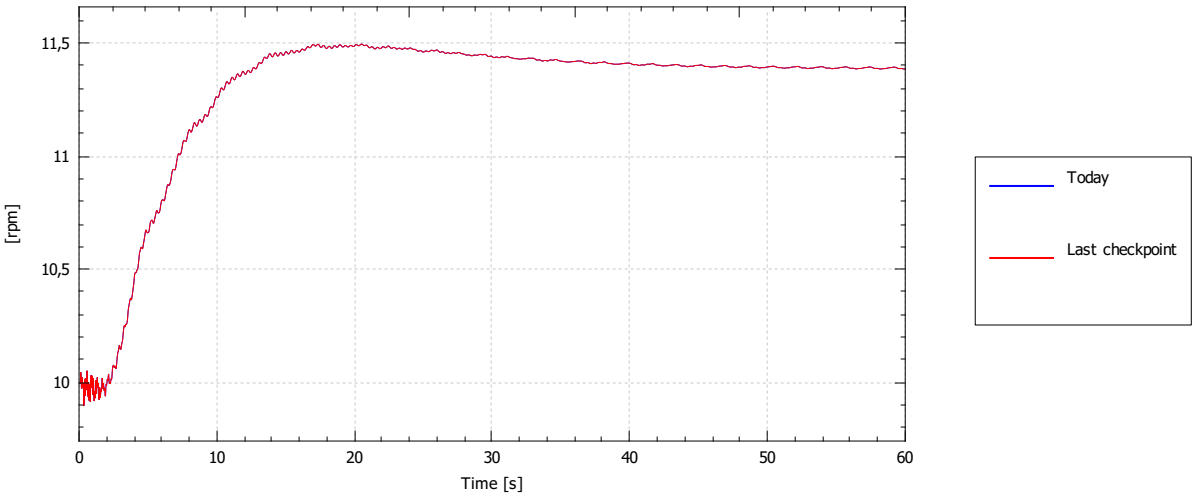


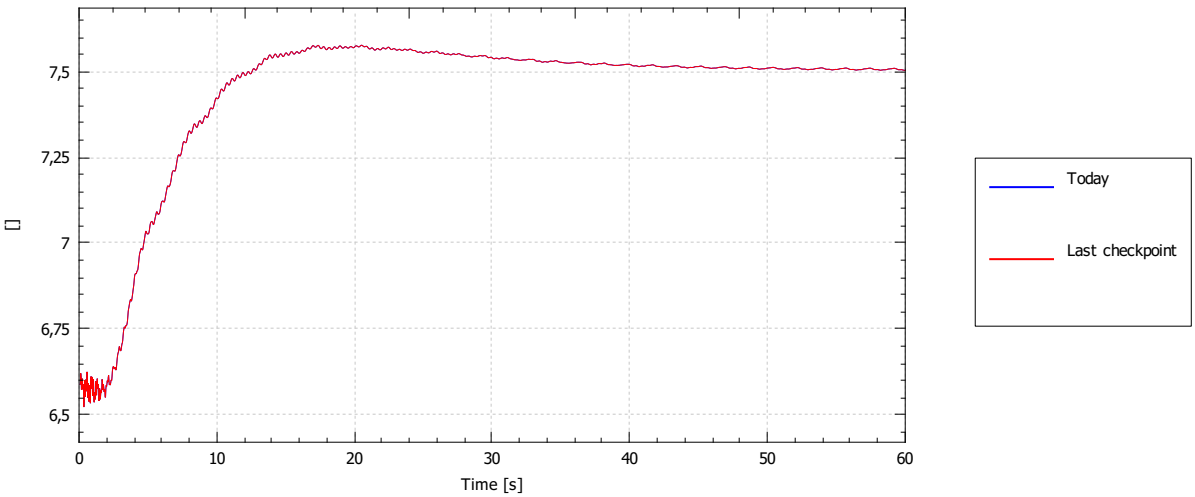
## Thrust (aero)



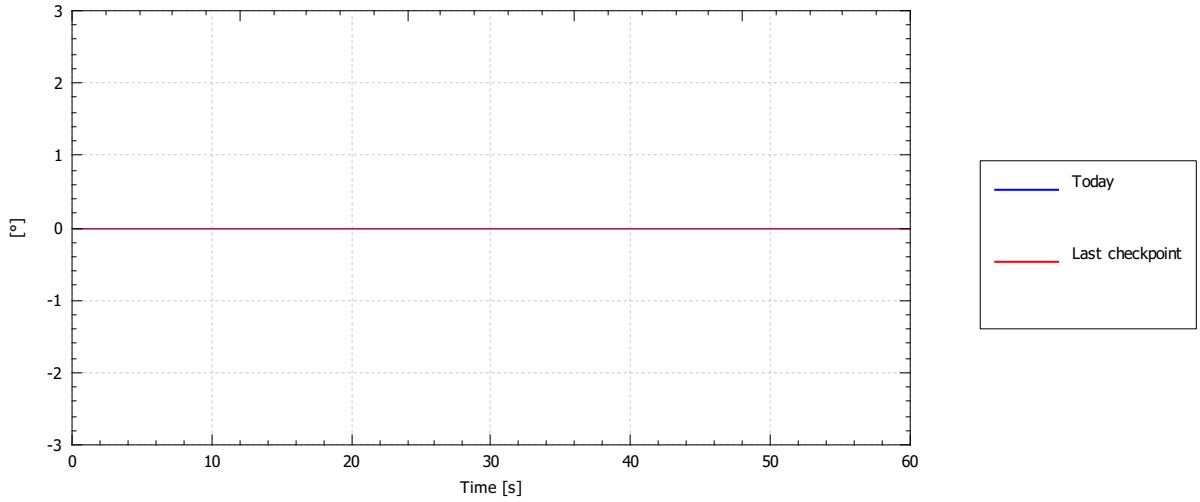

## RPM



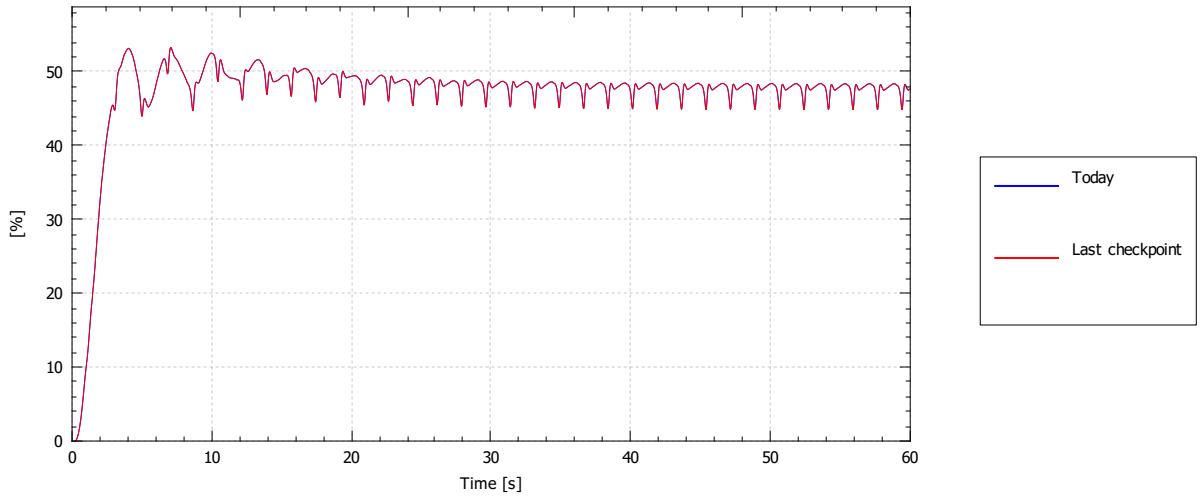

## TSR



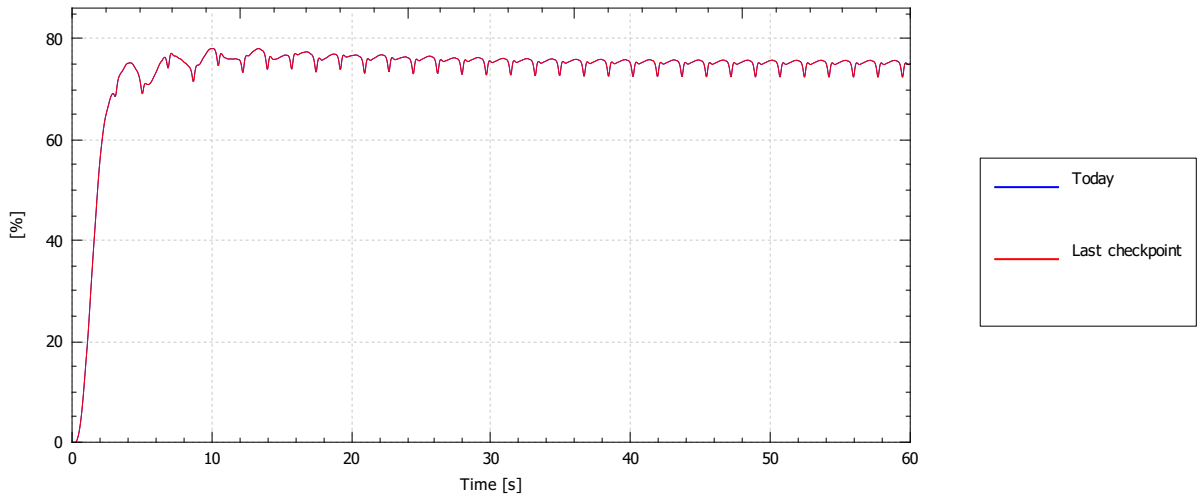
Representative demanded pitch angle



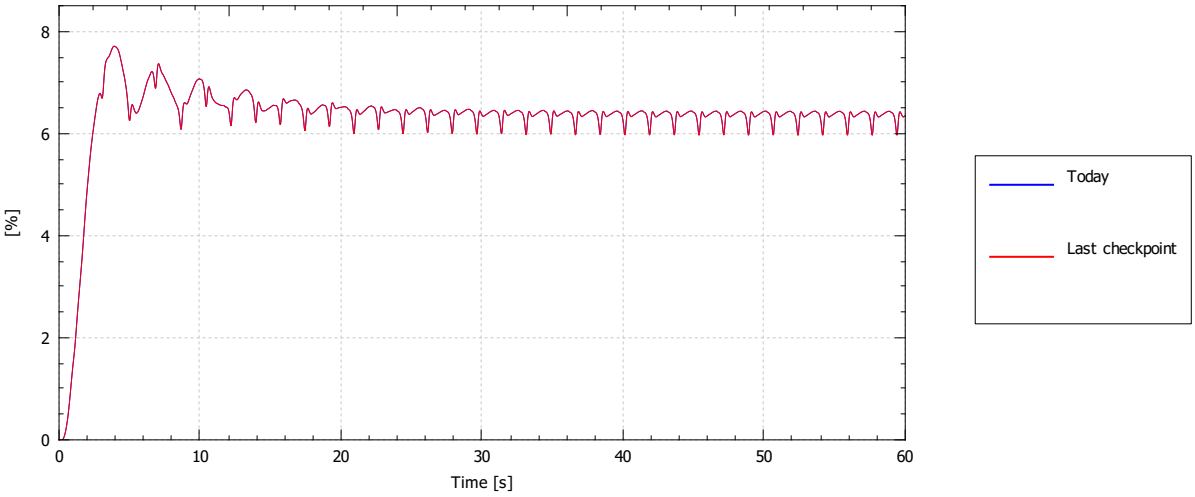

Power coef. (CP)



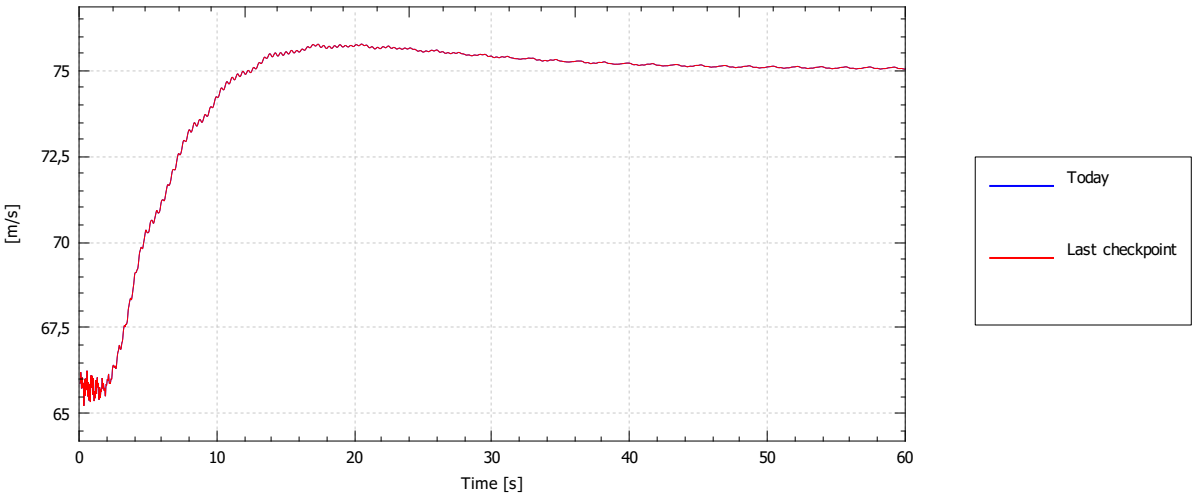

Thrust coef. (CT)



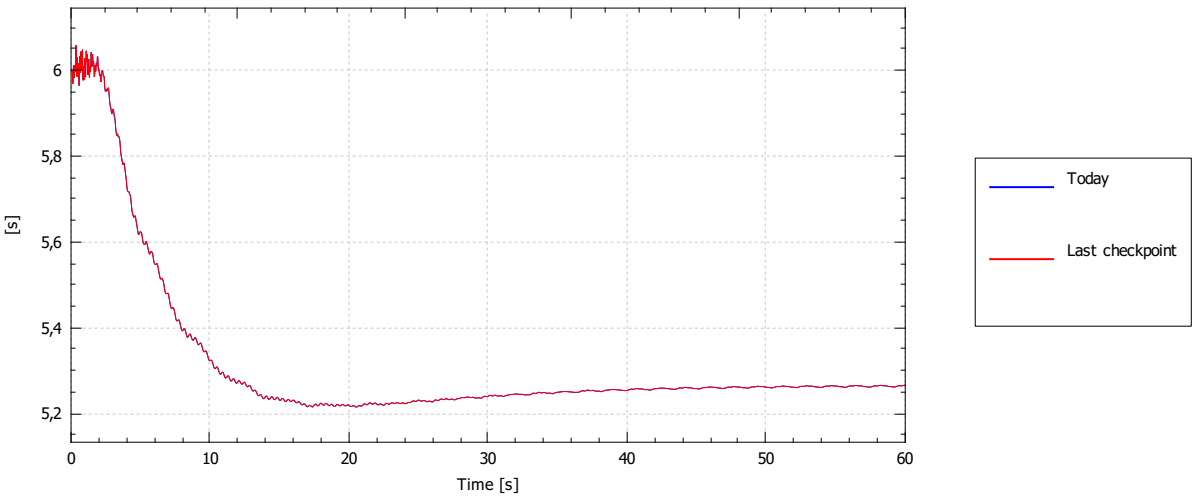
## Torque coef. (CQ)



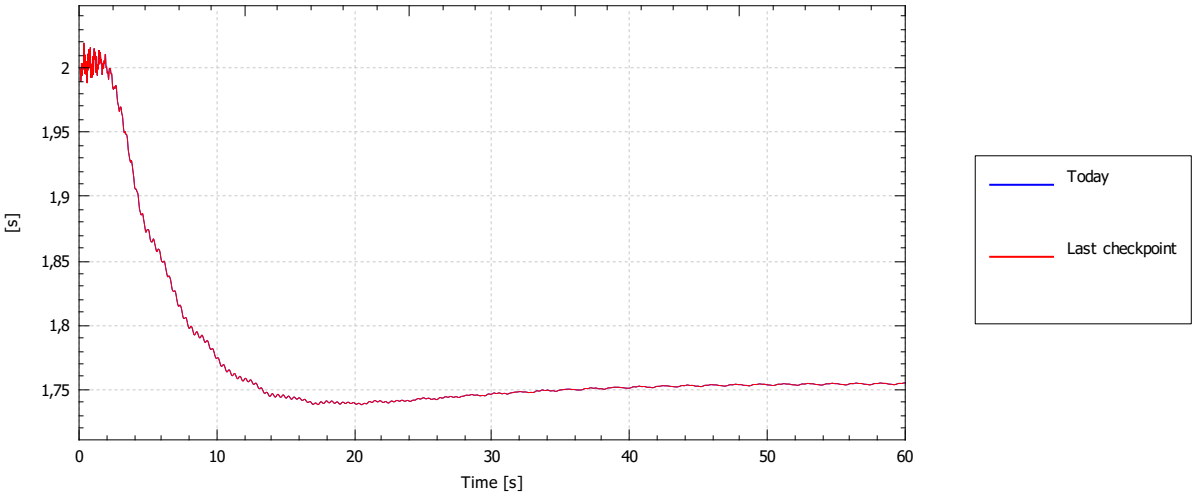

## Tip speed



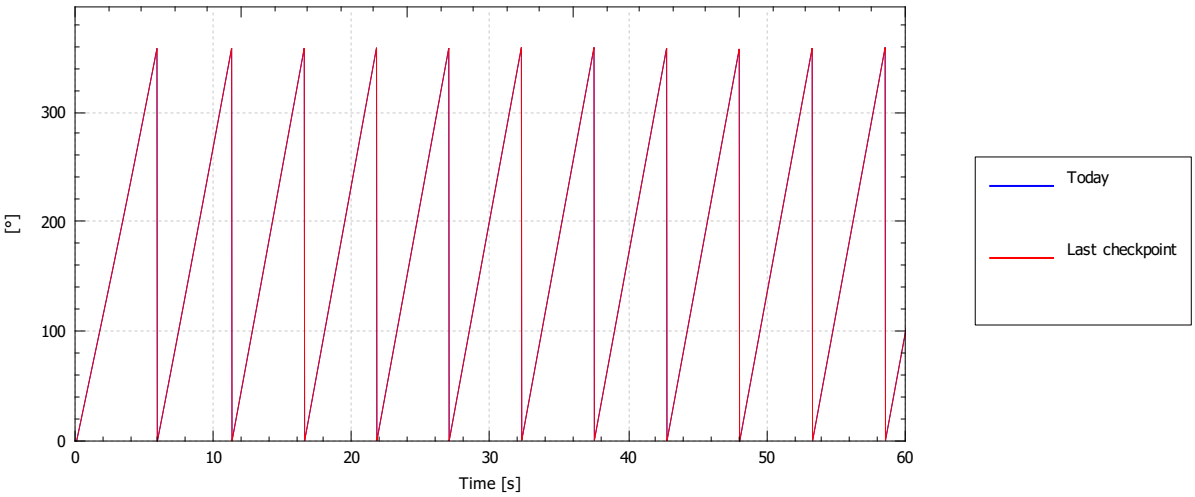

## 1P (one revolution)



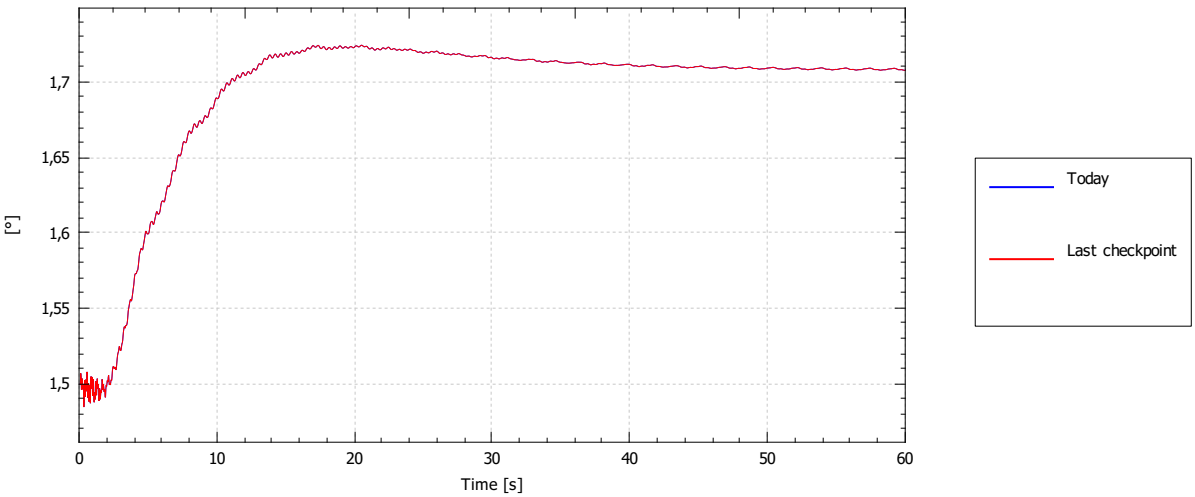
nP (blade passing)



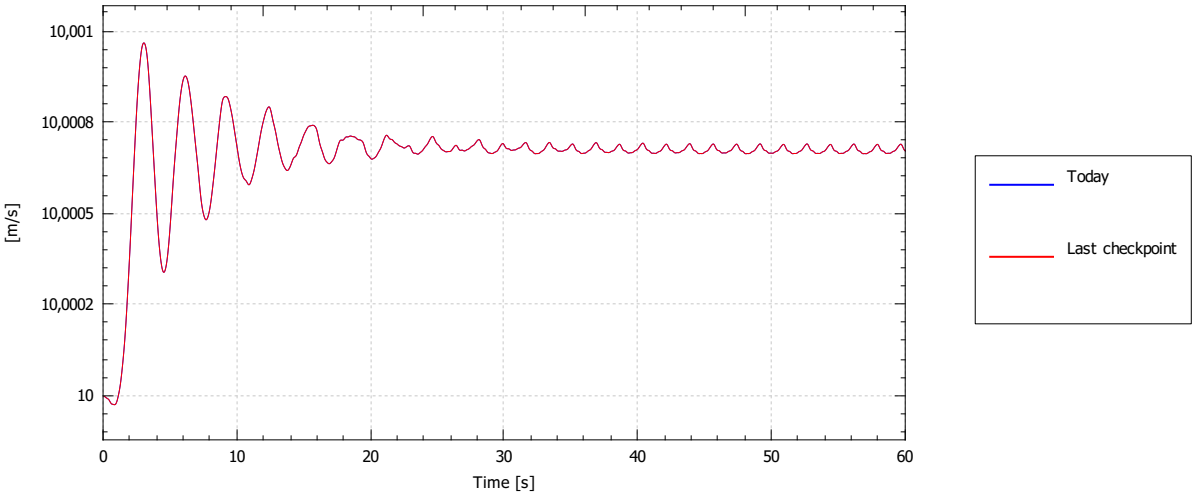

Azimuth angle



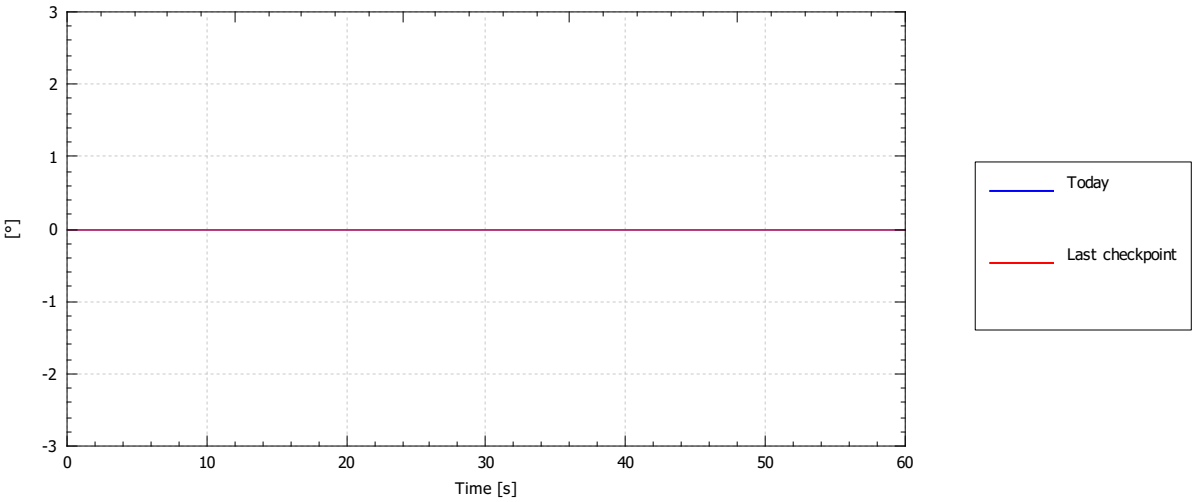

Rotation per timestep



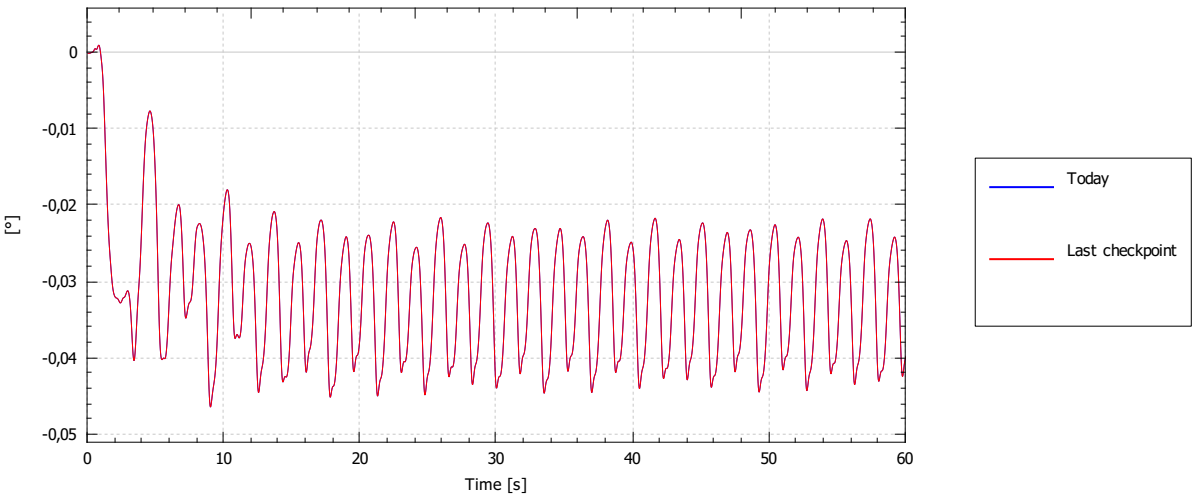
Wind speed at hub, magnitude



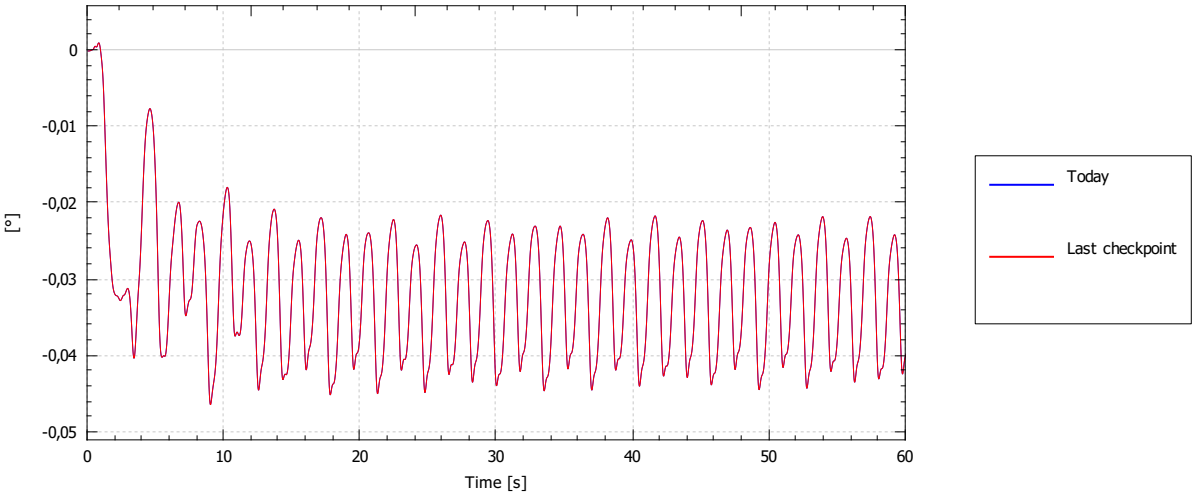

Wind angle at hub



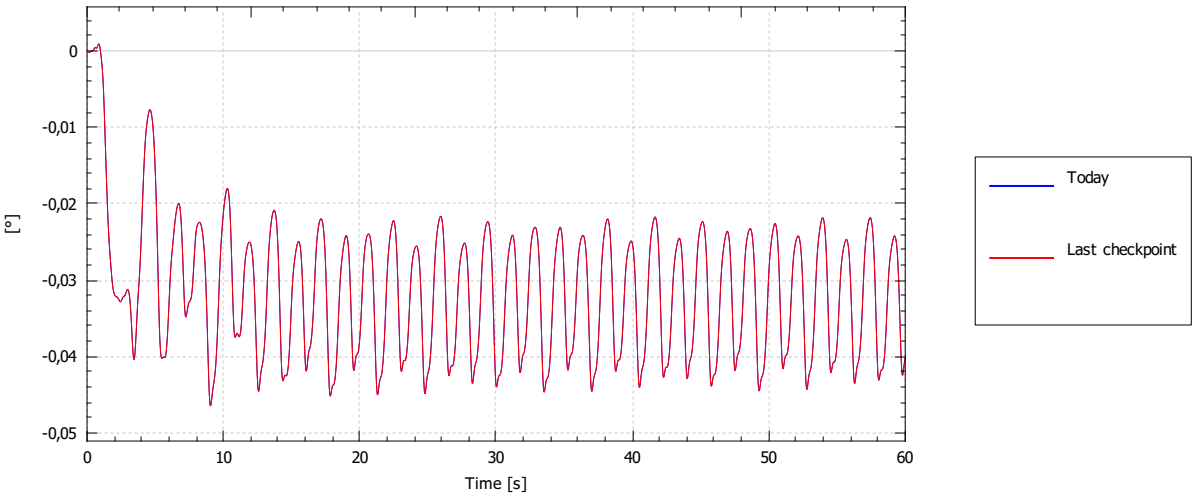

Yaw angle relative to forward



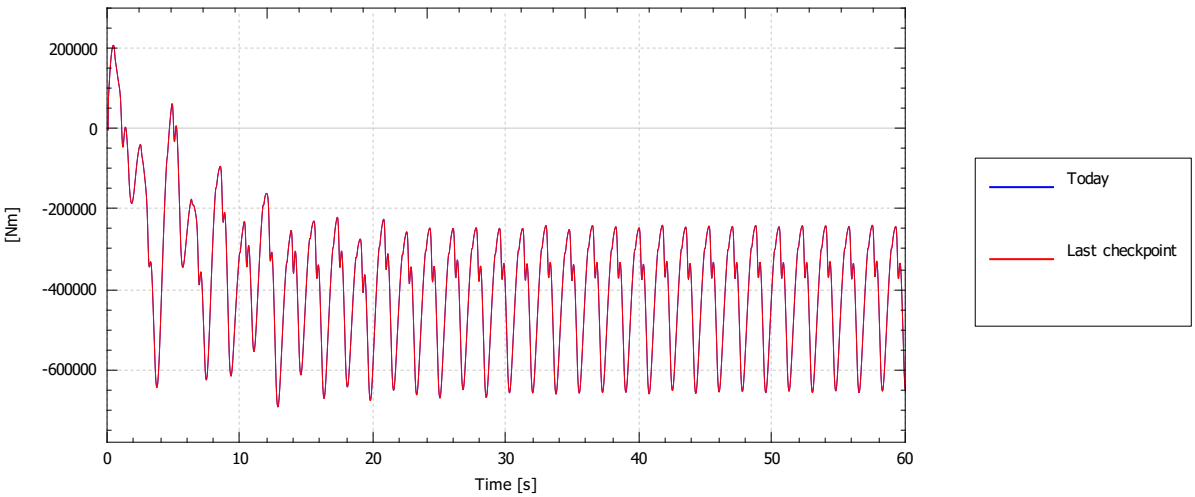
Yaw angle to reference direction




Yaw error

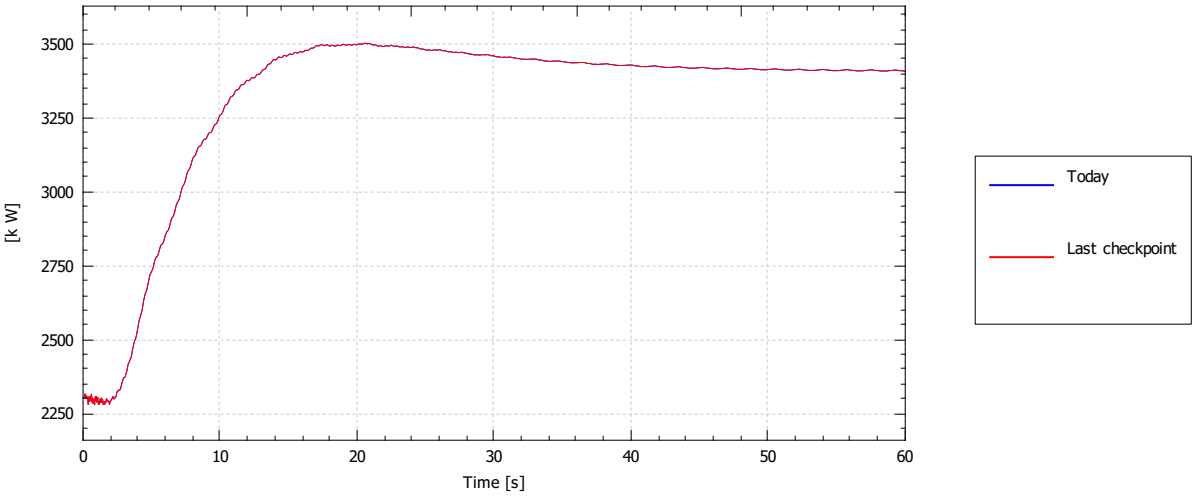



Torque about yaw axis

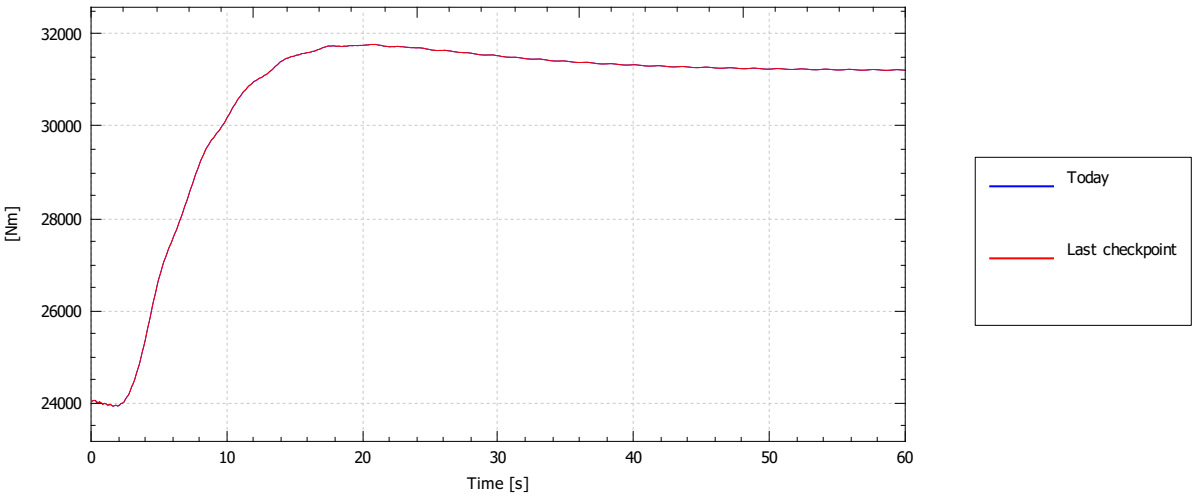


**Generator**

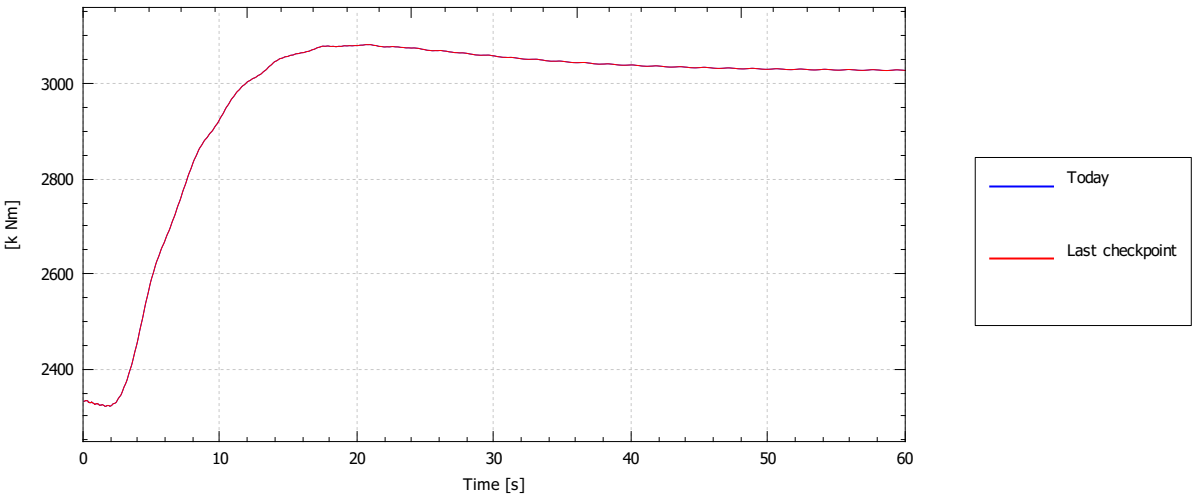
Power (electrical)



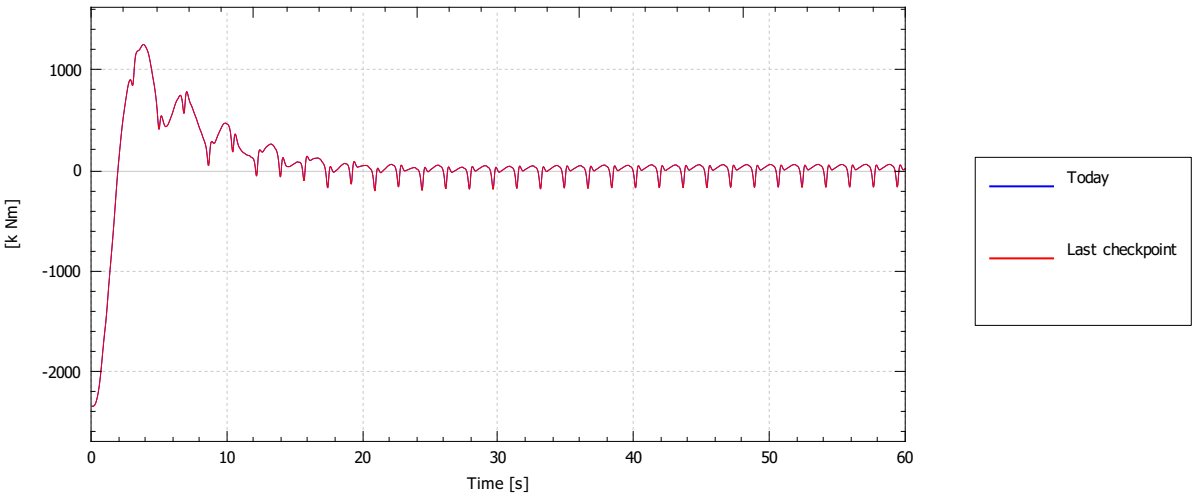

Torque



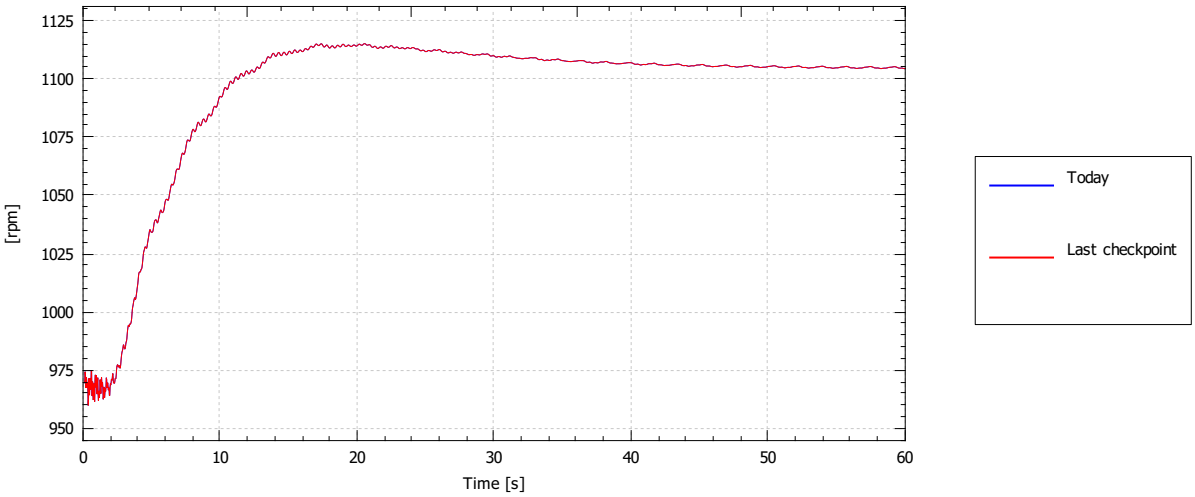

Torque on main shaft



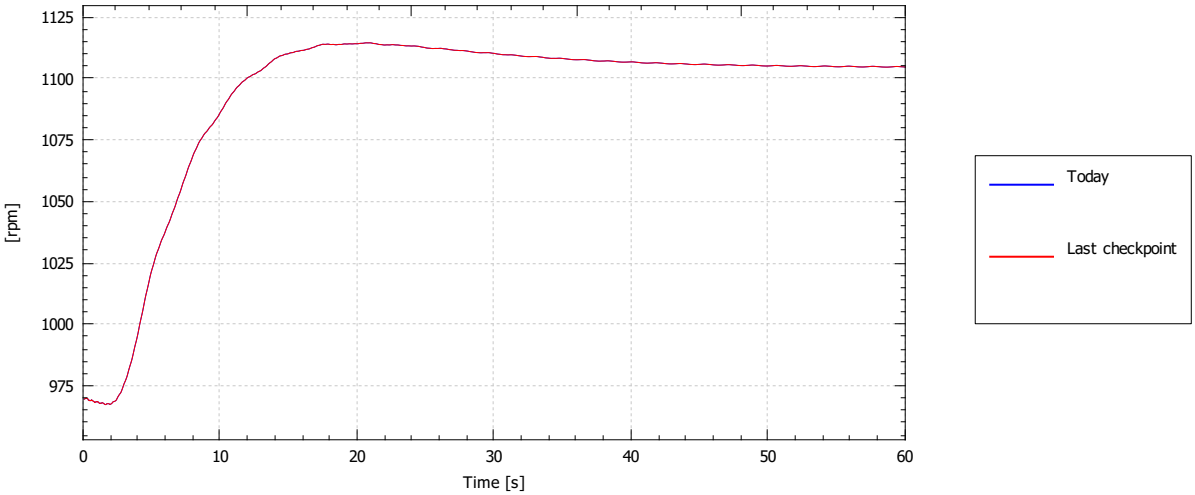
## Torque diff. on main shaft

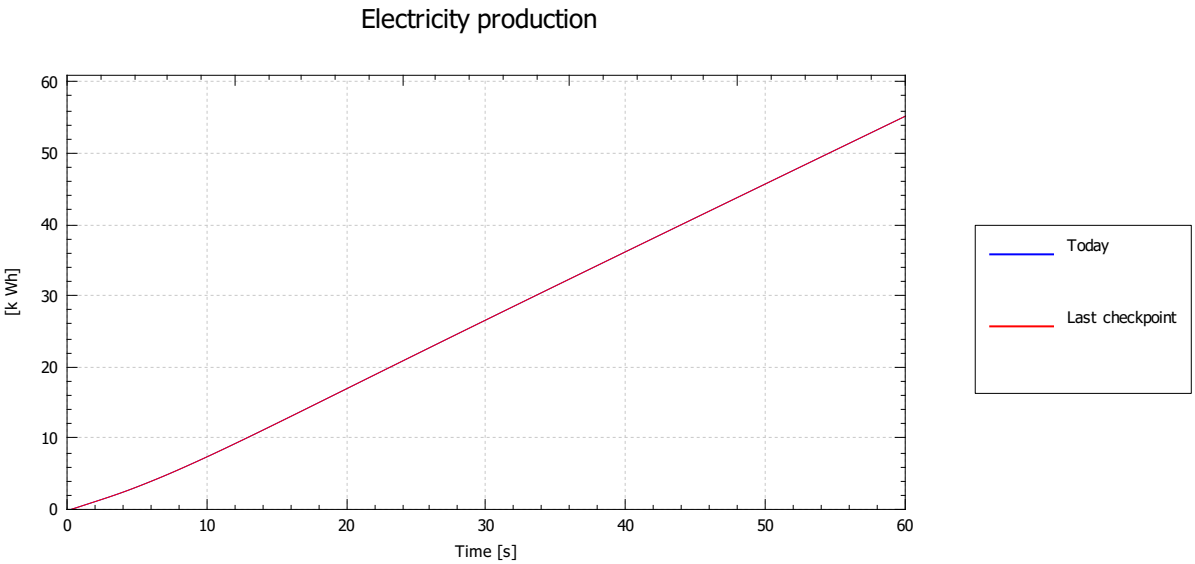


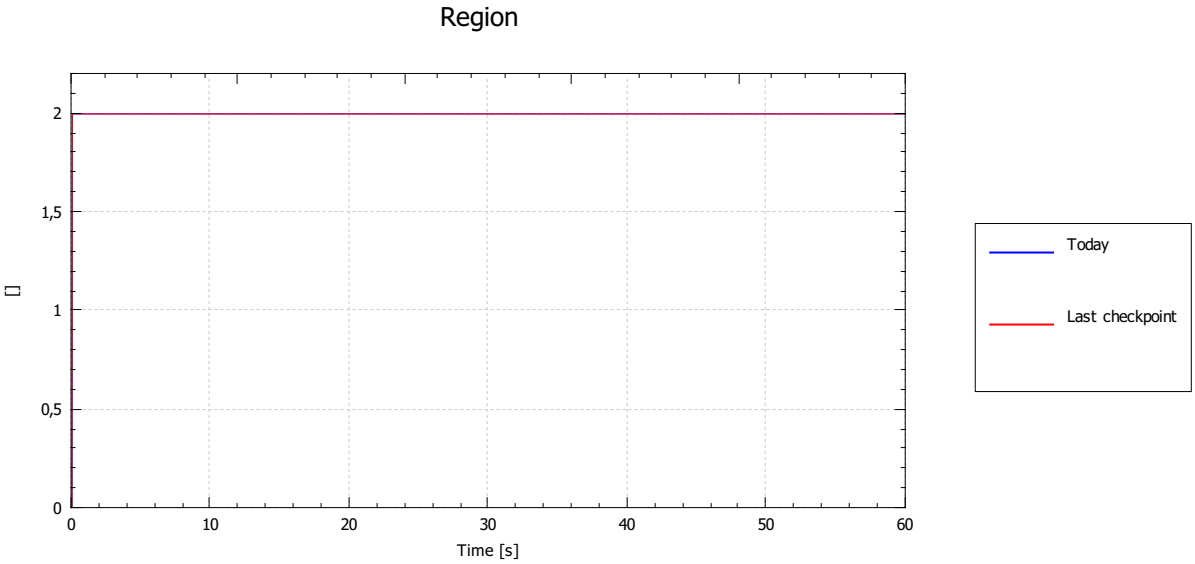

## RPM




## Filtered RPM

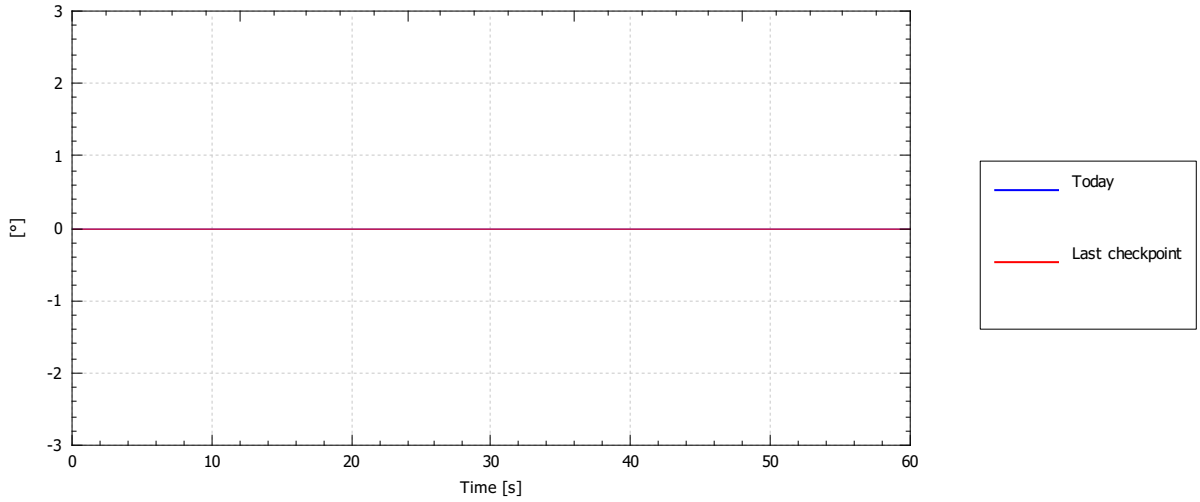




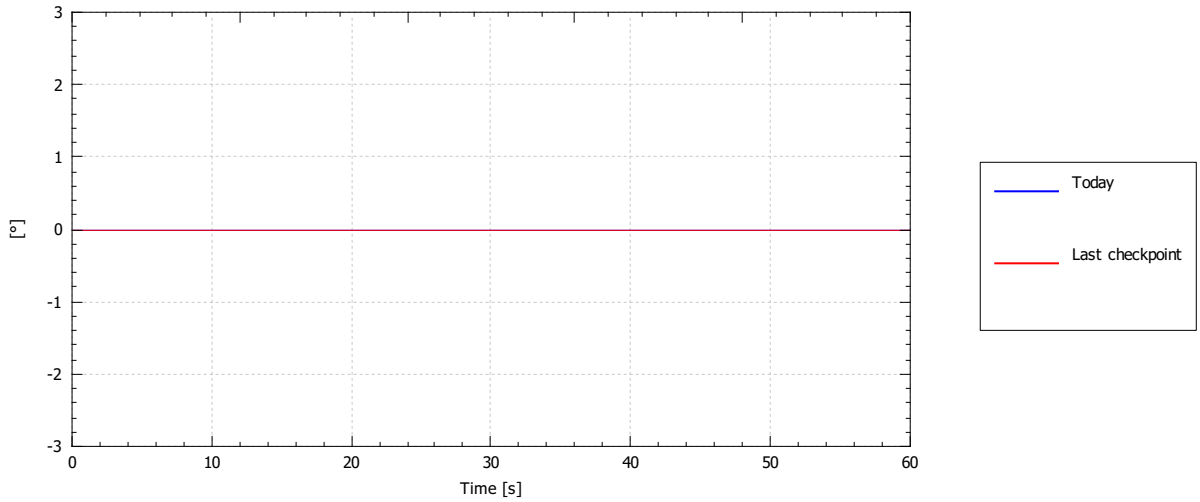




**Demanded pitch controller**

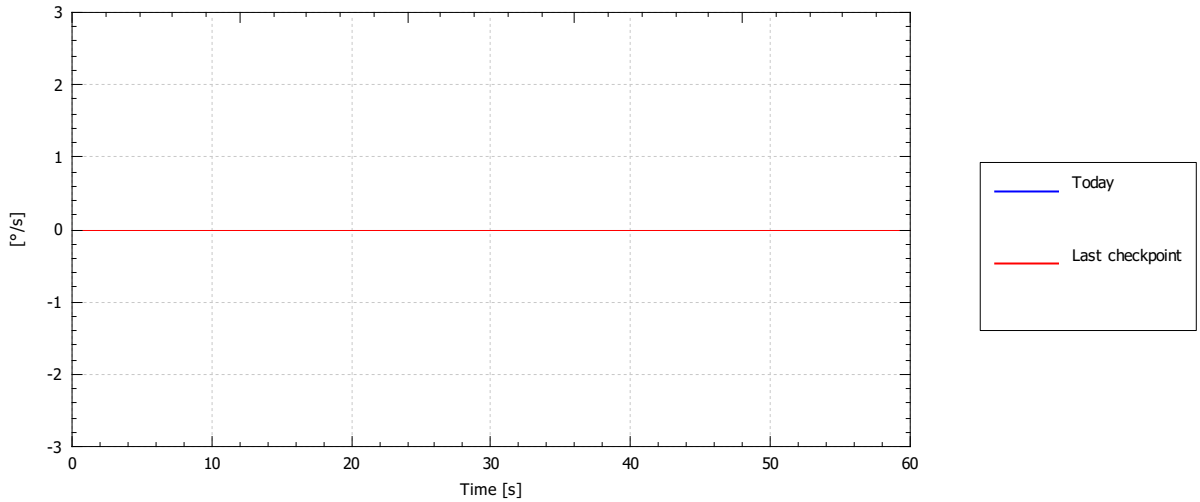
Demanded collective pitch angle



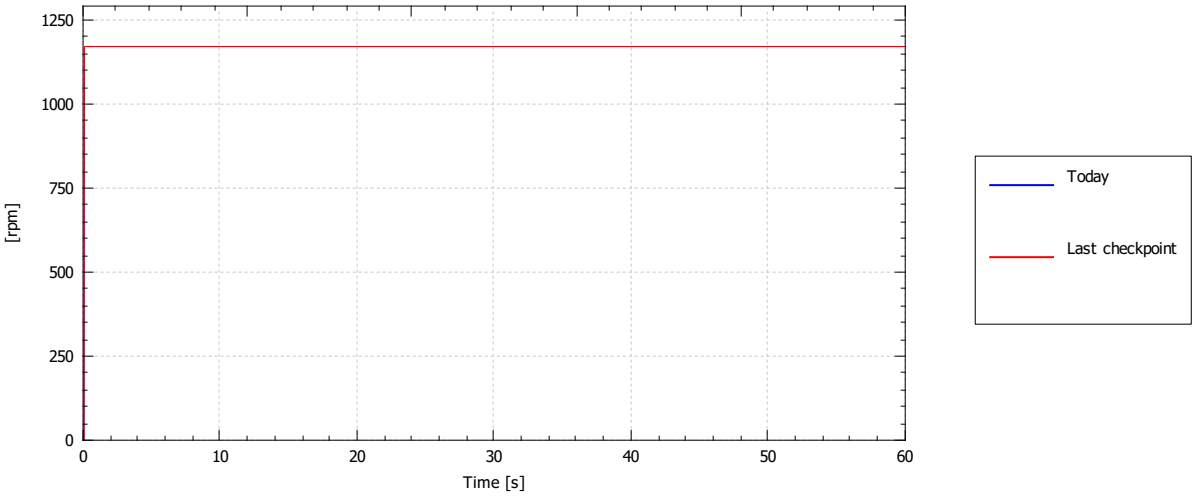

Cumulative demanded collective pitch angle



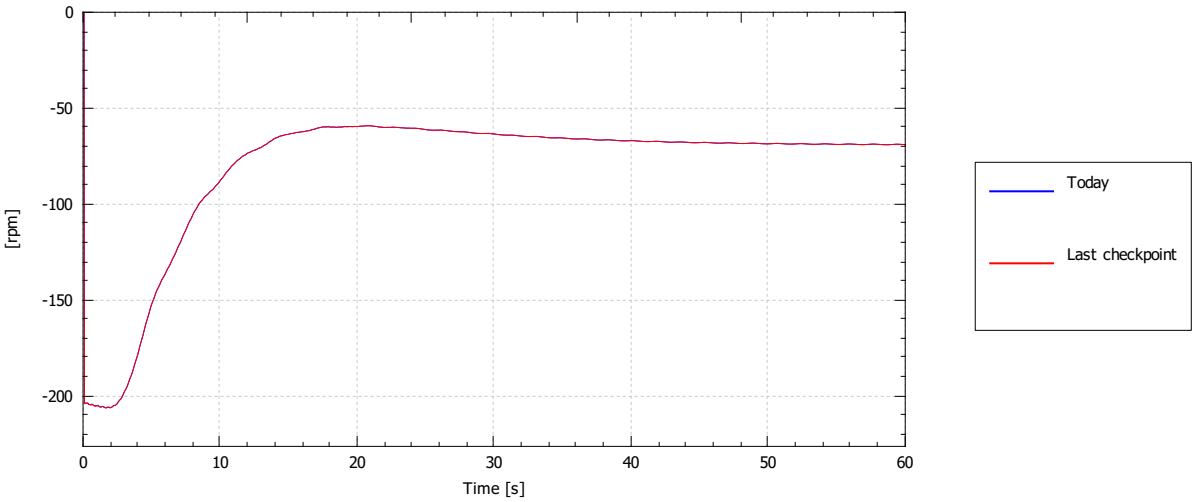

Demanded collective pitch angle rate



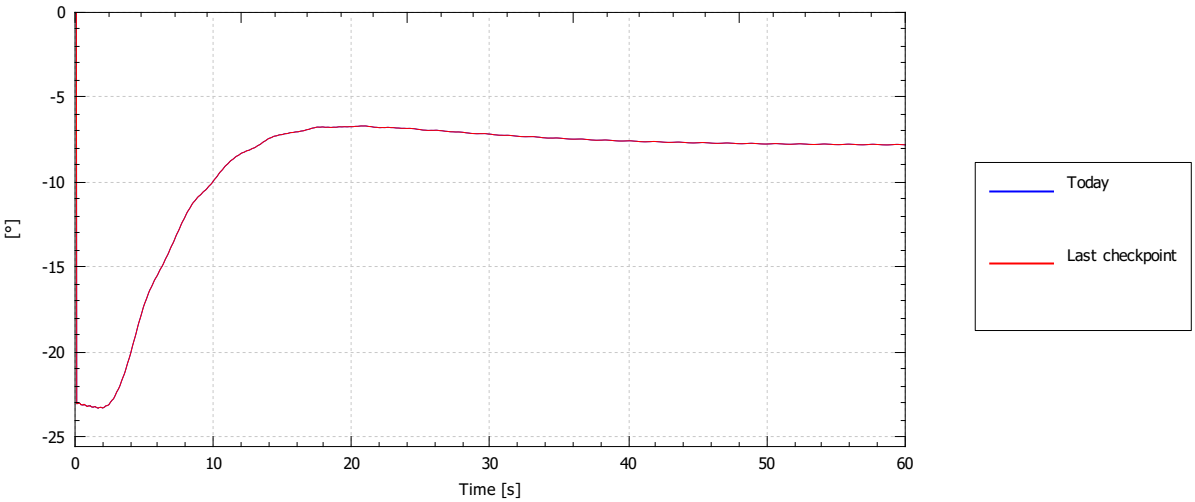
## Set point



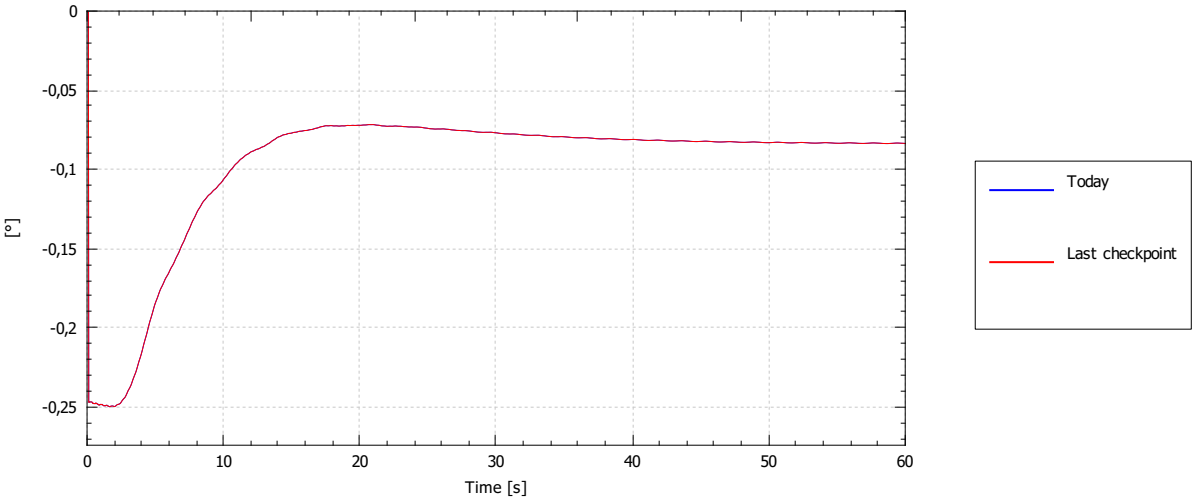

## RPM error



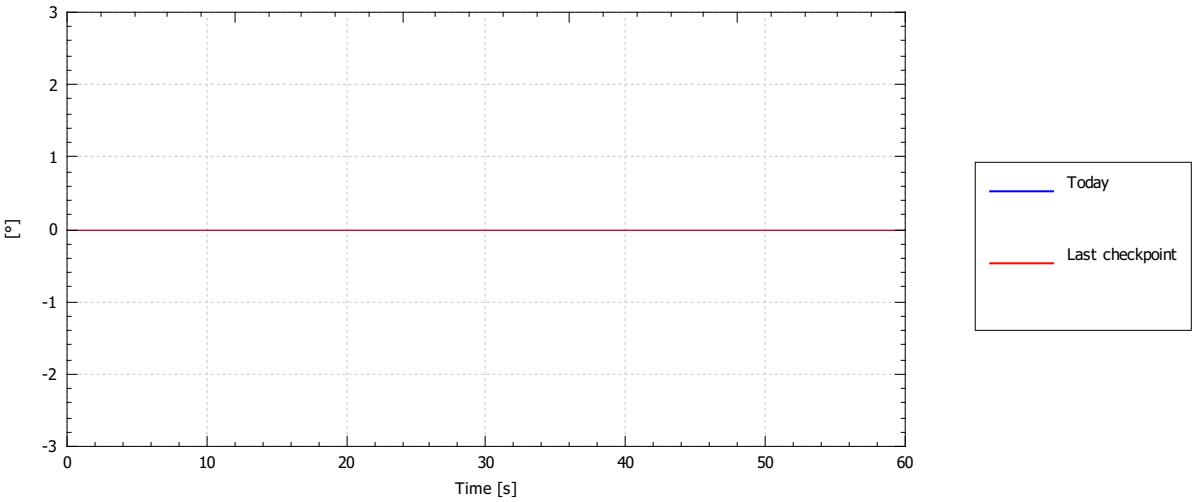

## P term



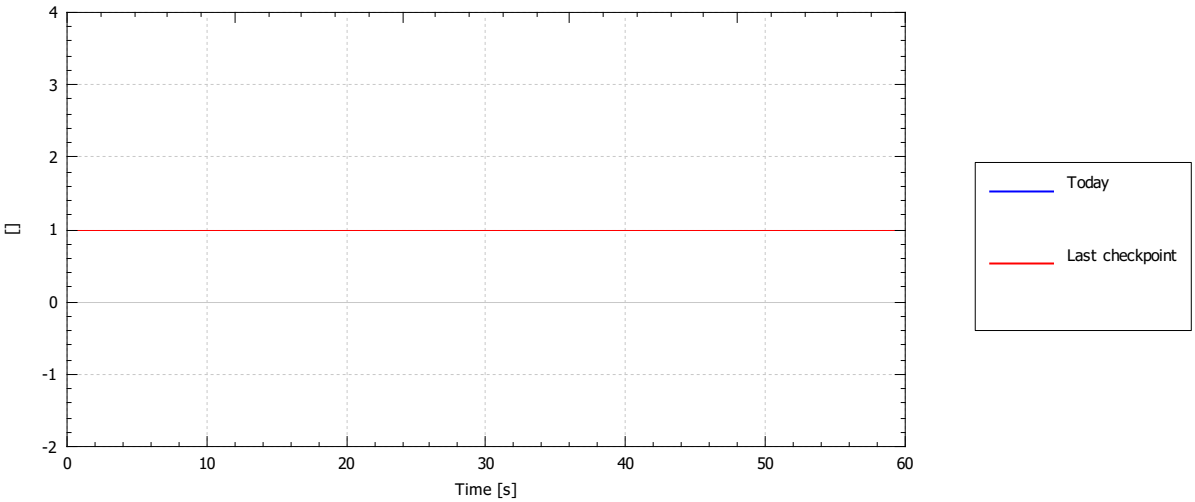
I term




D term

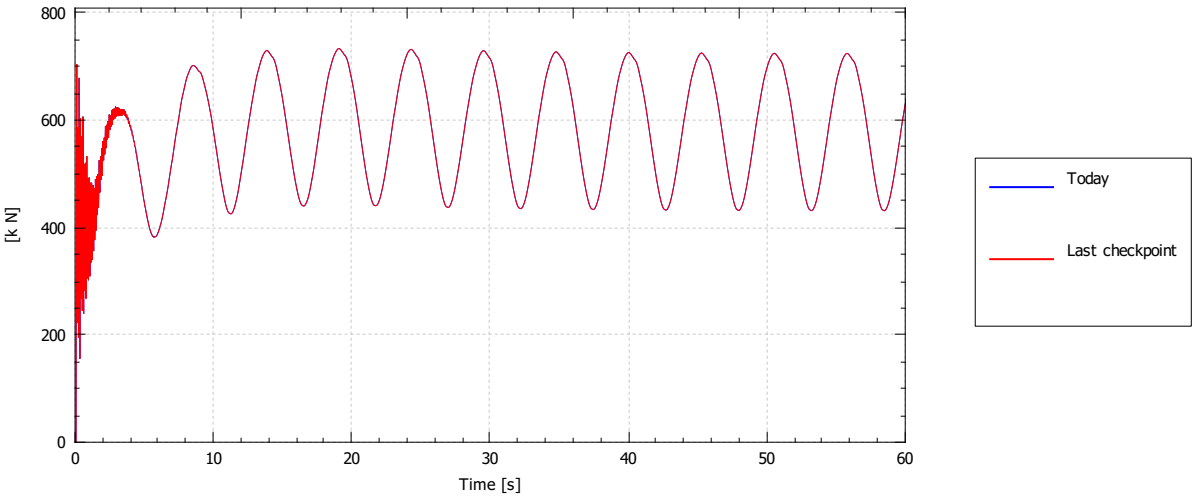



Gain scheduling factor

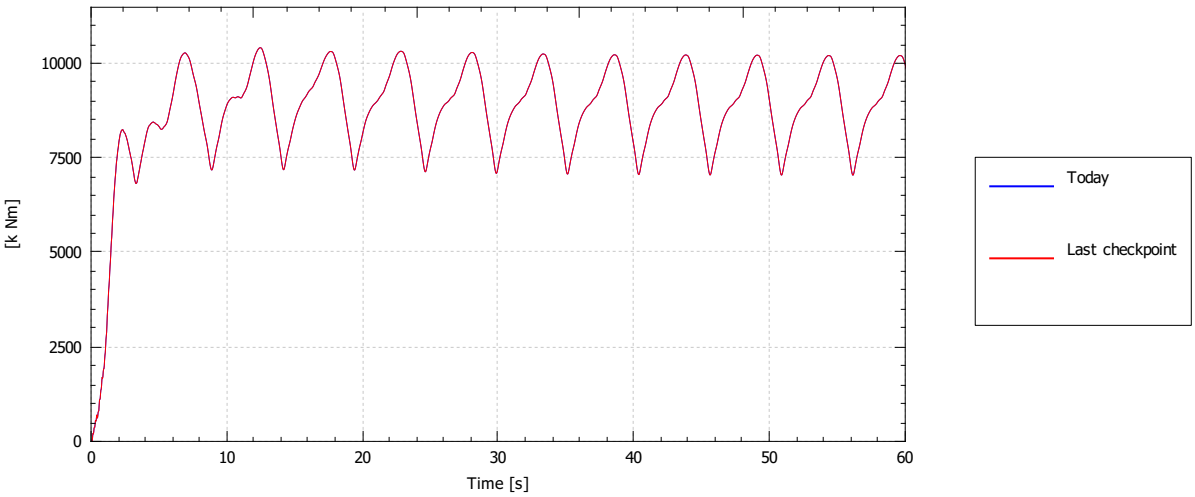


**Blade [Time] [Blade 1]**

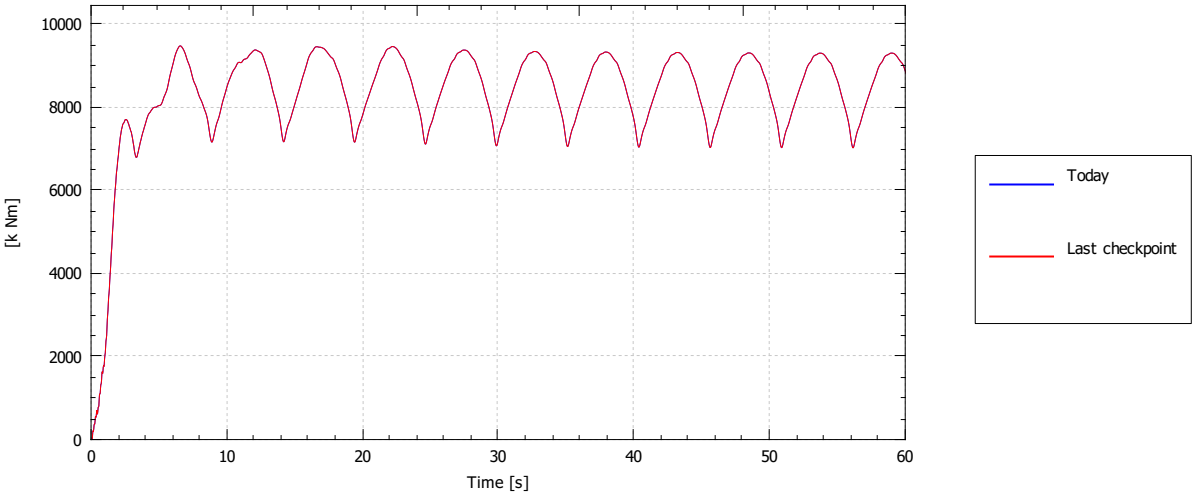
Root force (magnitude)



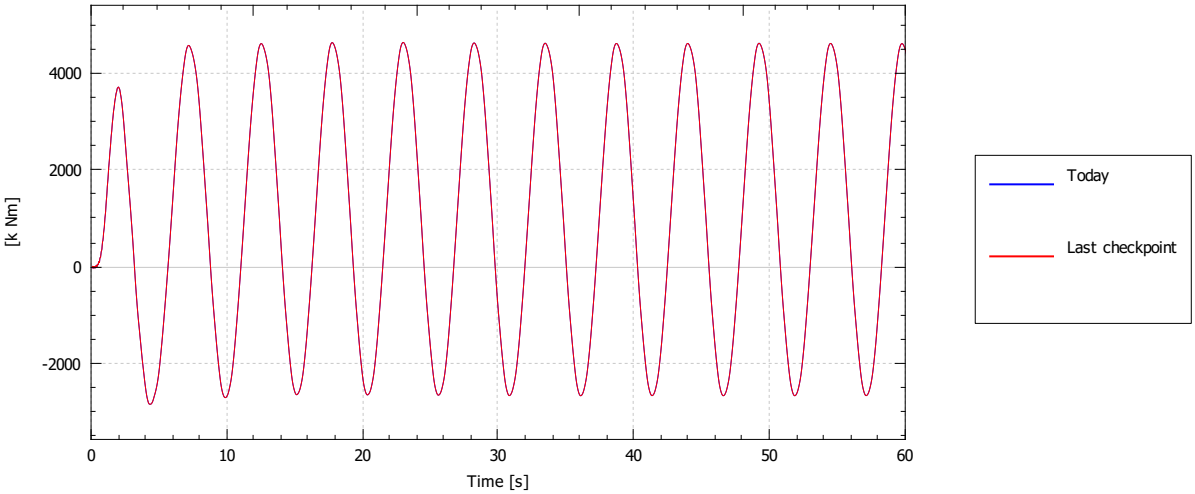

Root moment (magnitude)



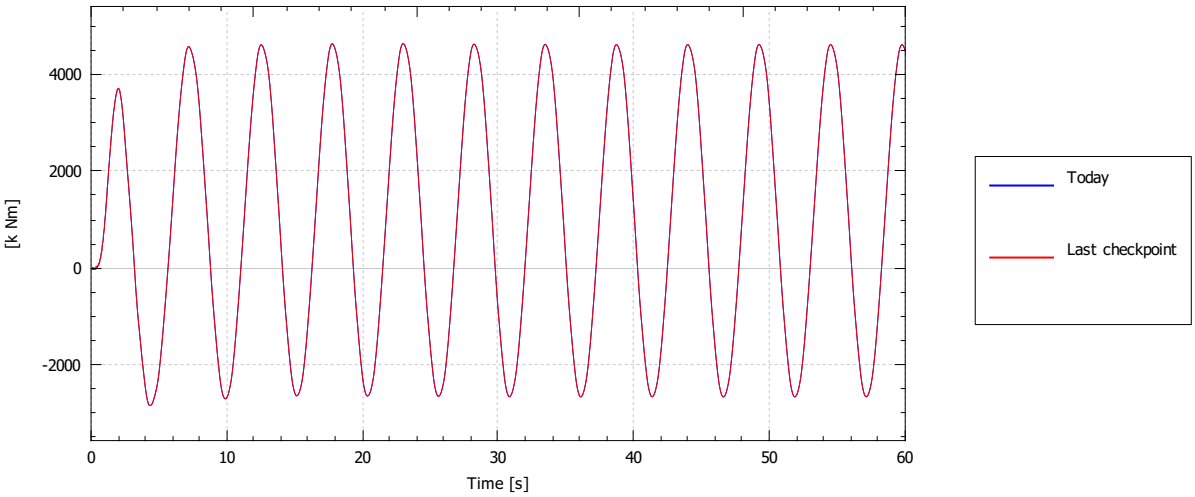

Root moment (out-of-plane)



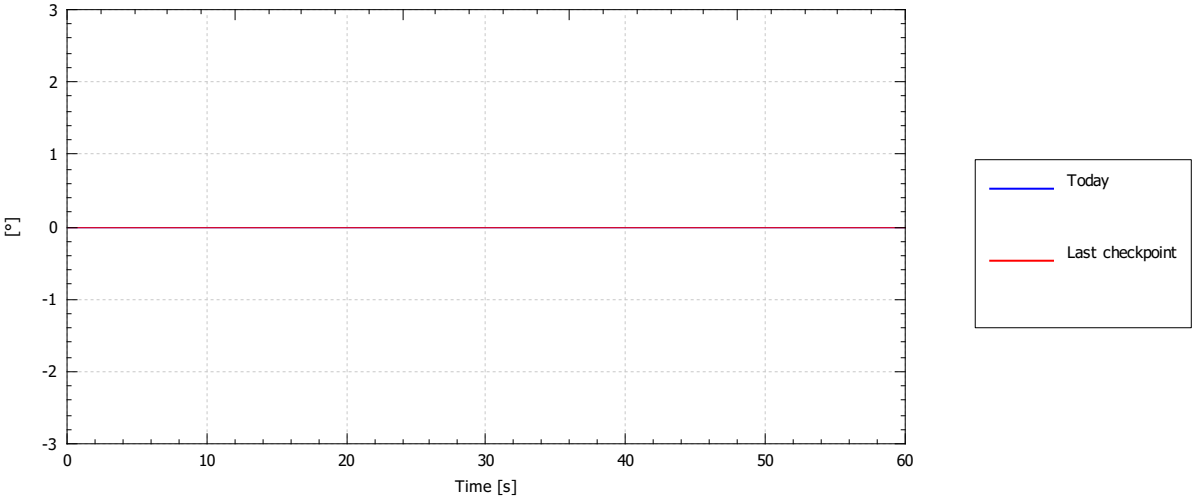
Root moment (in-plane)



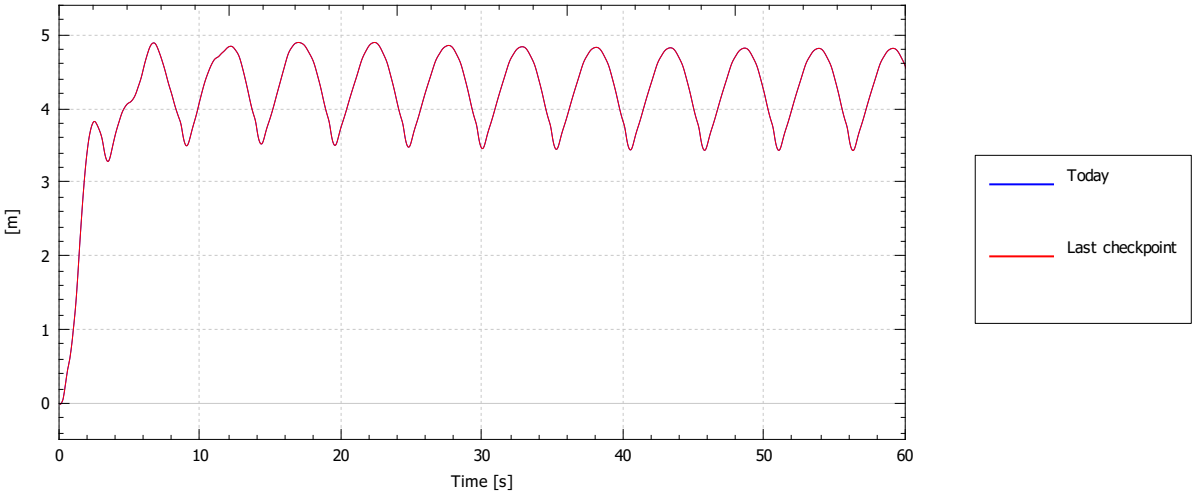

Root moment about shaft



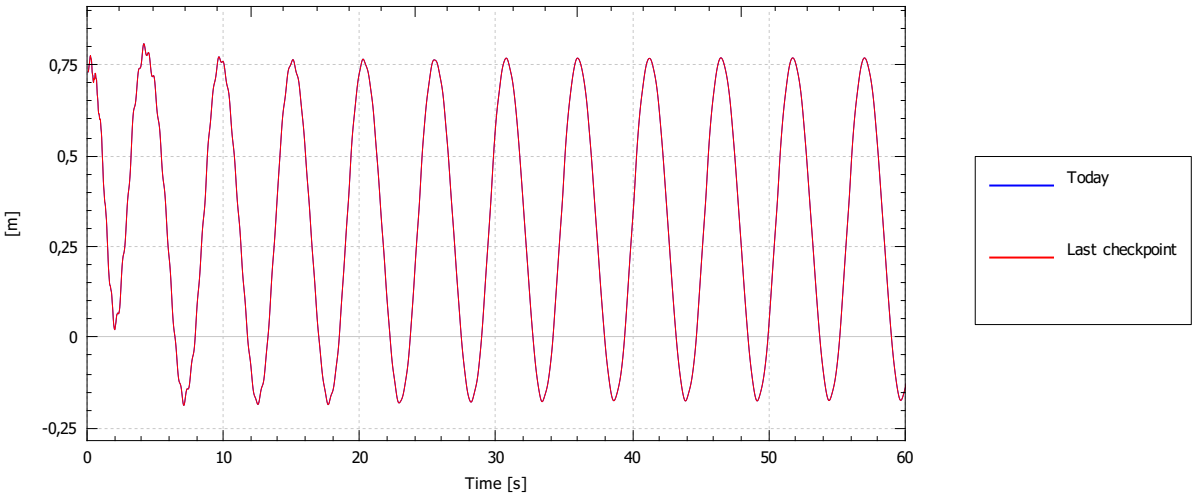

Pitch angle



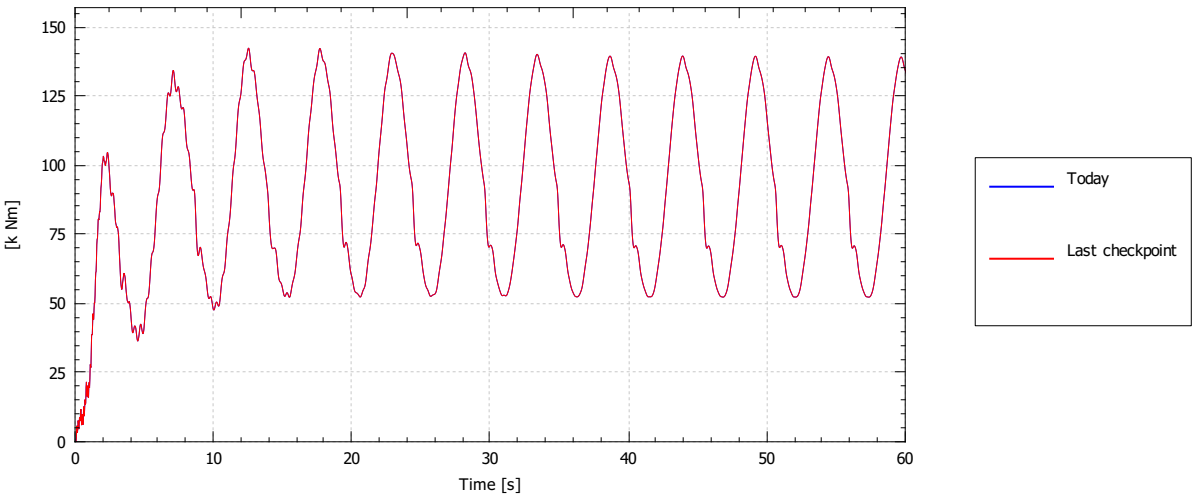
Tip deflection (out-of-plane)




Tip deflection (in-plane)

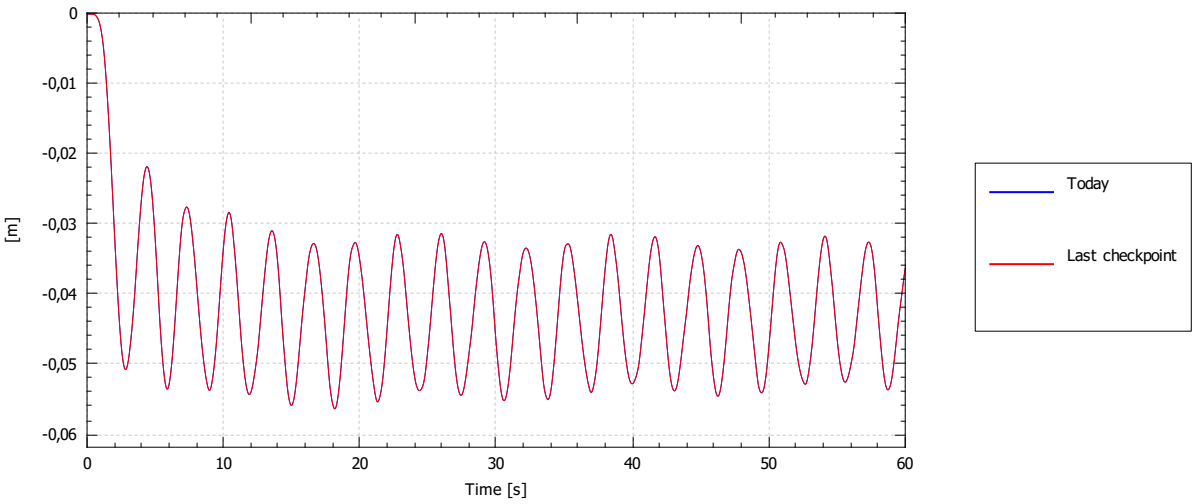



Root torque

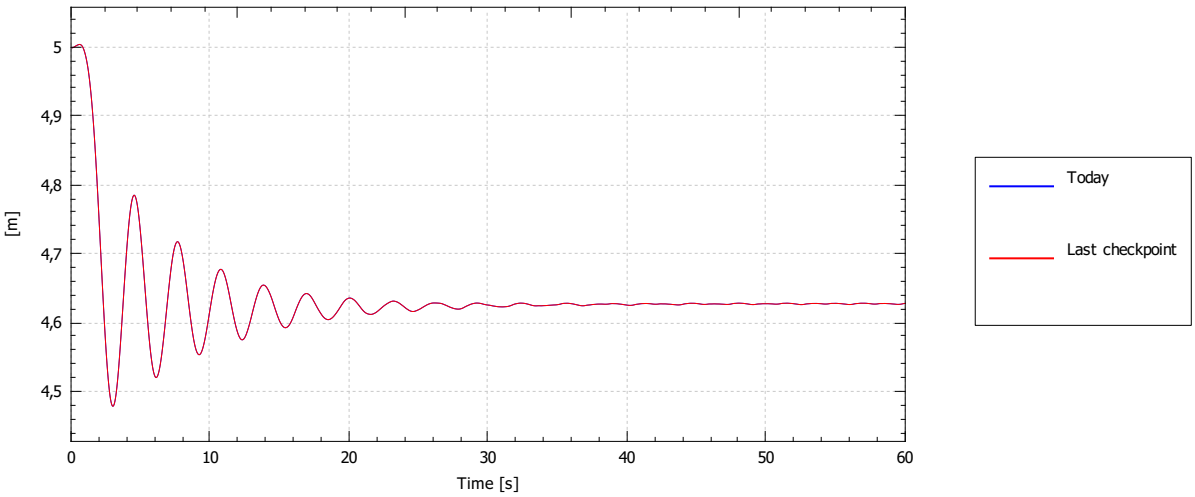


**Node [Node Hub | Hub]**

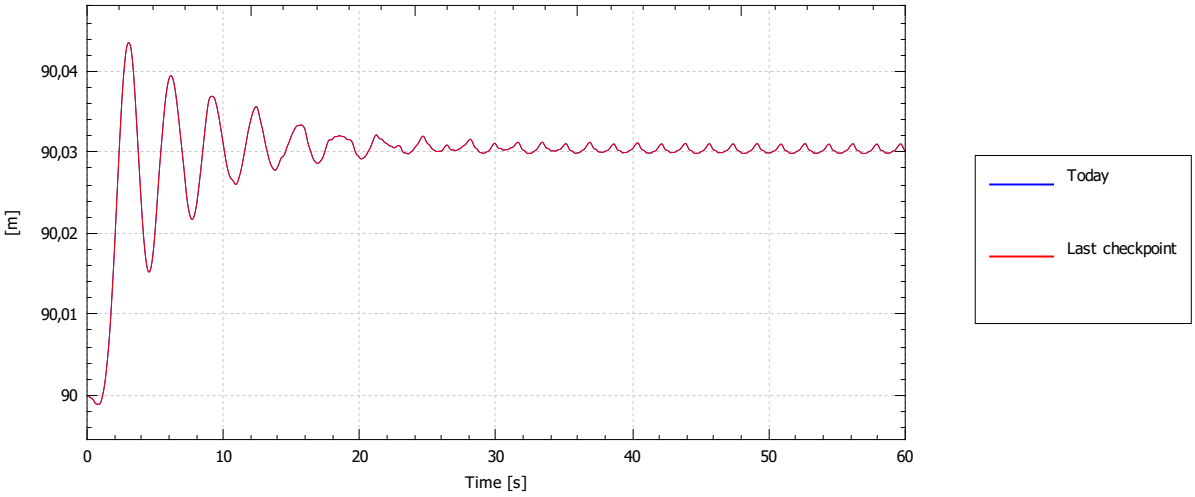
Position (x)



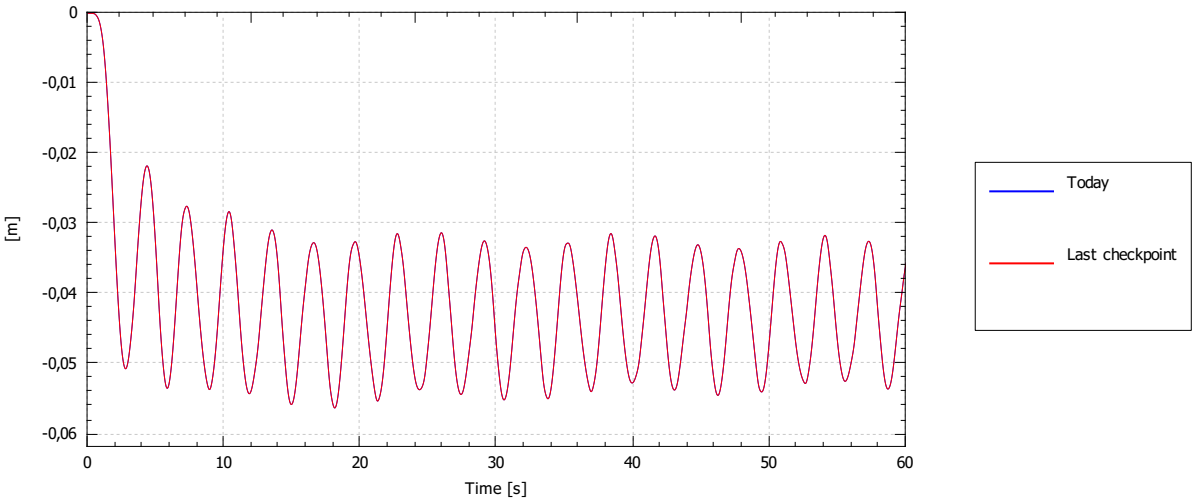

Position (y)



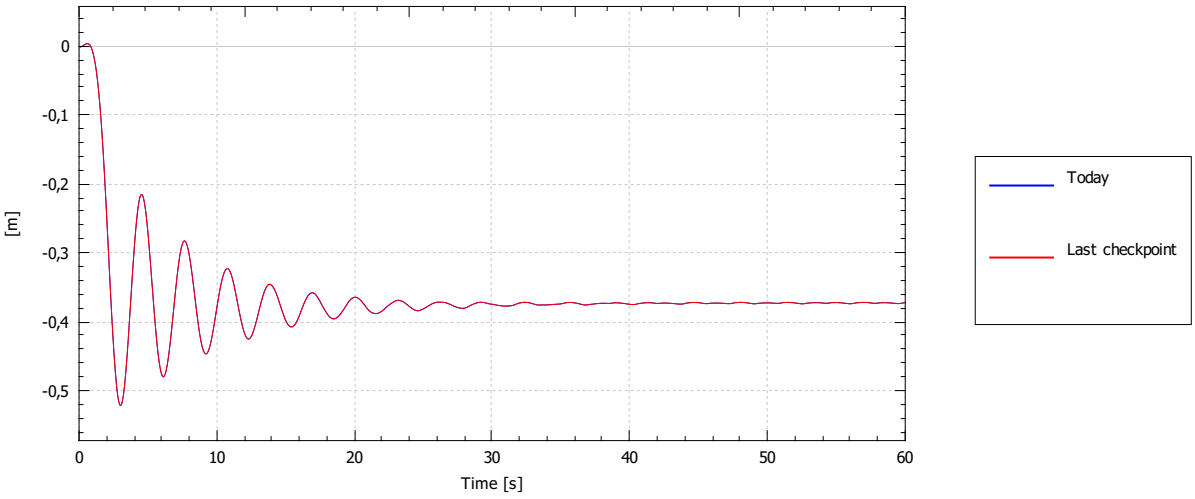

Position (z)



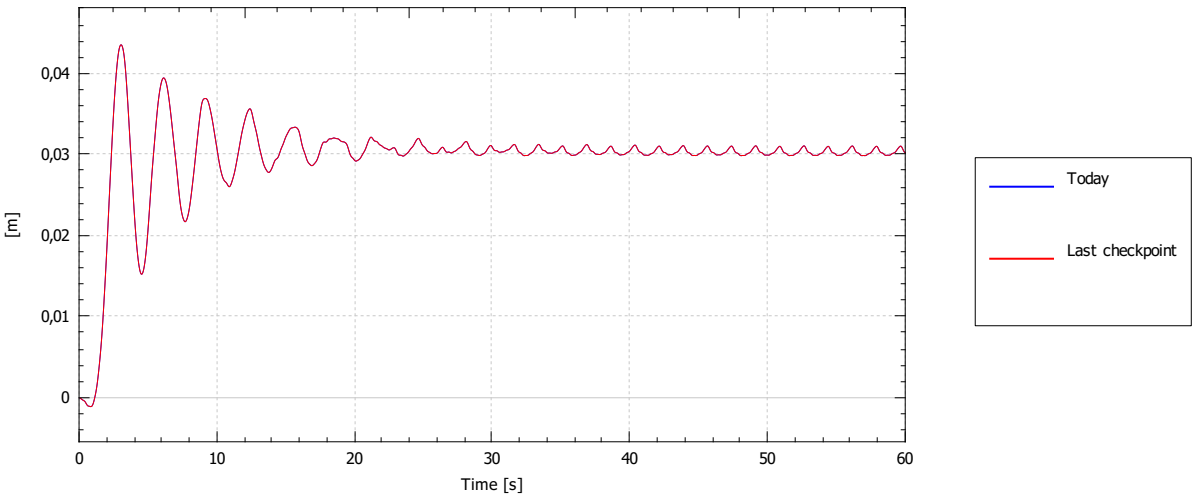
Displacement (u)



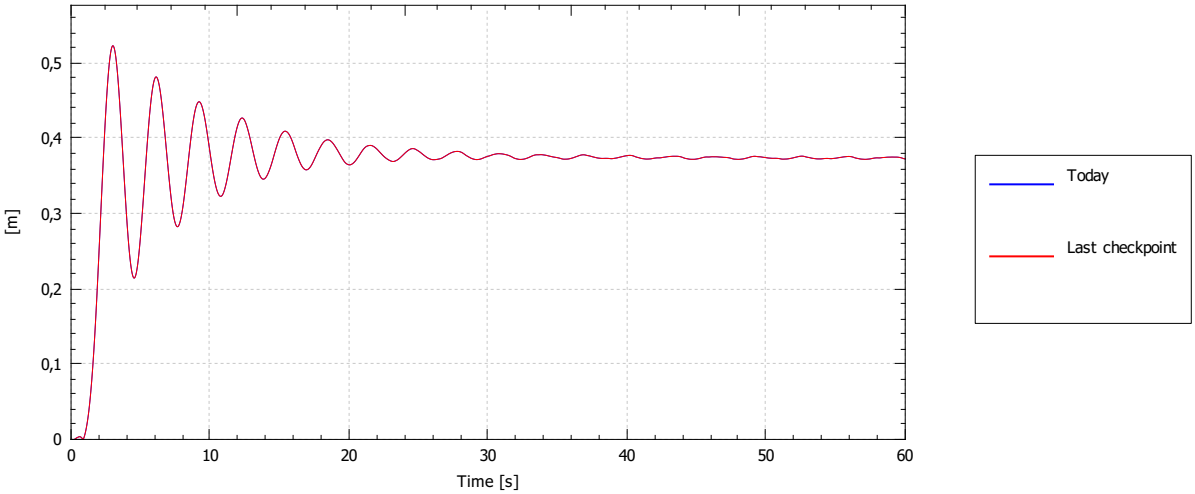

Displacement (v)



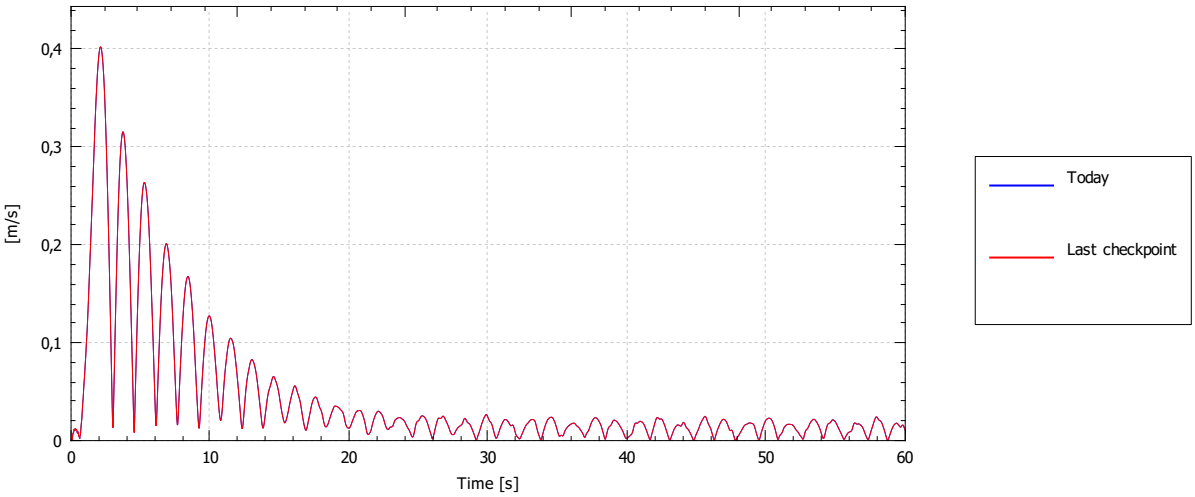

Displacement (w)



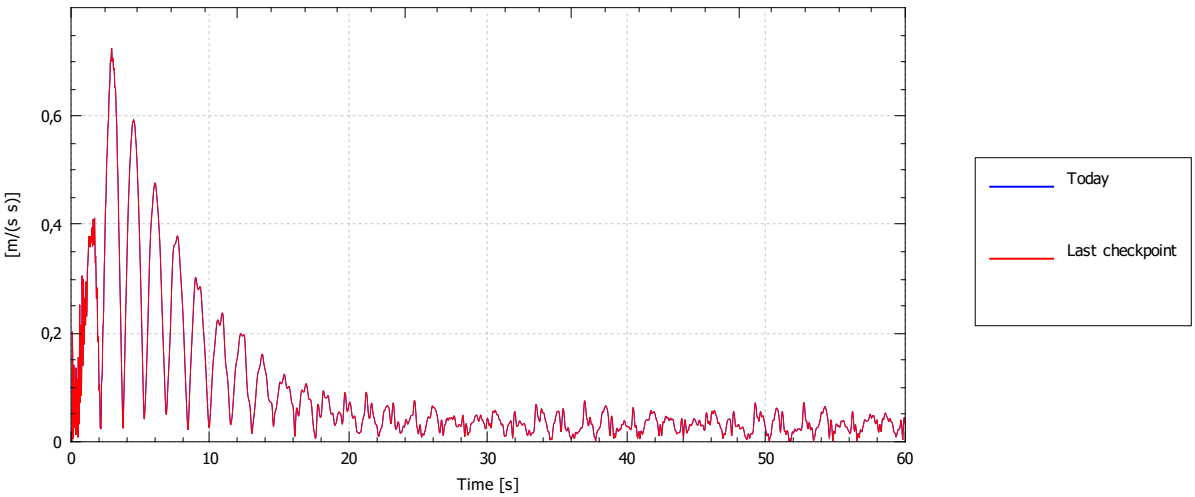
Displacement magnitude



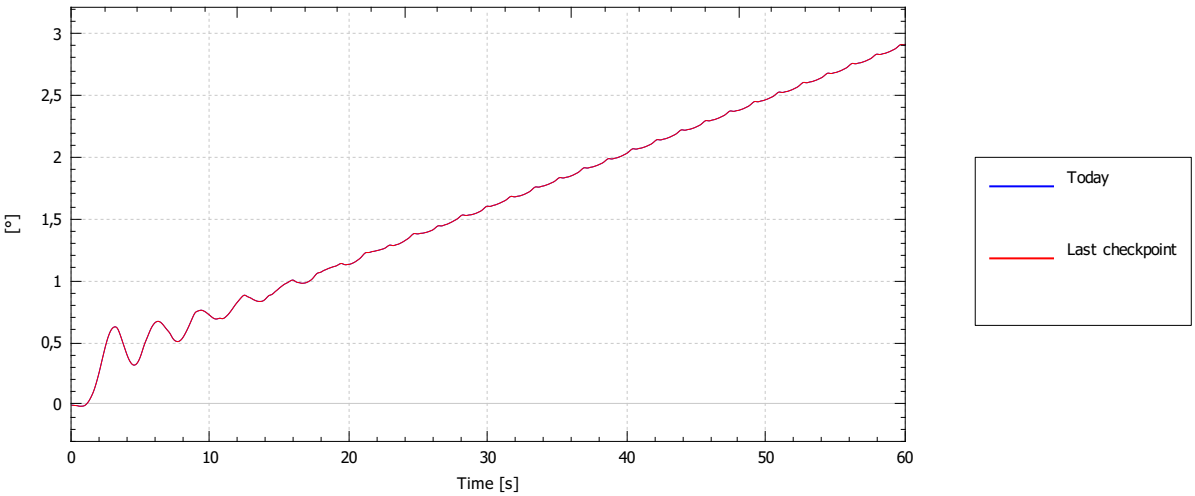

Speed



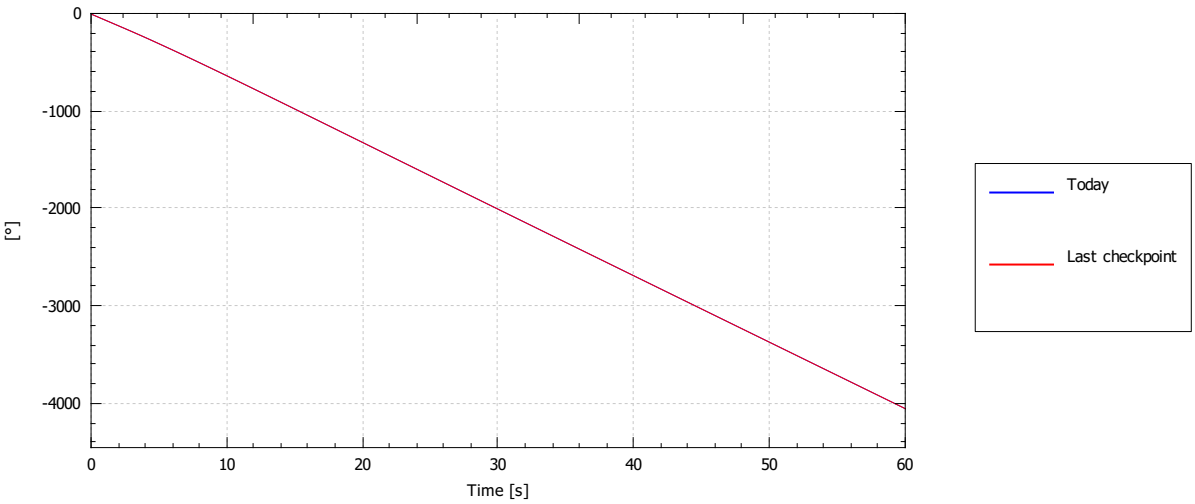

Acceleration, magnitude



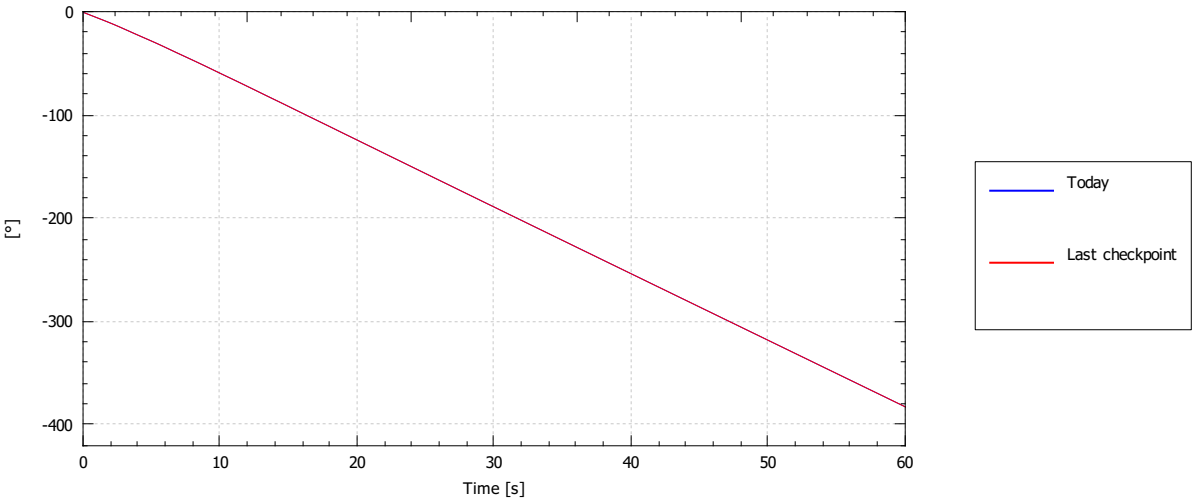
## Rotational displacement (ru)



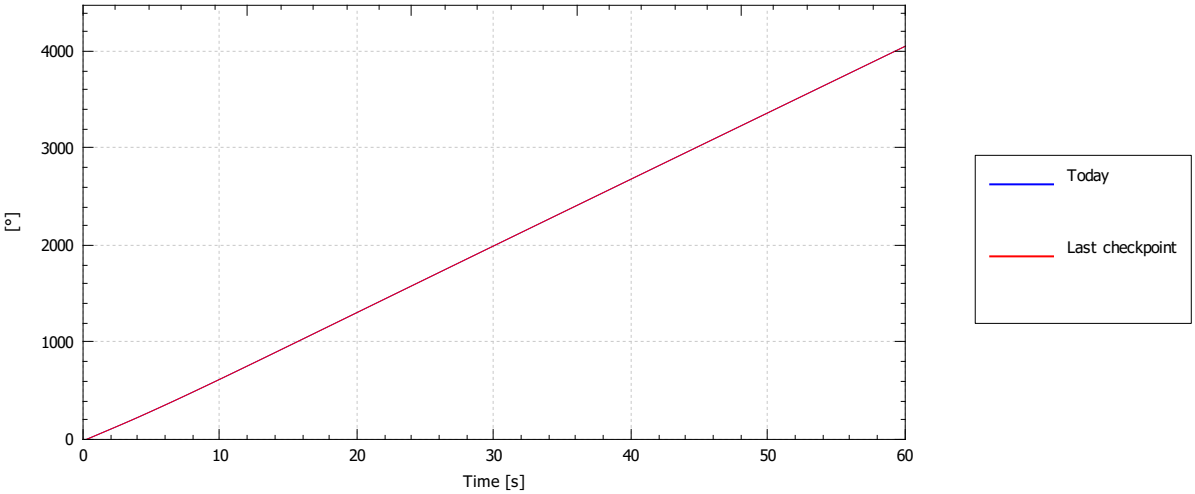

## Rotational displacement (rv)



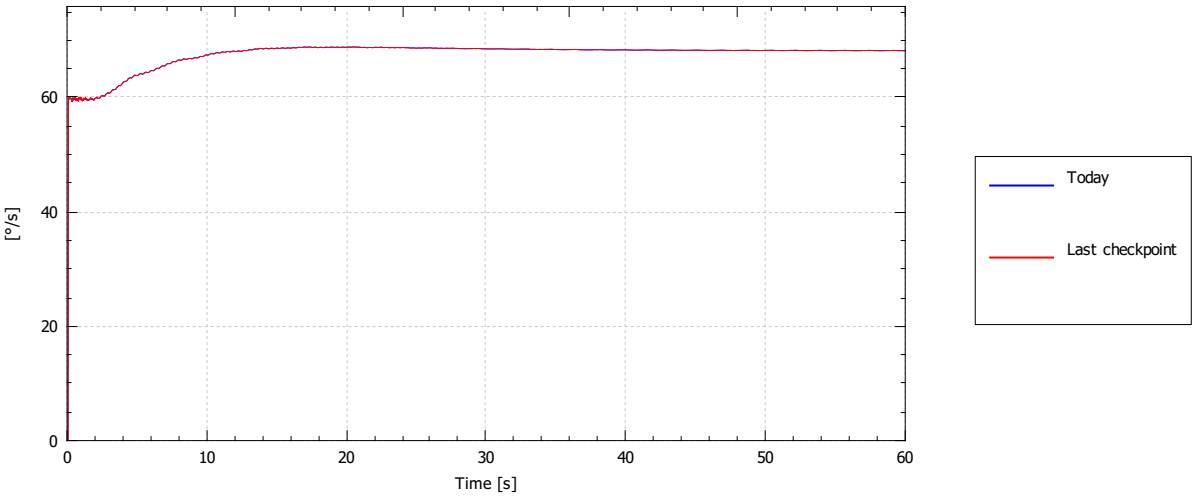

## Rotational displacement (rw)



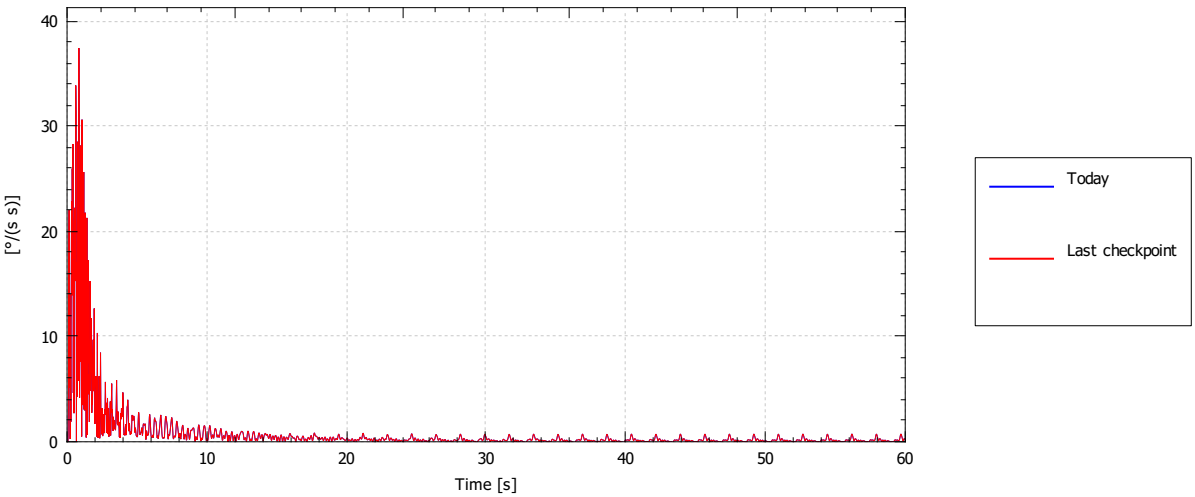
Rotational displacement magnitude



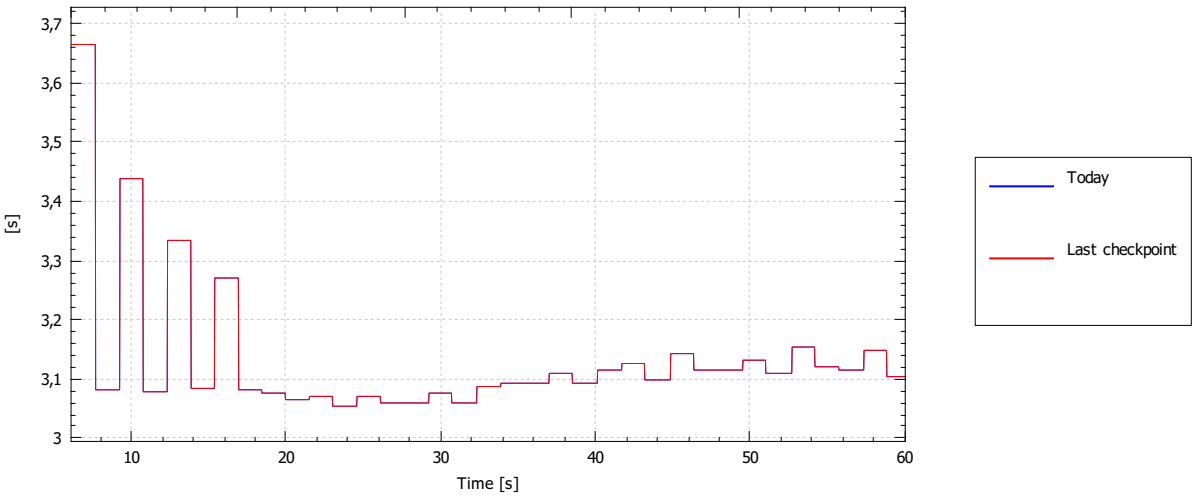

Rotational speed



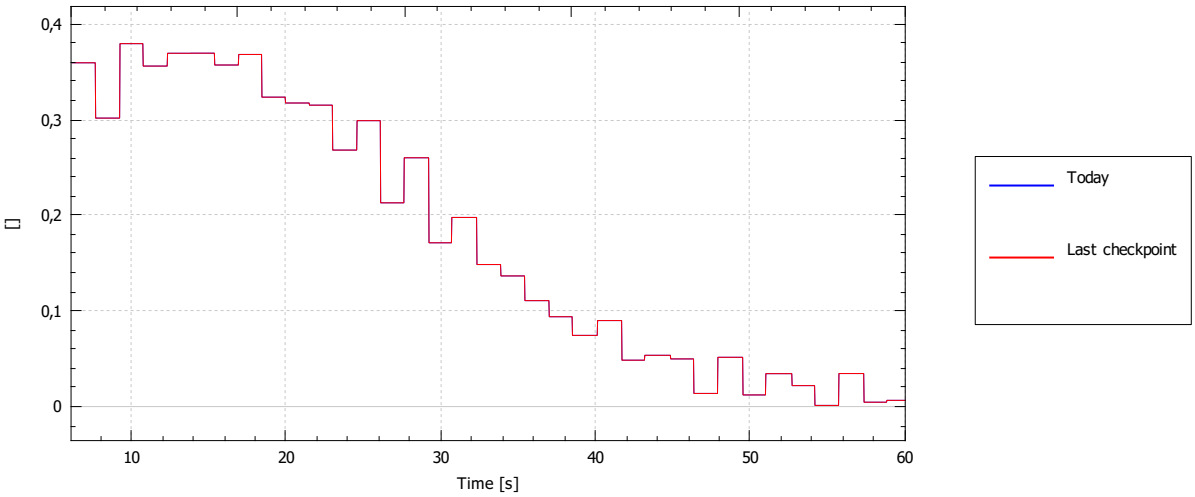

Rotational acceleration mag



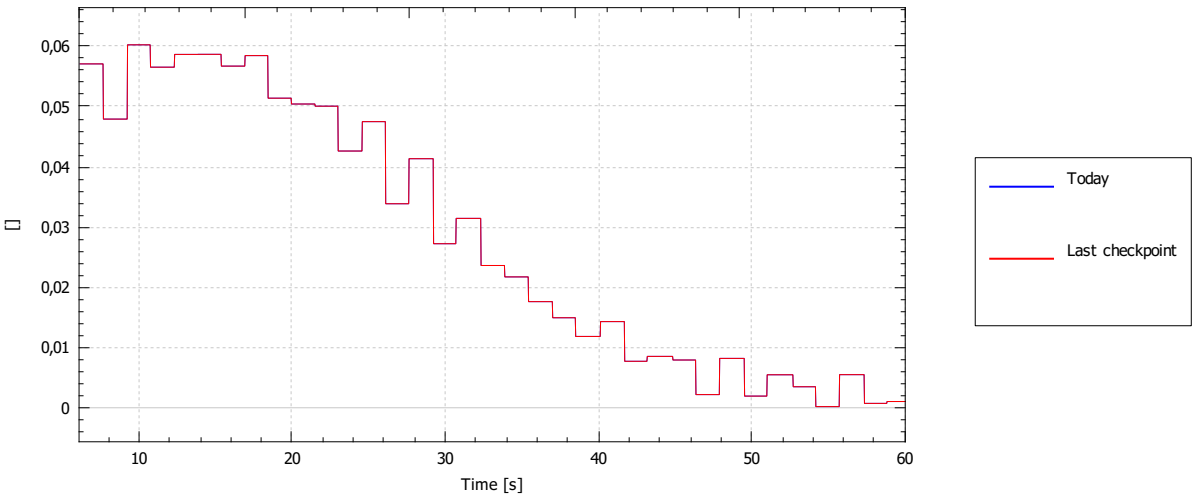
## Displacement period




## Displacement logarithmic decrement

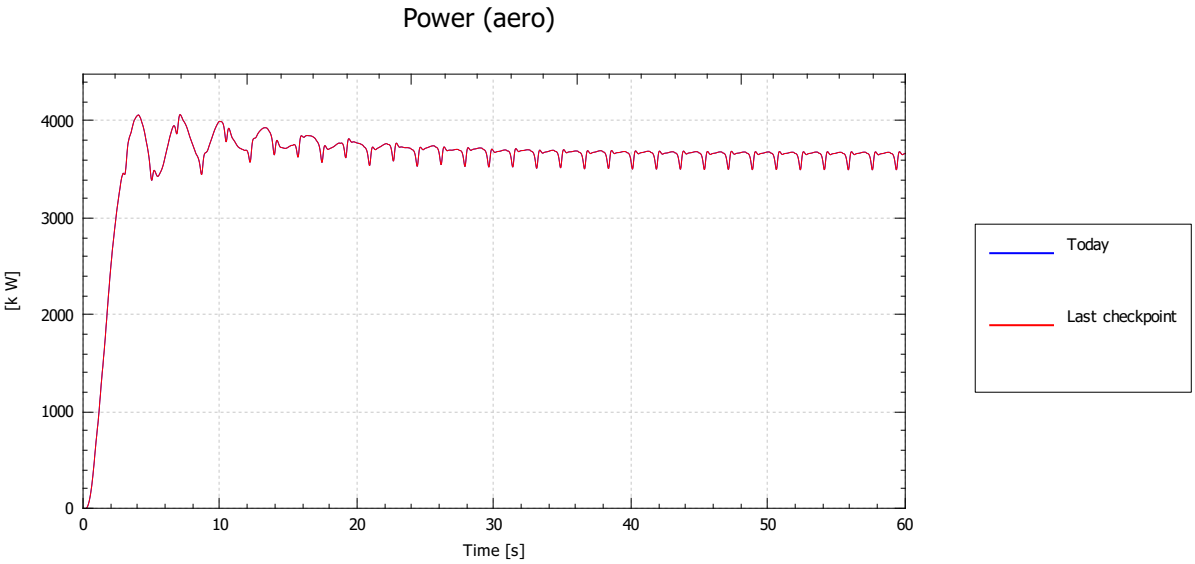


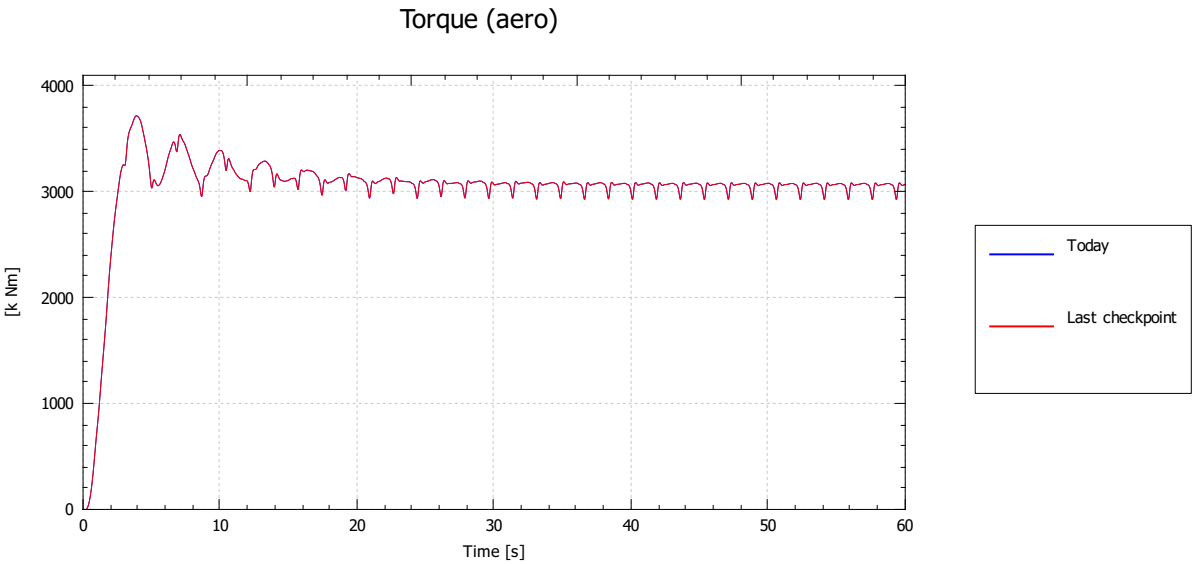

## Displacement damping ratio



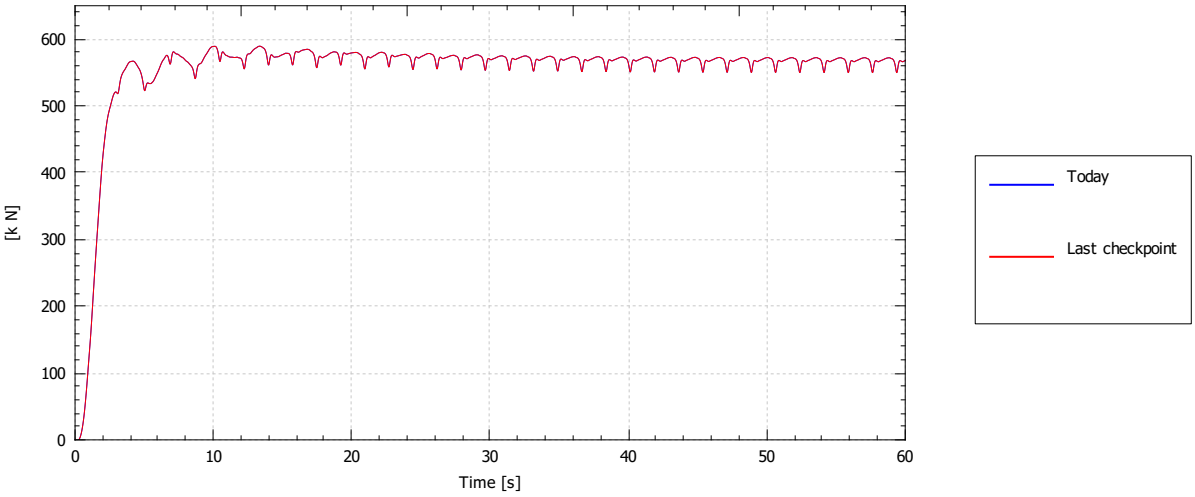
**Load case: power loaw exponent**

**Rotor**

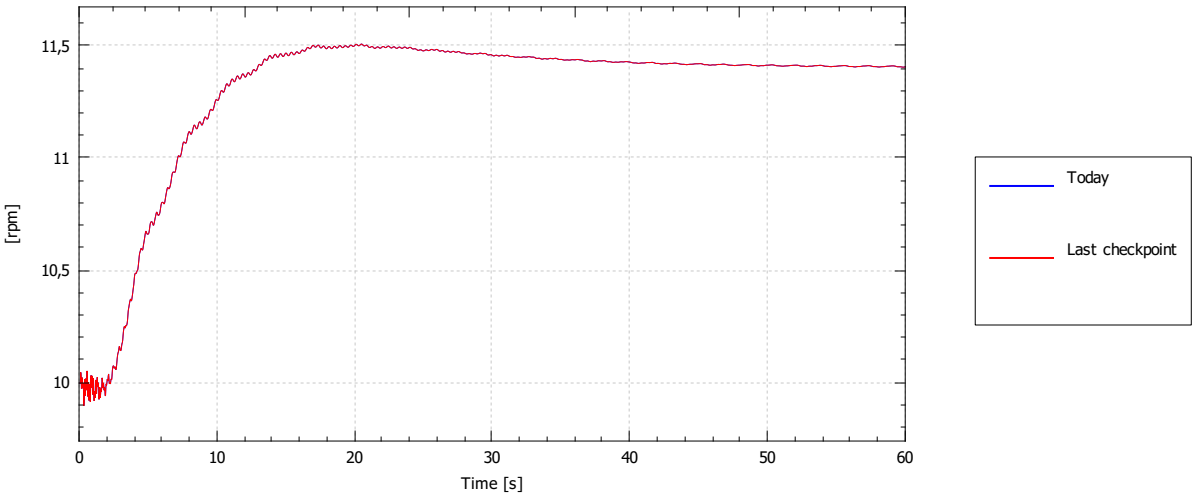


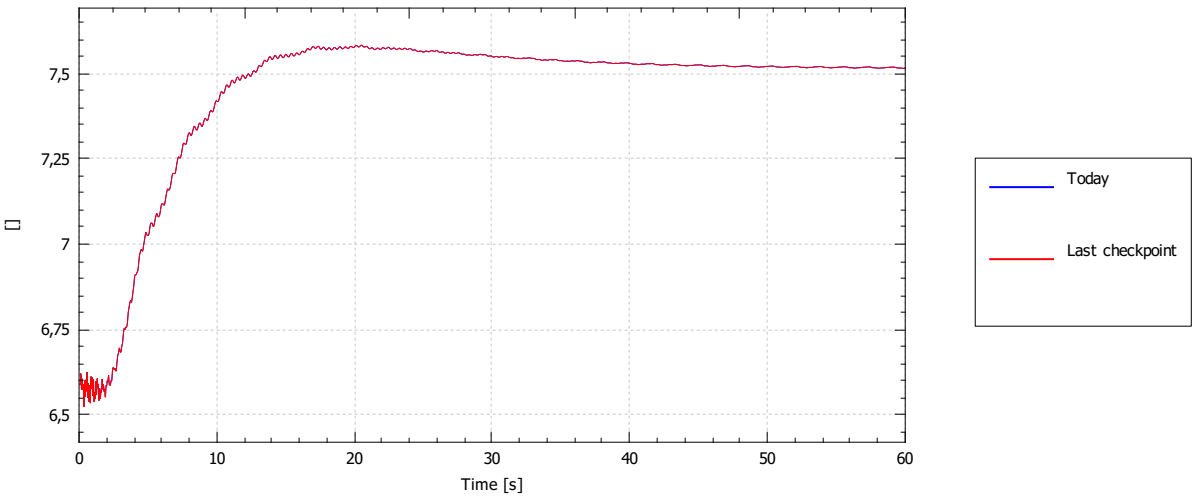
## Thrust (aero)



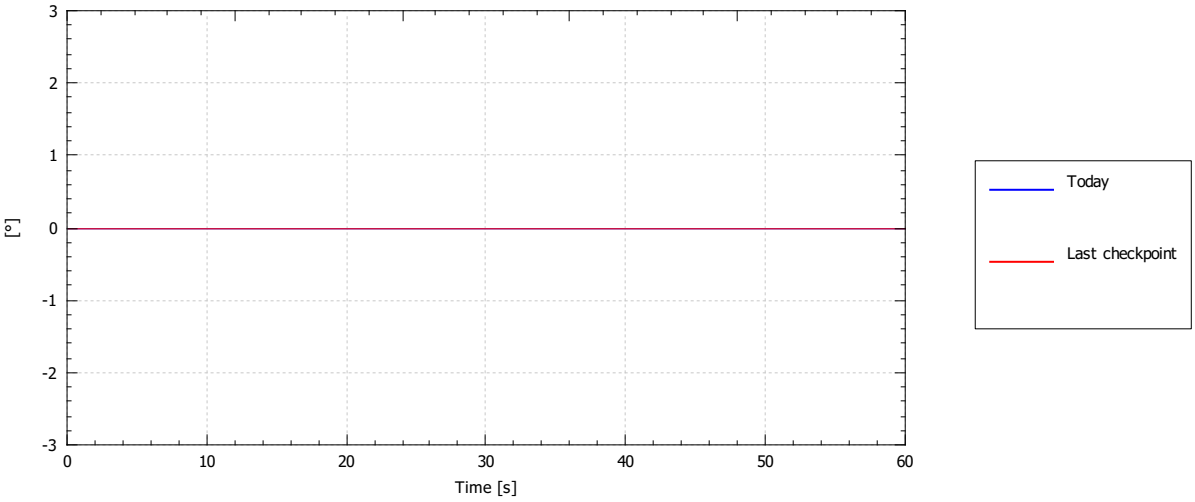

## RPM



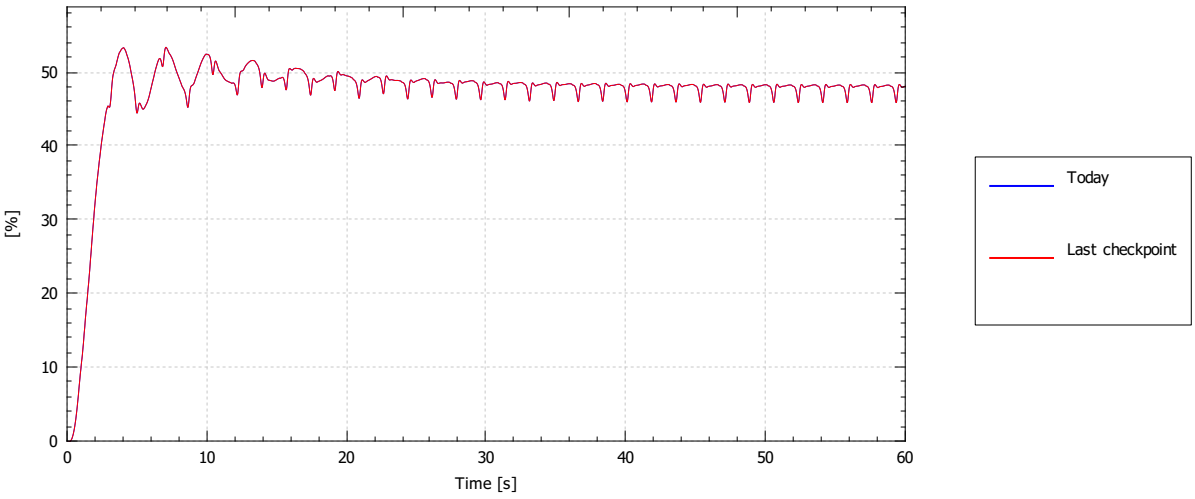

## TSR



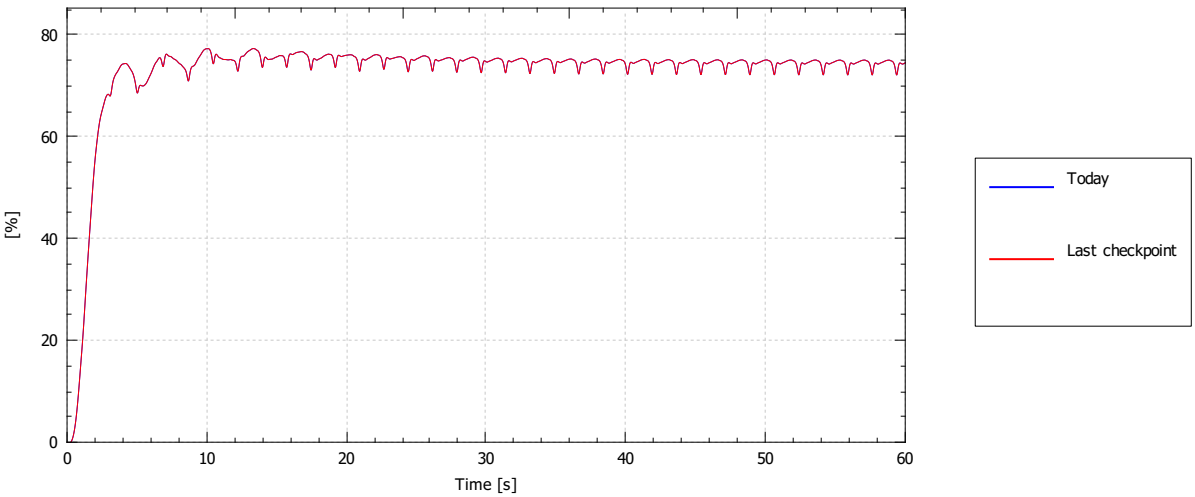
Representative demanded pitch angle



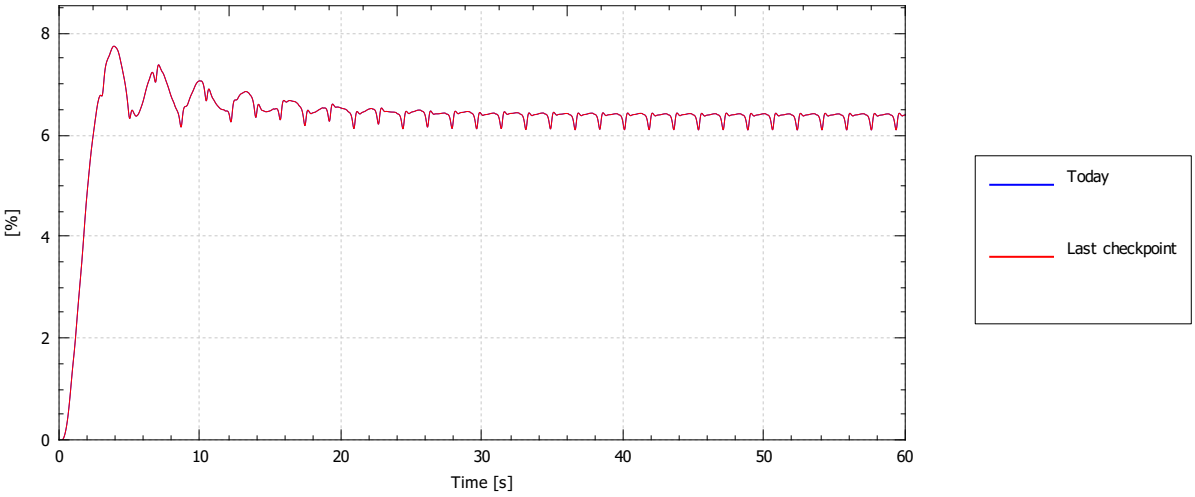

Power coef. (CP)



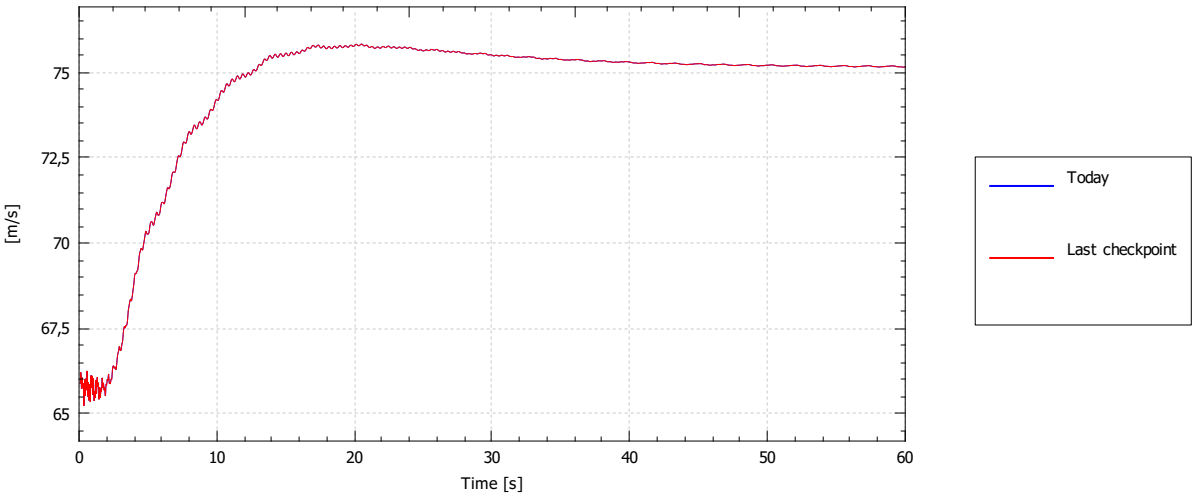

Thrust coef. (CT)



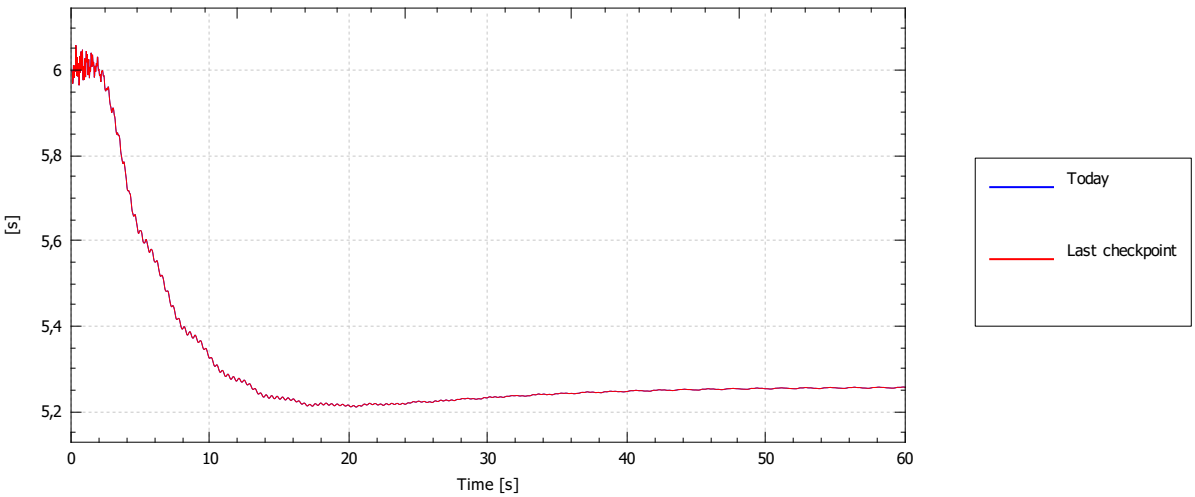
Torque coef. (CQ)



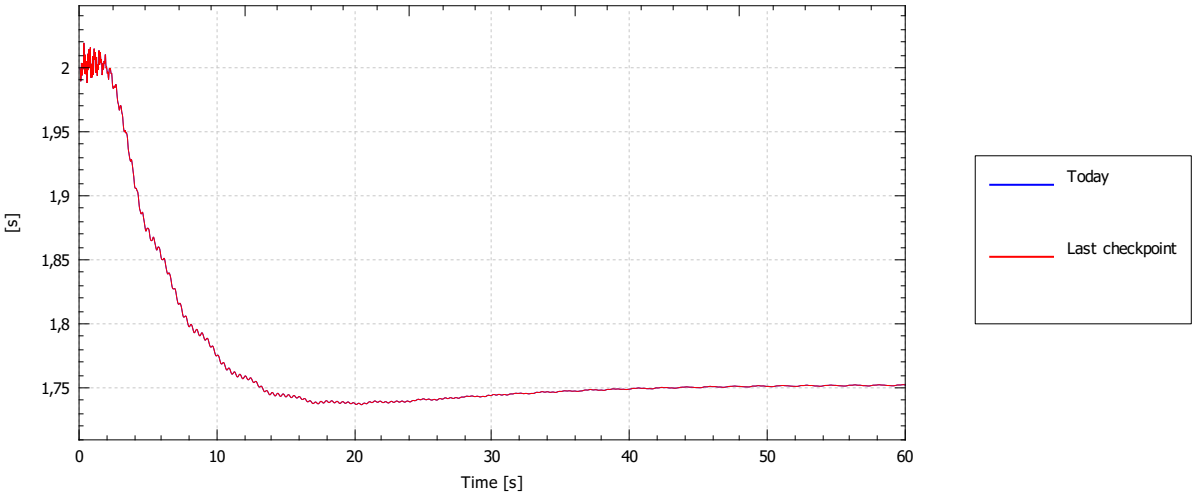

Tip speed



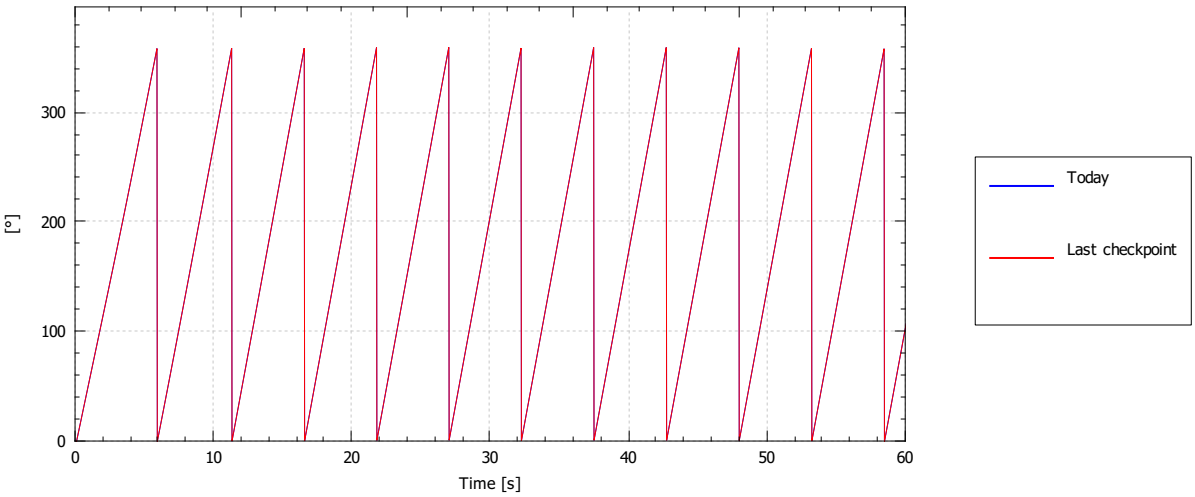

1P (one revolution)



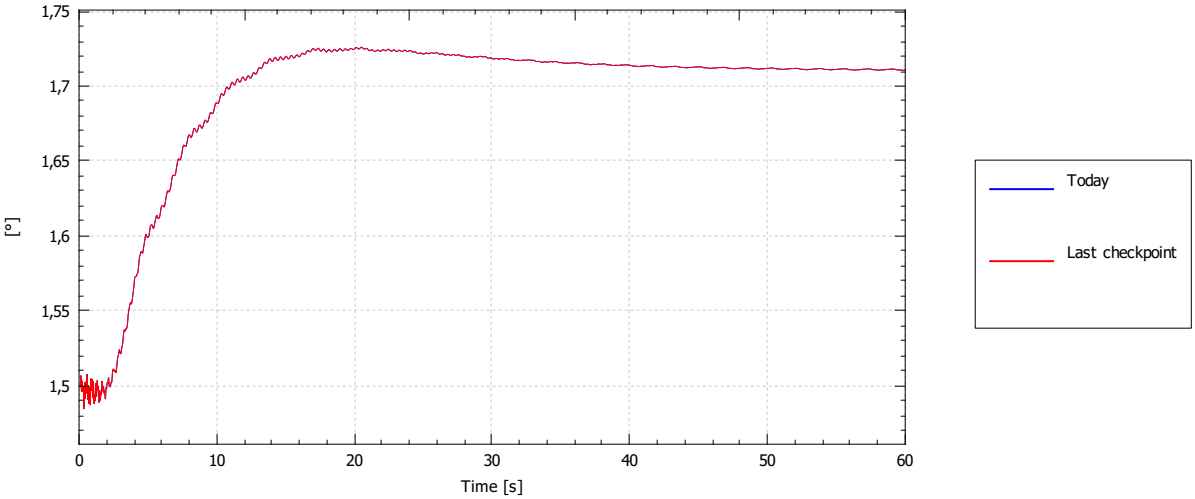
nP (blade passing)



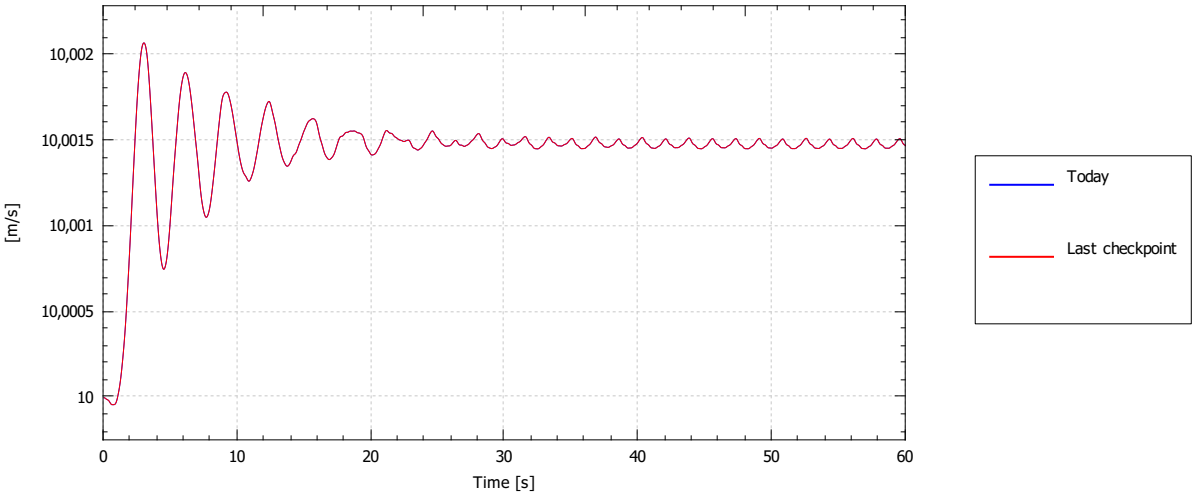

Azimuth angle



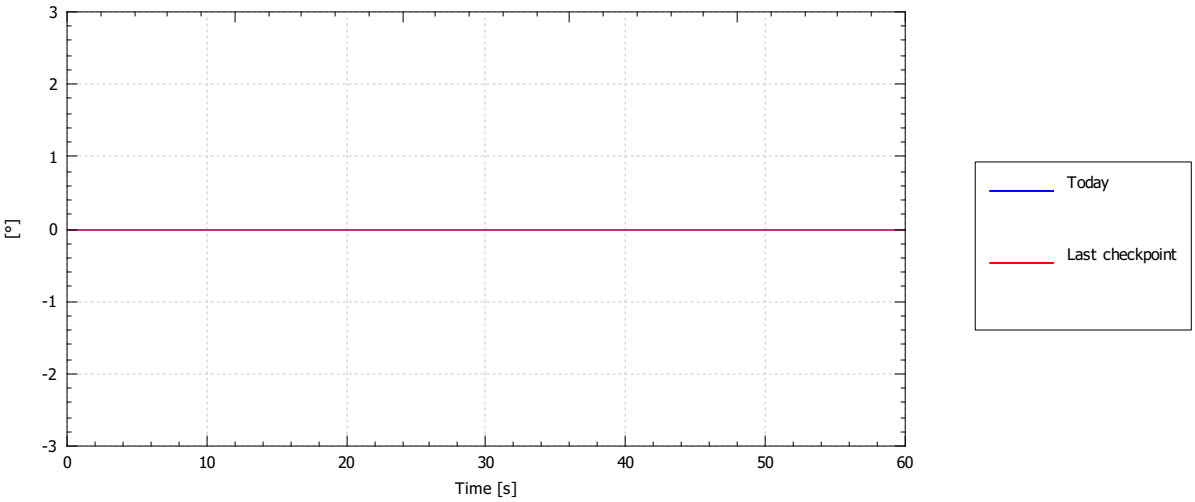

Rotation per timestep



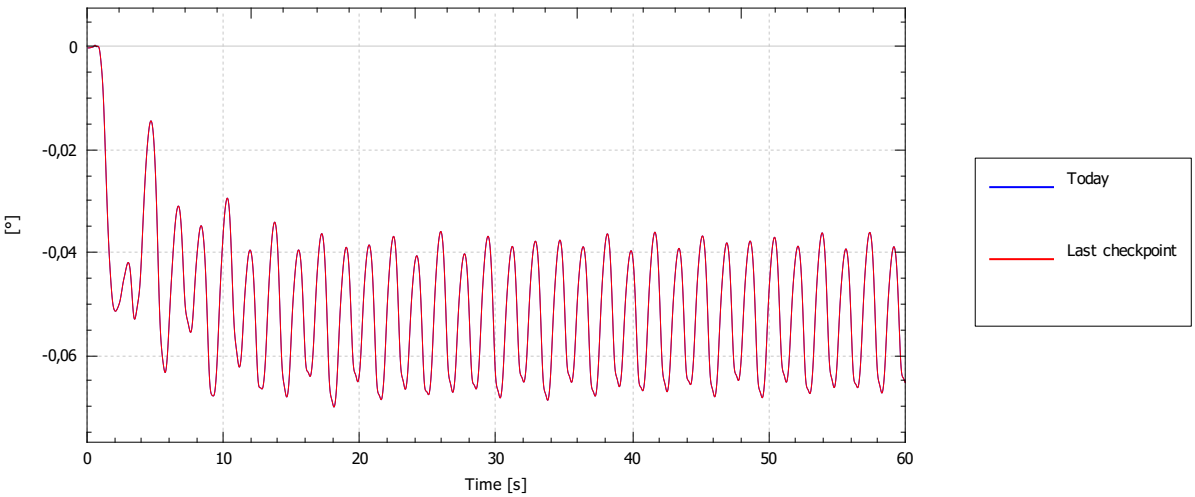
## Wind speed at hub, magnitude



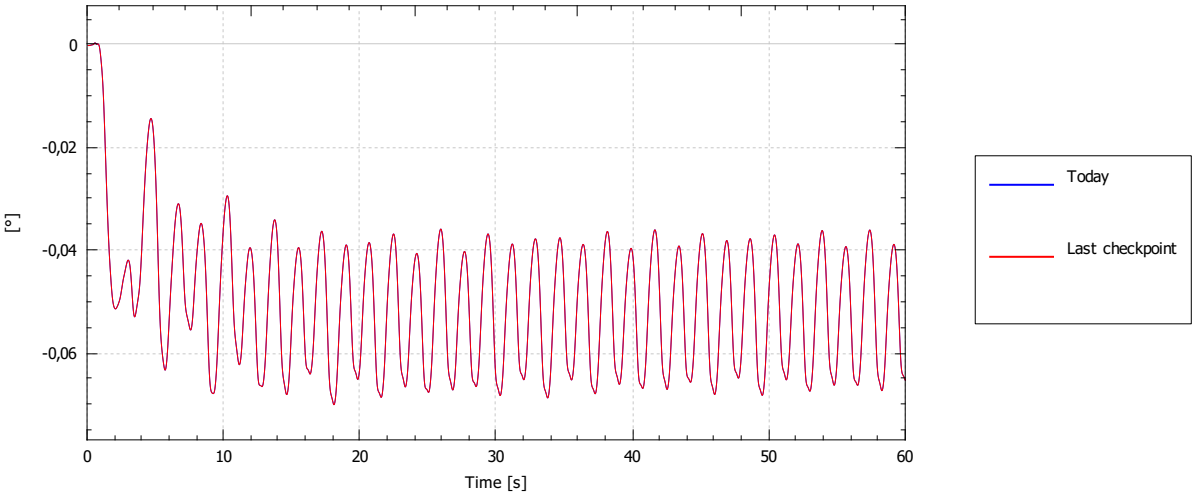

## Wind angle at hub



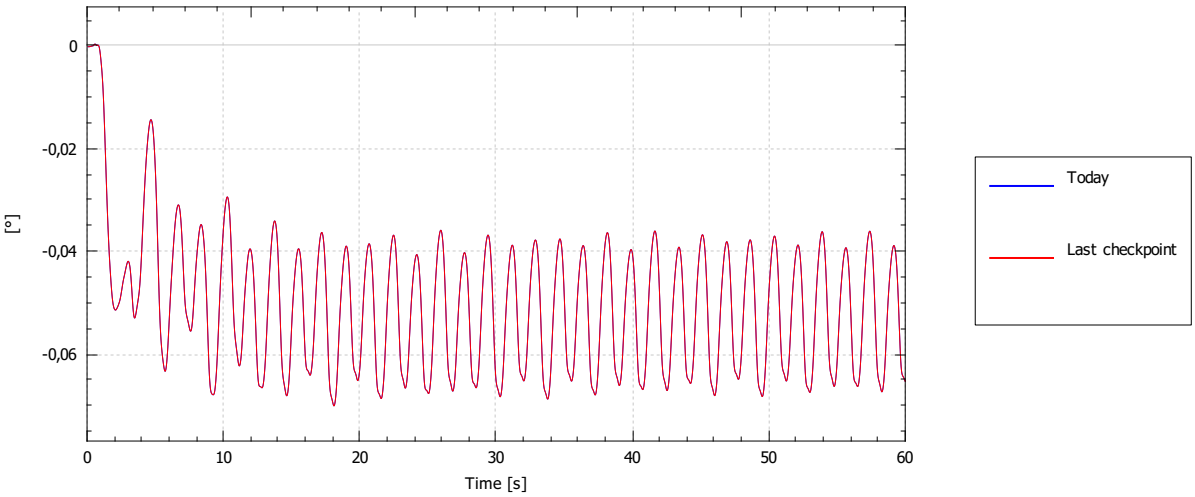

## Yaw angle relative to forward



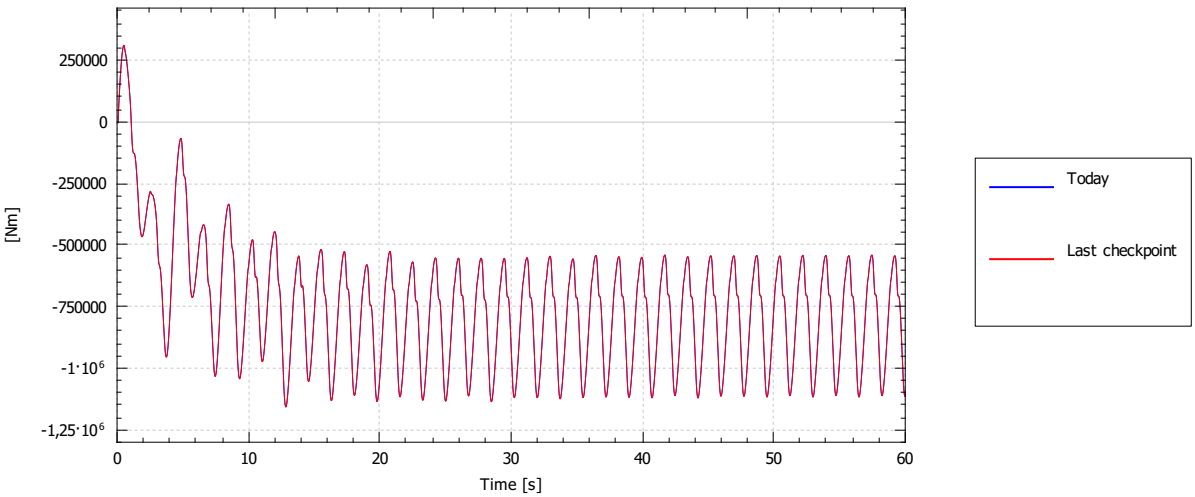
Yaw angle to reference direction




Yaw error

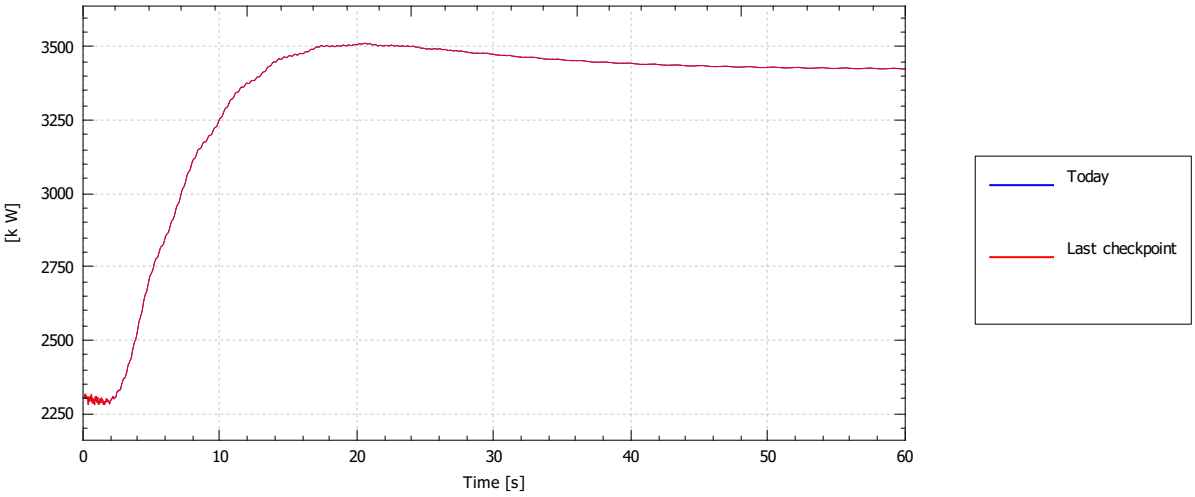



Torque about yaw axis

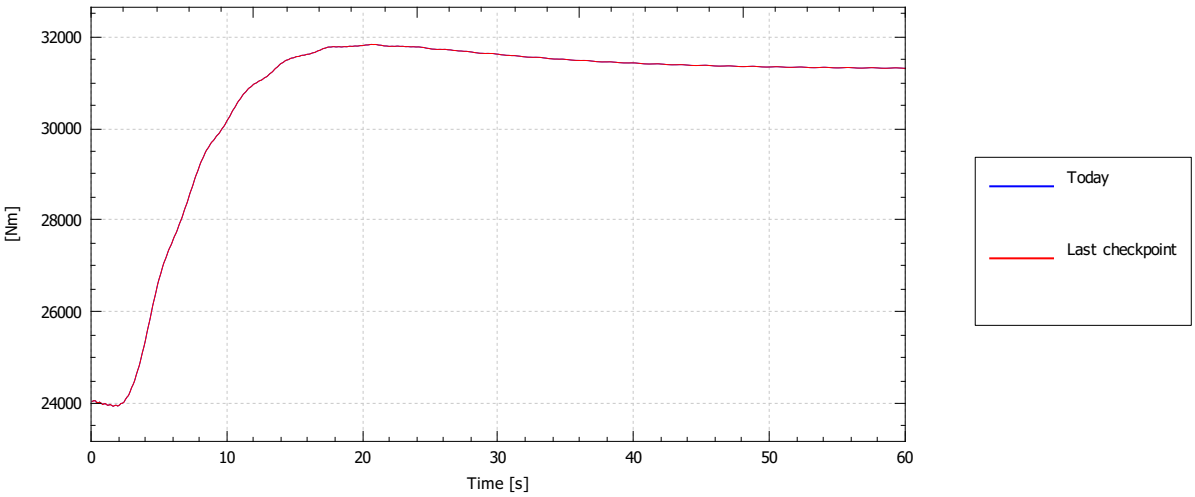


**Generator**

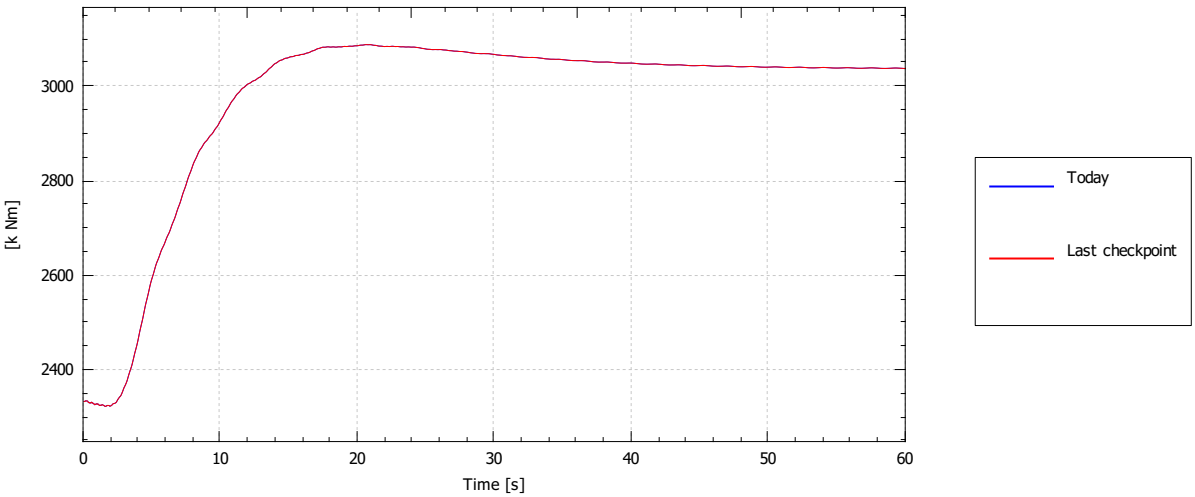
Power (electrical)



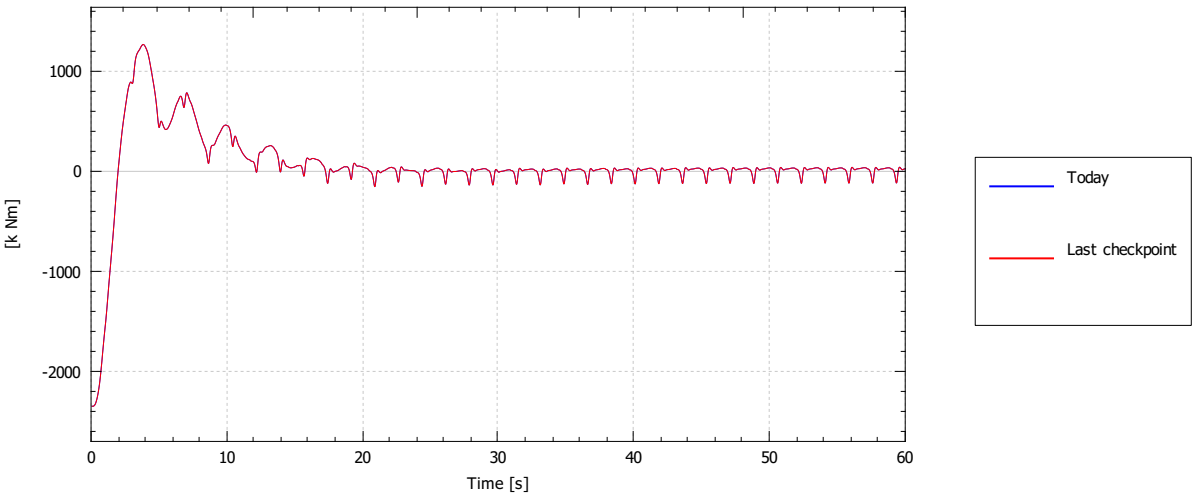

Torque



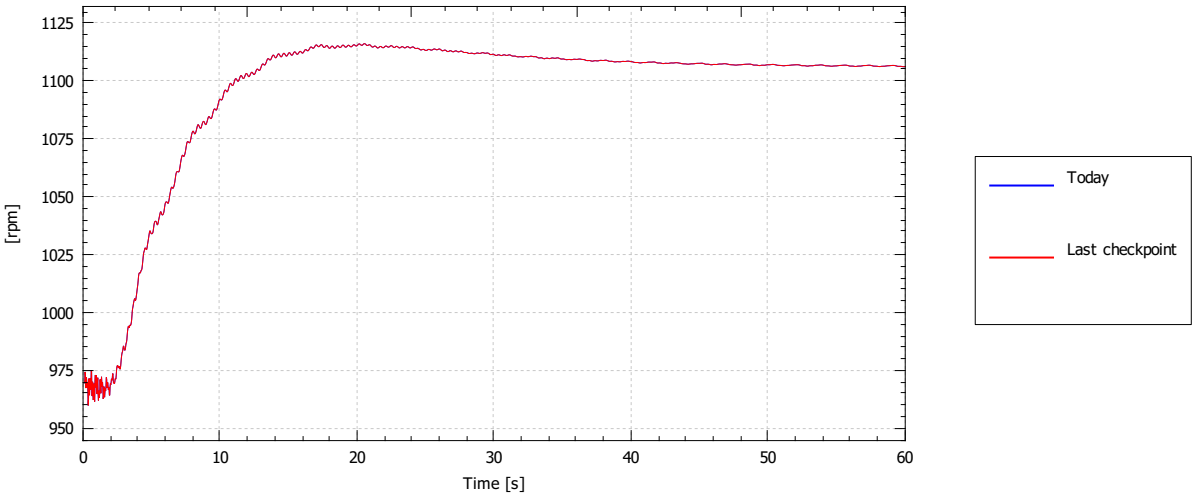

Torque on main shaft



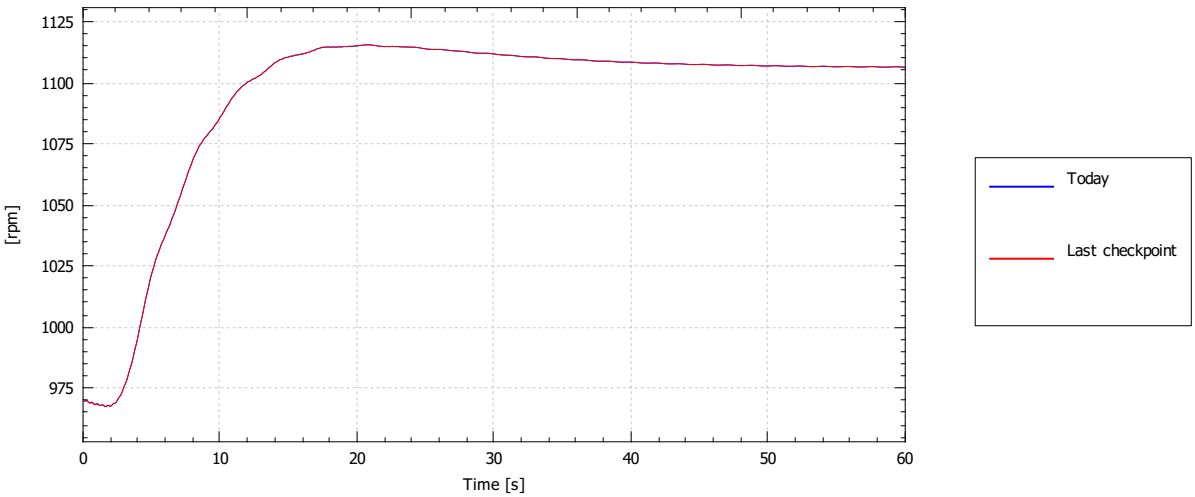
## Torque diff. on main shaft

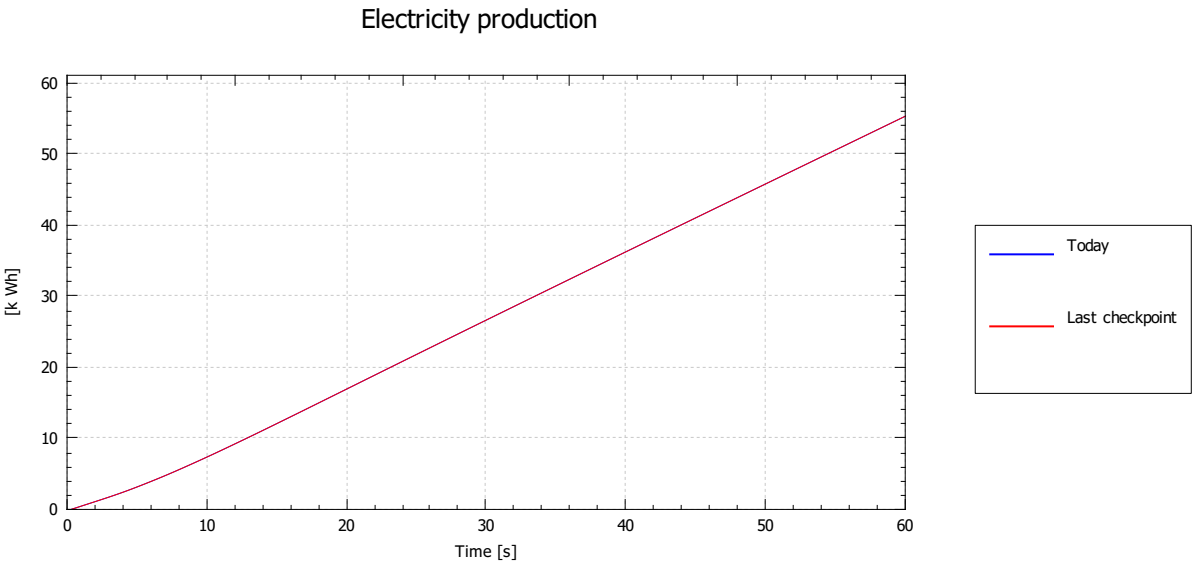


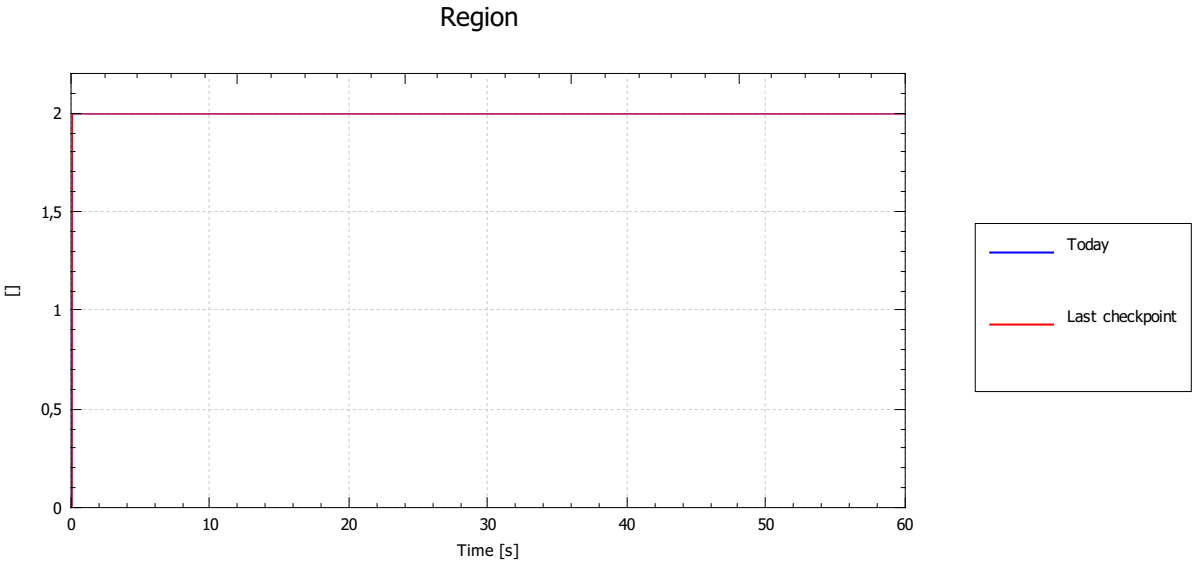

## RPM




## Filtered RPM

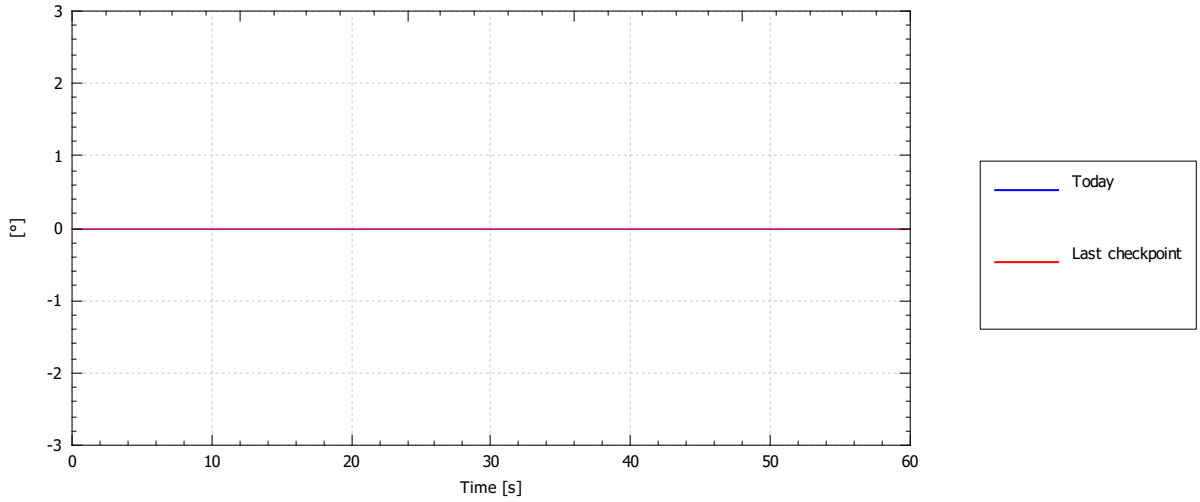




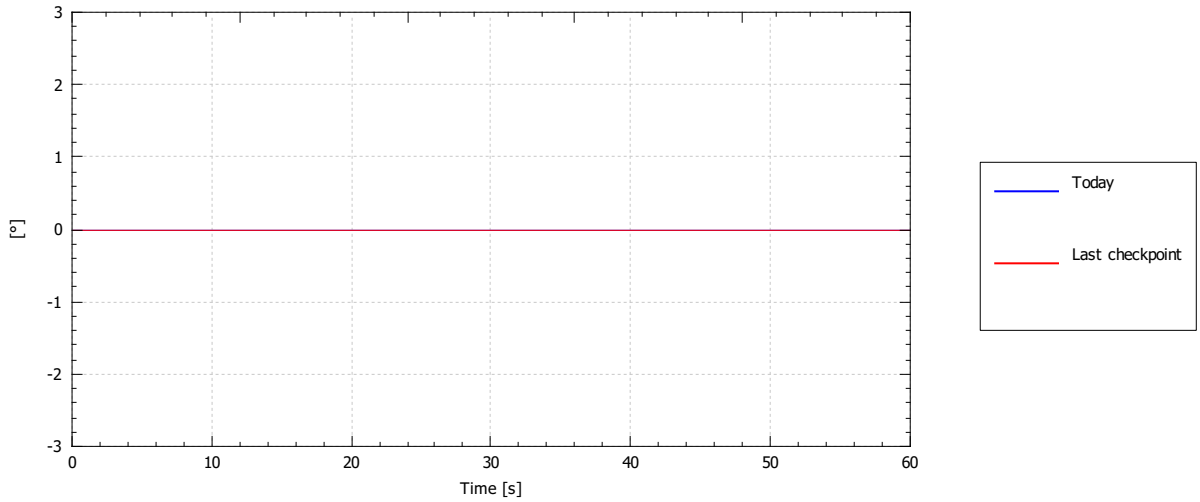




**Demanded pitch controller**

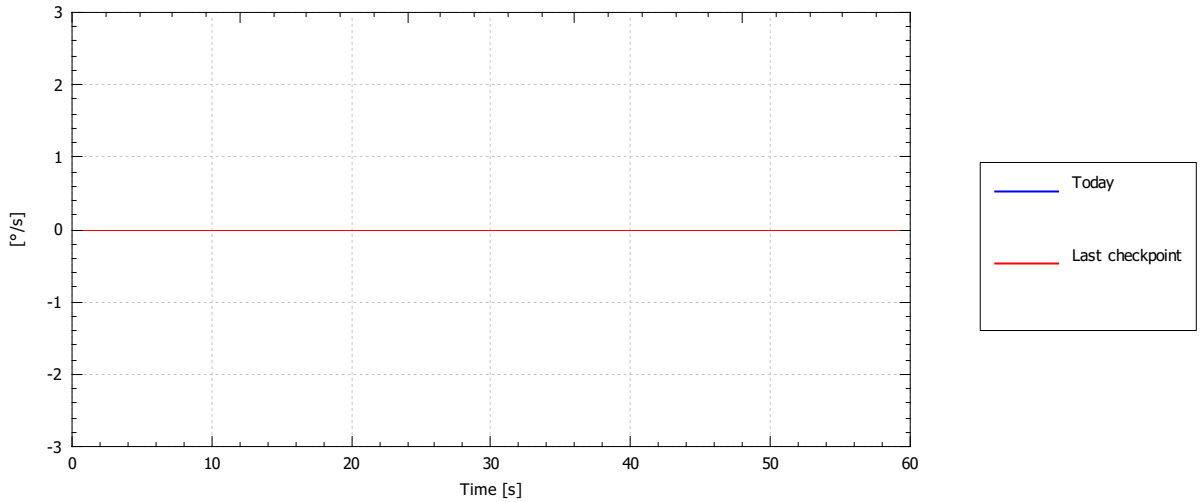
Demanded collective pitch angle



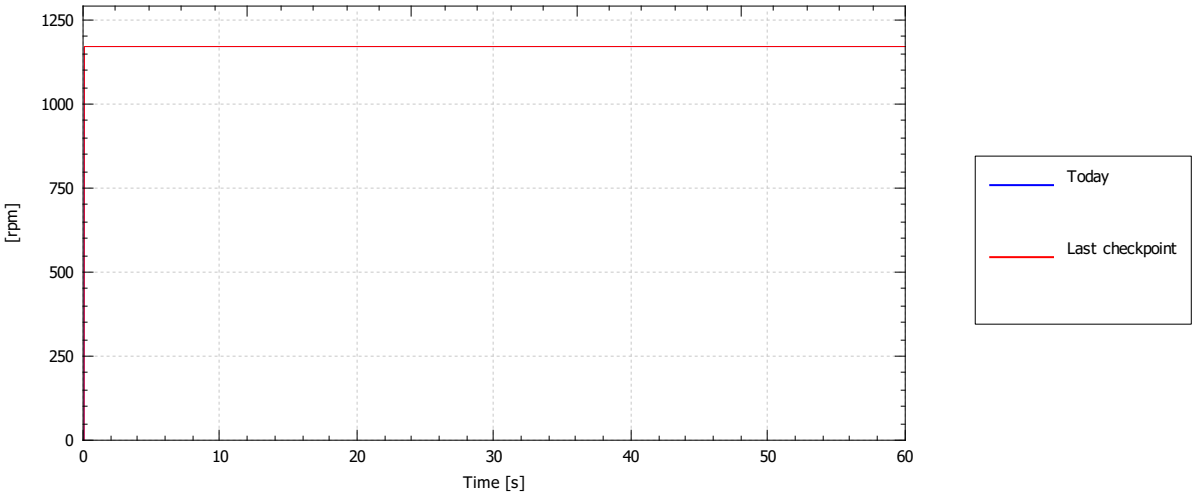

Cumulative demanded collective pitch angle



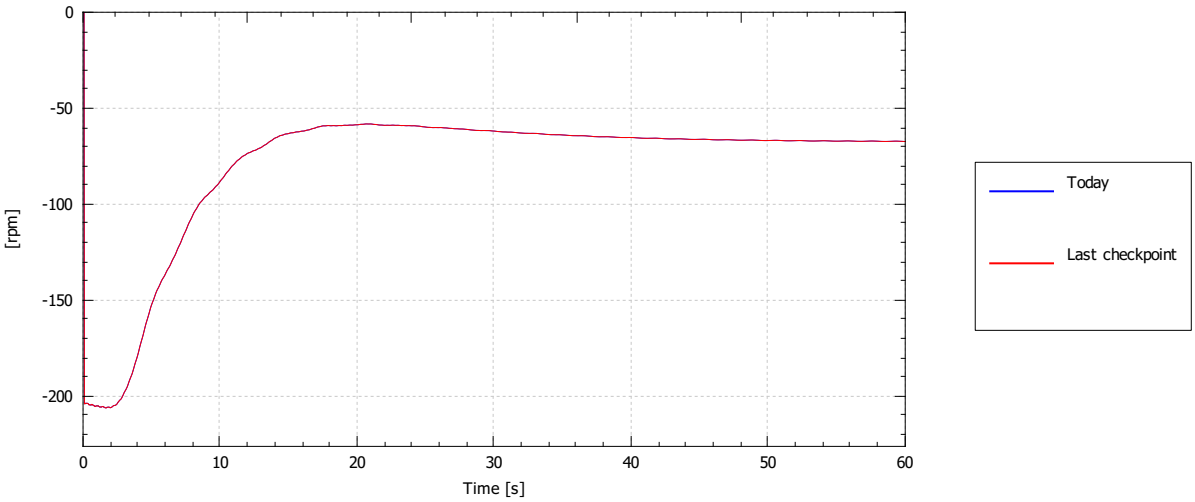

Demanded collective pitch angle rate



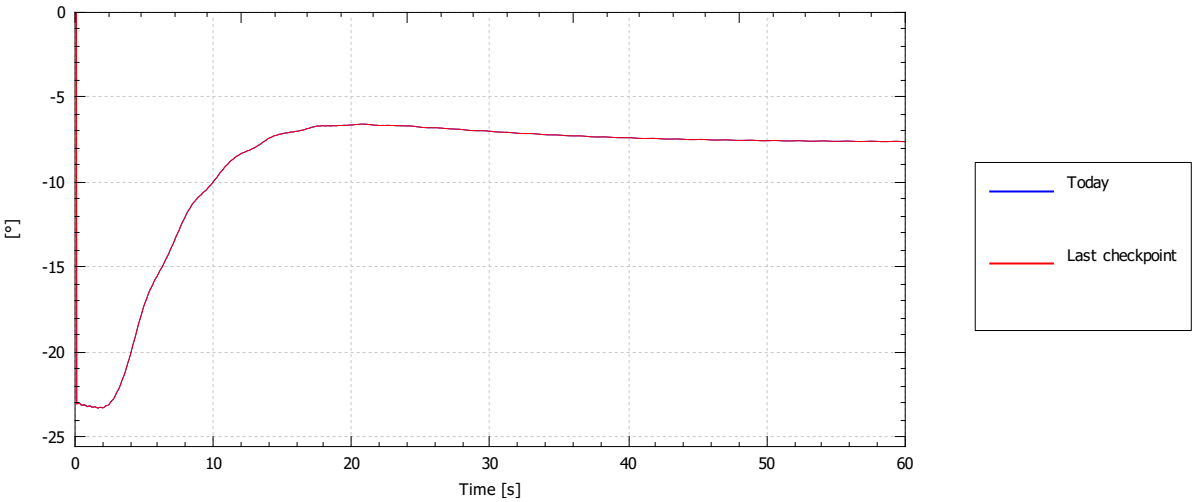
## Set point



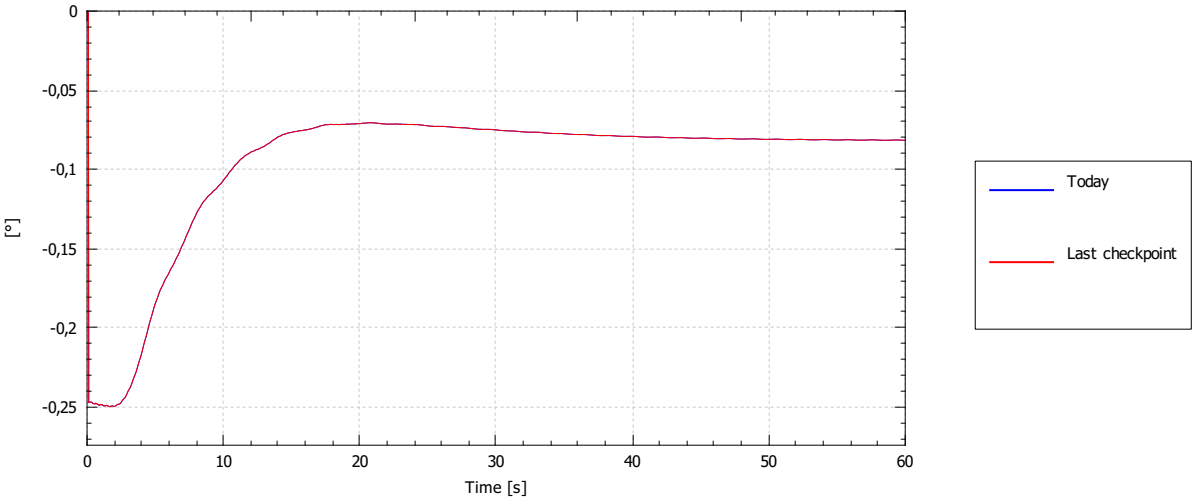

## RPM error



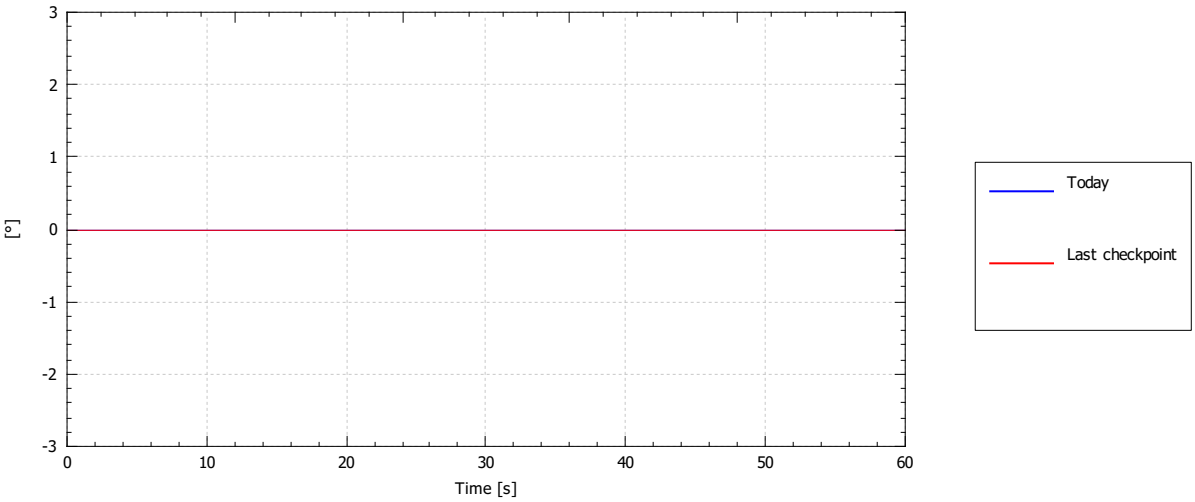

## P term



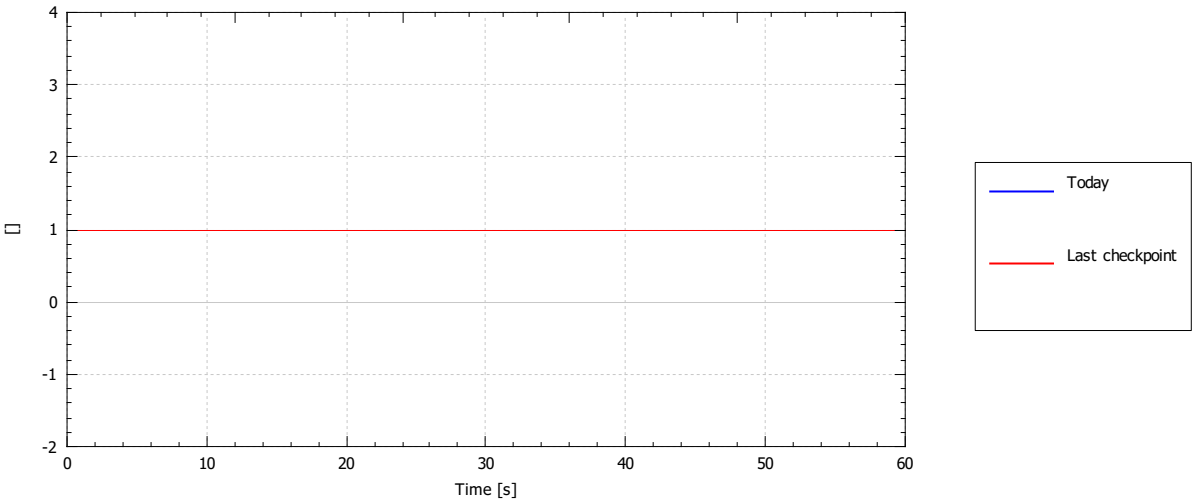
I term




D term

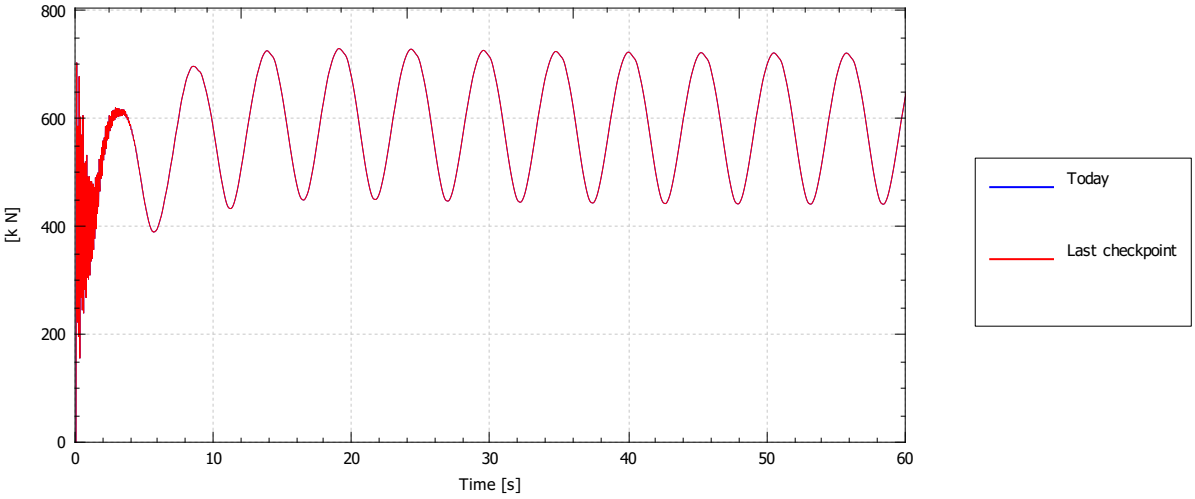



Gain scheduling factor

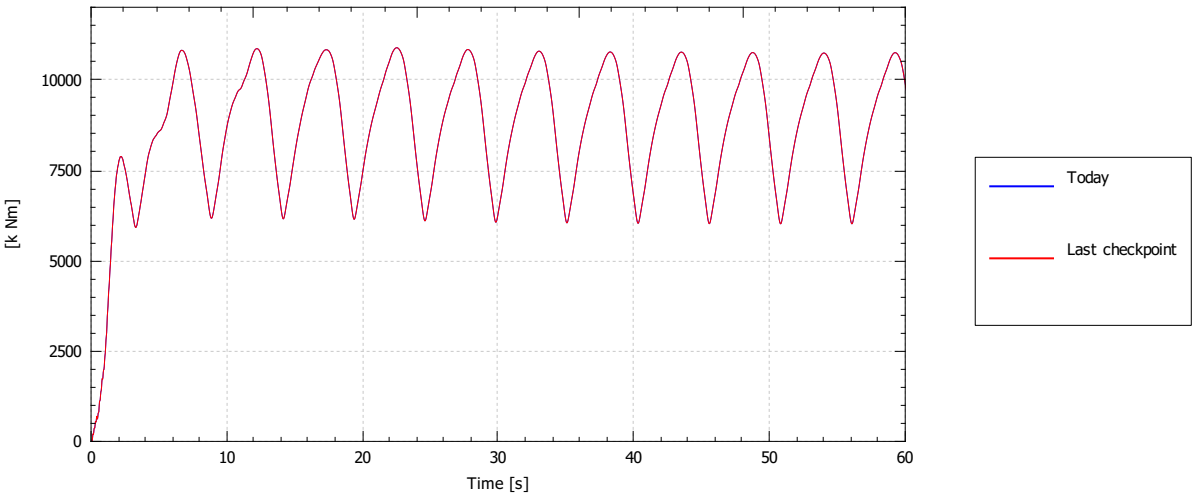


**Blade [Time] [Blade 1]**

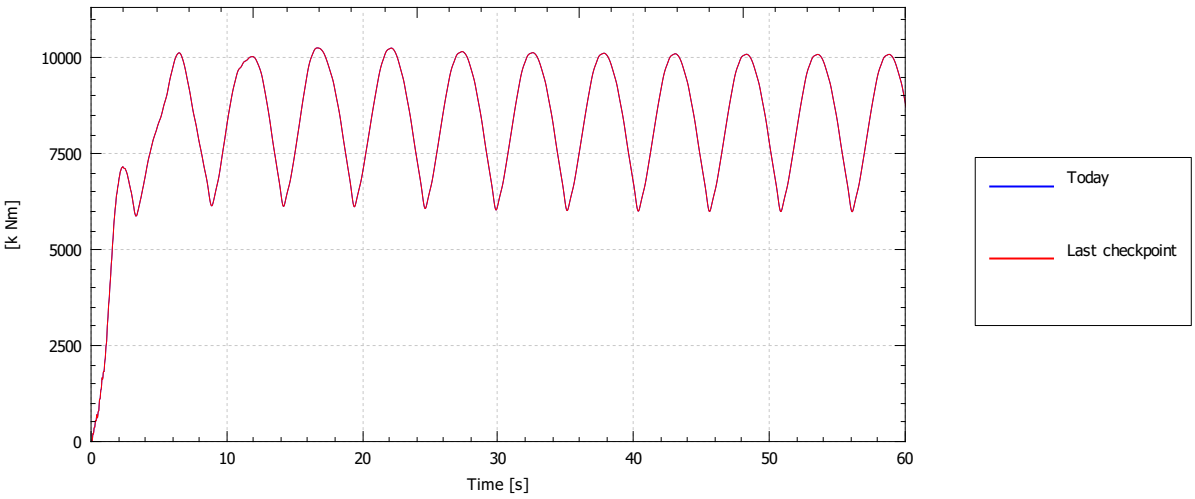
Root force (magnitude)



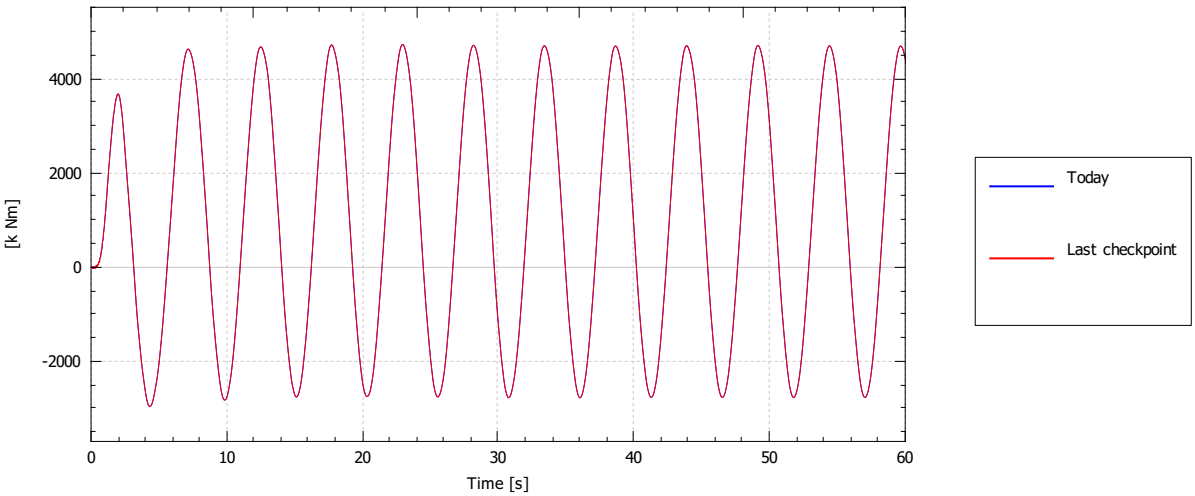

Root moment (magnitude)



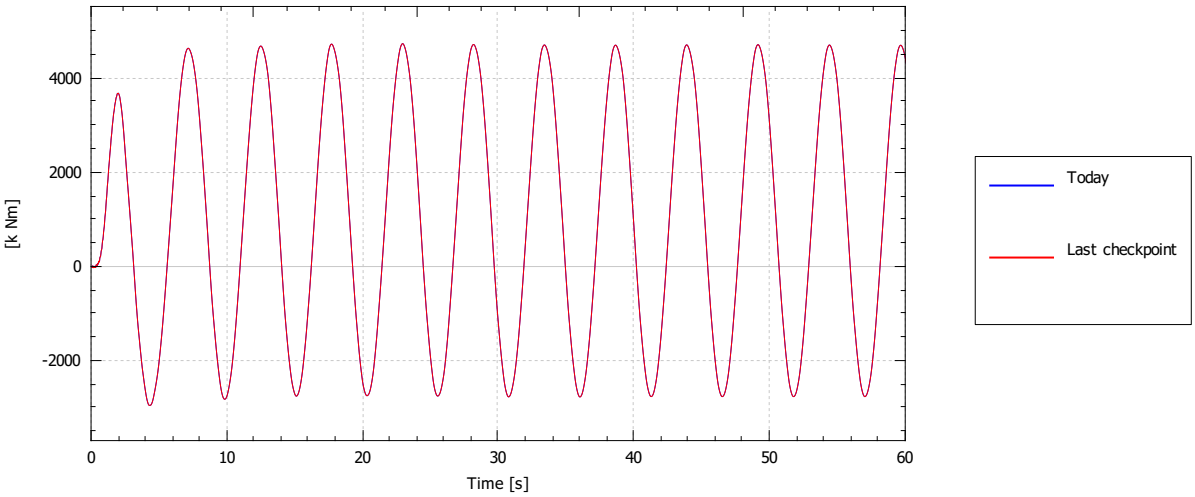

Root moment (out-of-plane)



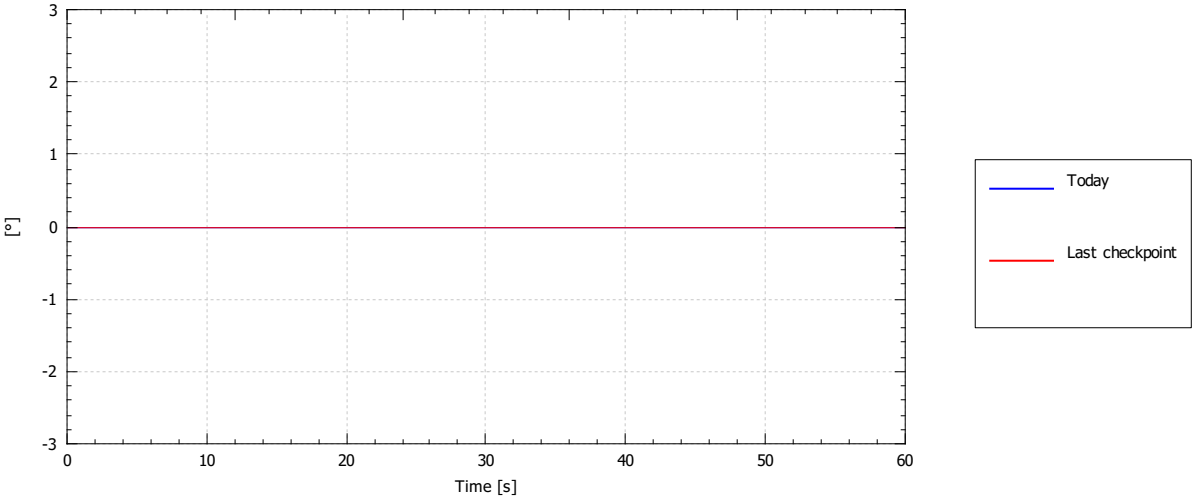
Root moment (in-plane)



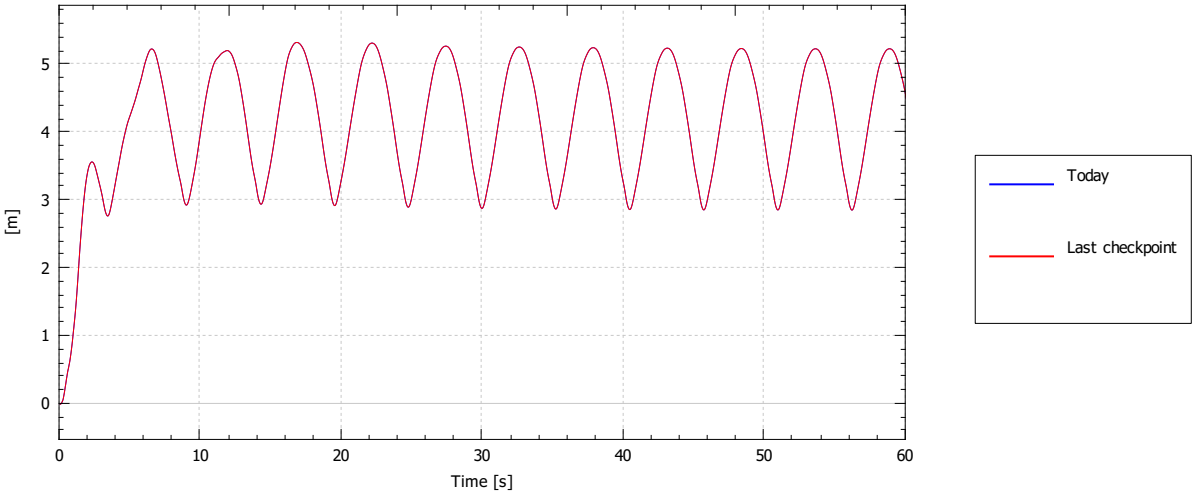

Root moment about shaft



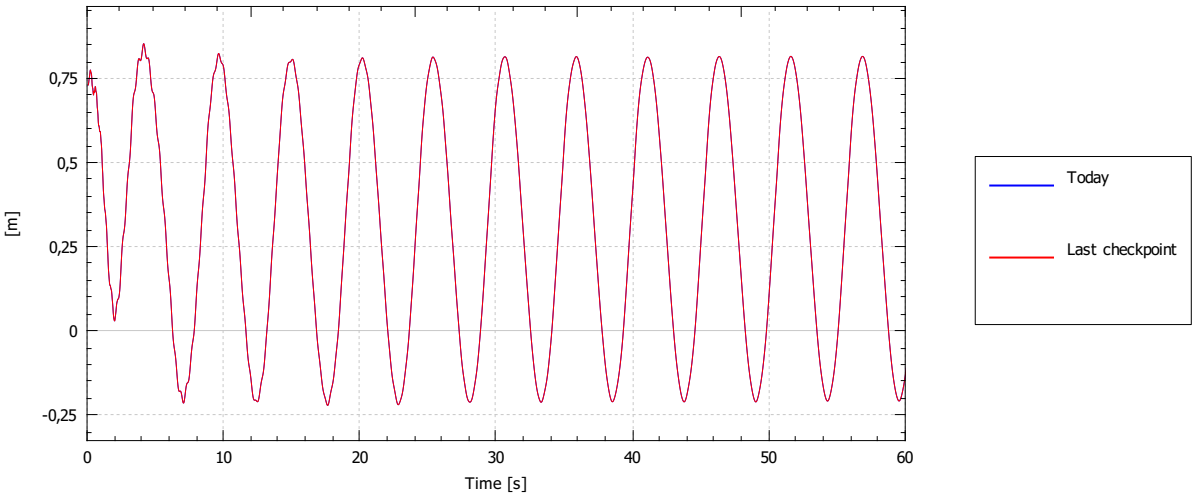

Pitch angle



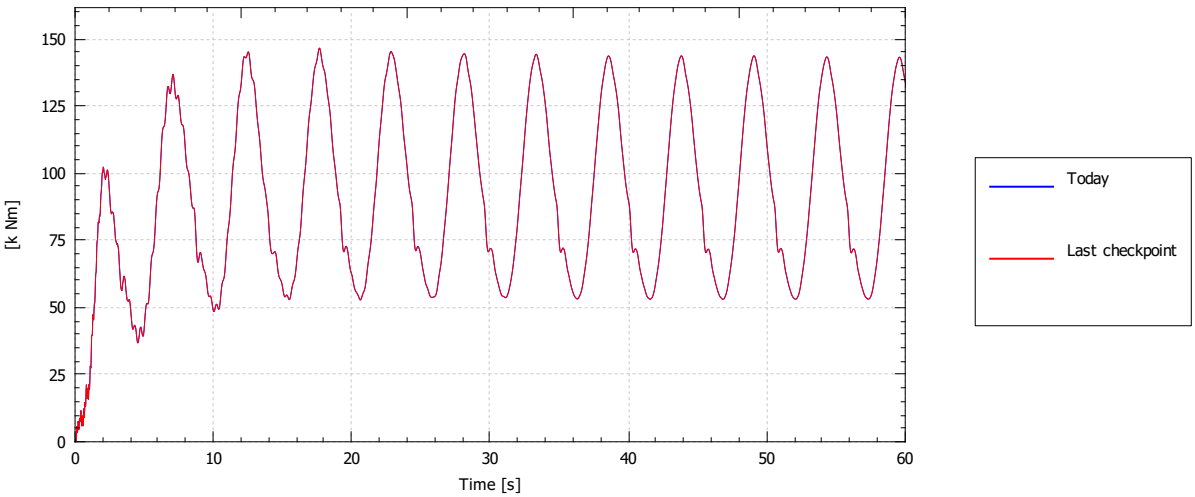
Tip deflection (out-of-plane)




Tip deflection (in-plane)

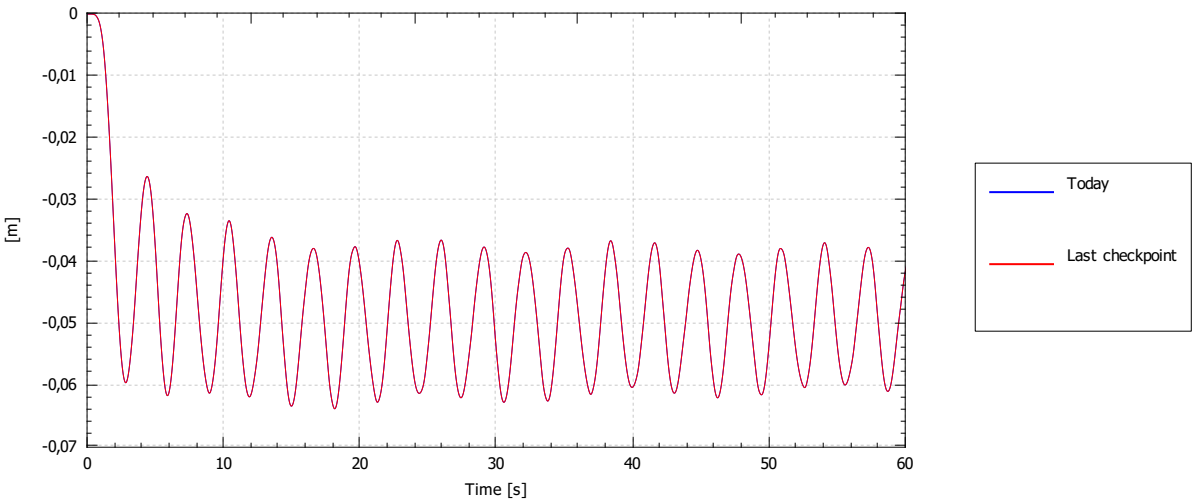



Root torque

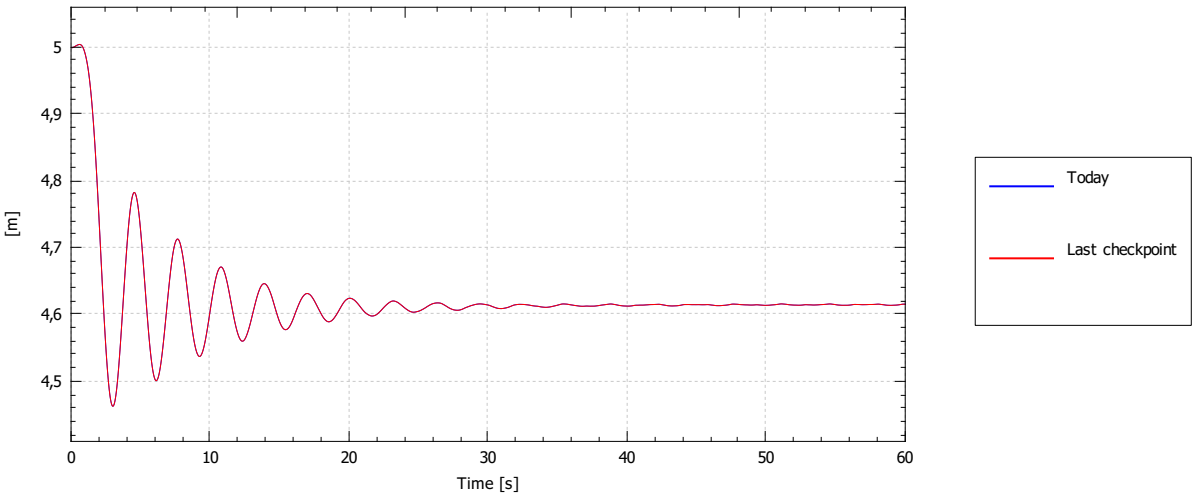


**Node [Node Hub | Hub]**

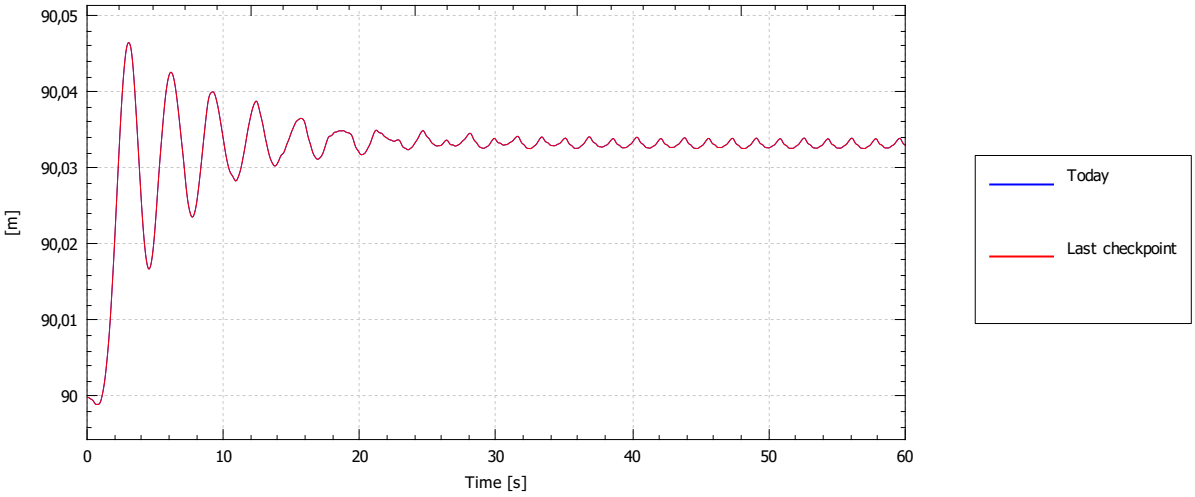
Position (x)



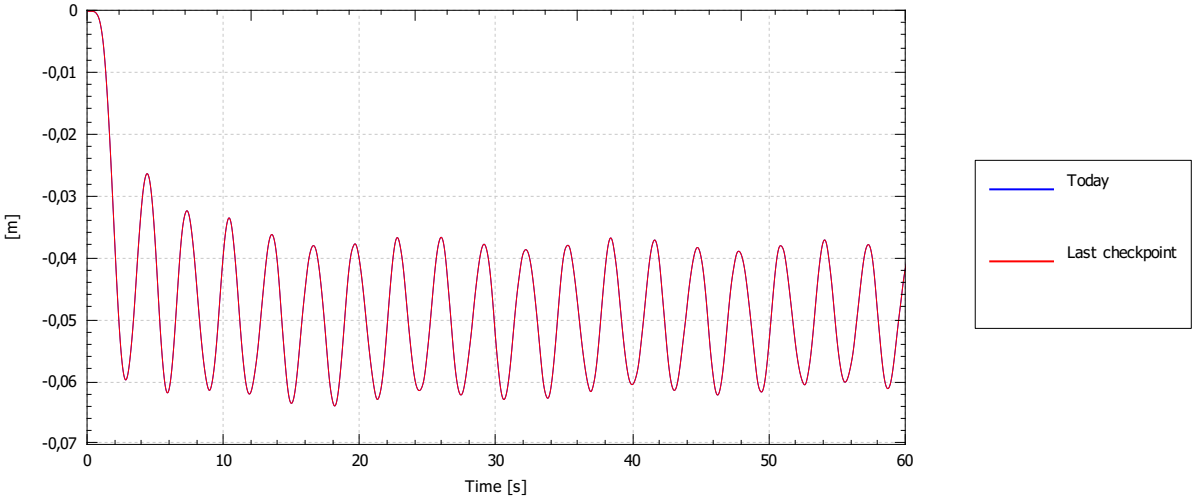

Position (y)



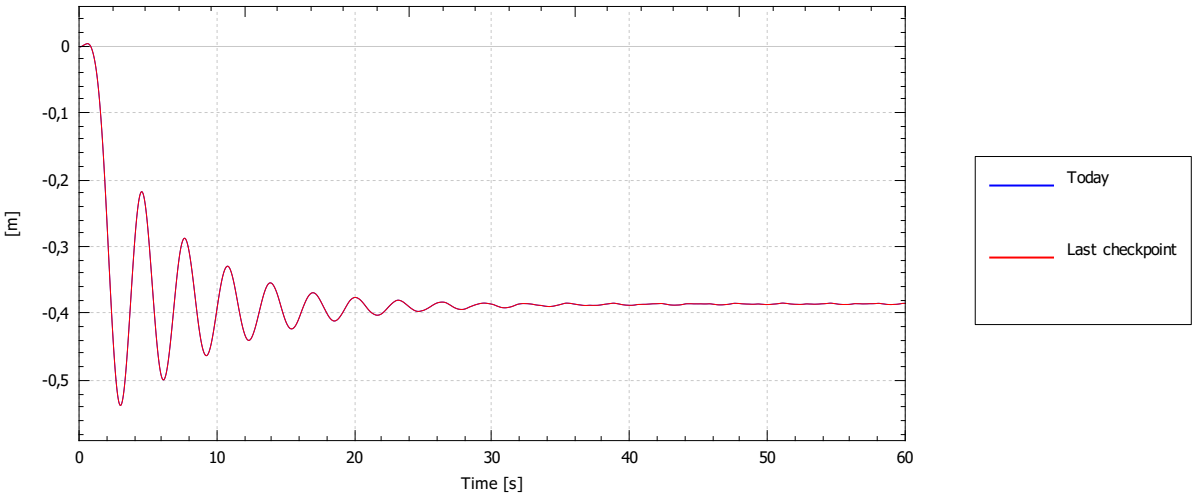

Position (z)



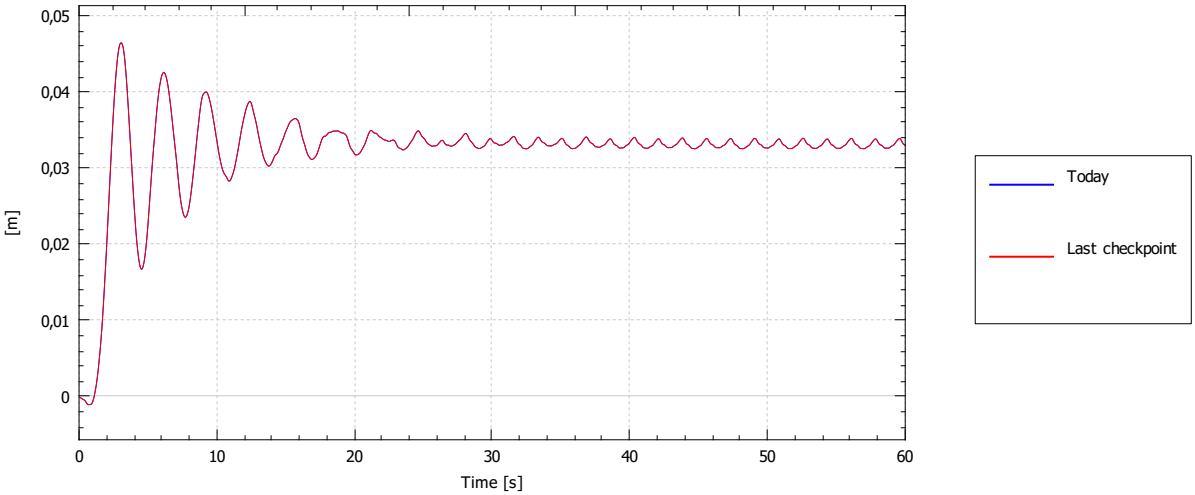
Displacement (u)



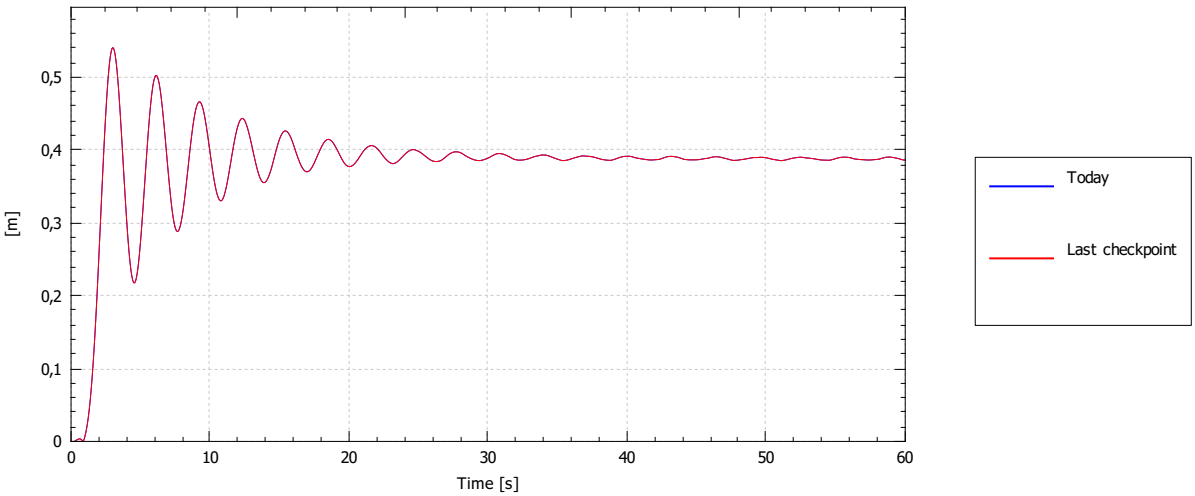

Displacement (v)



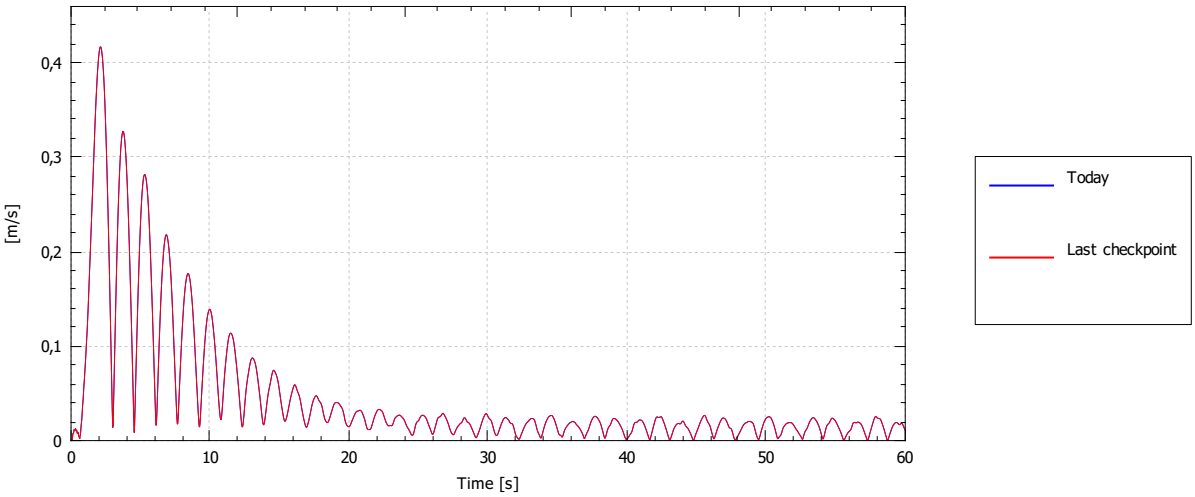

Displacement (w)



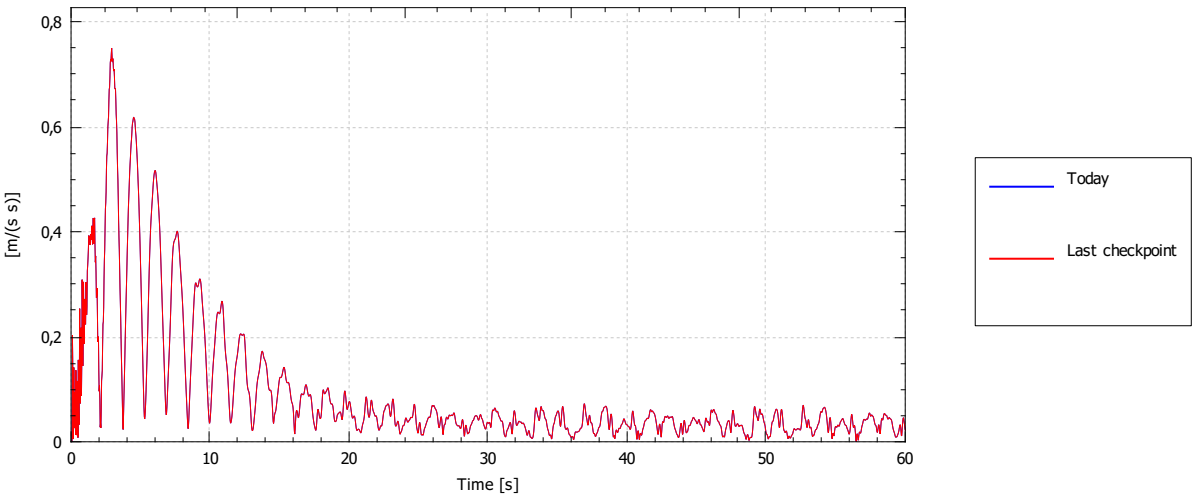
Displacement magnitude



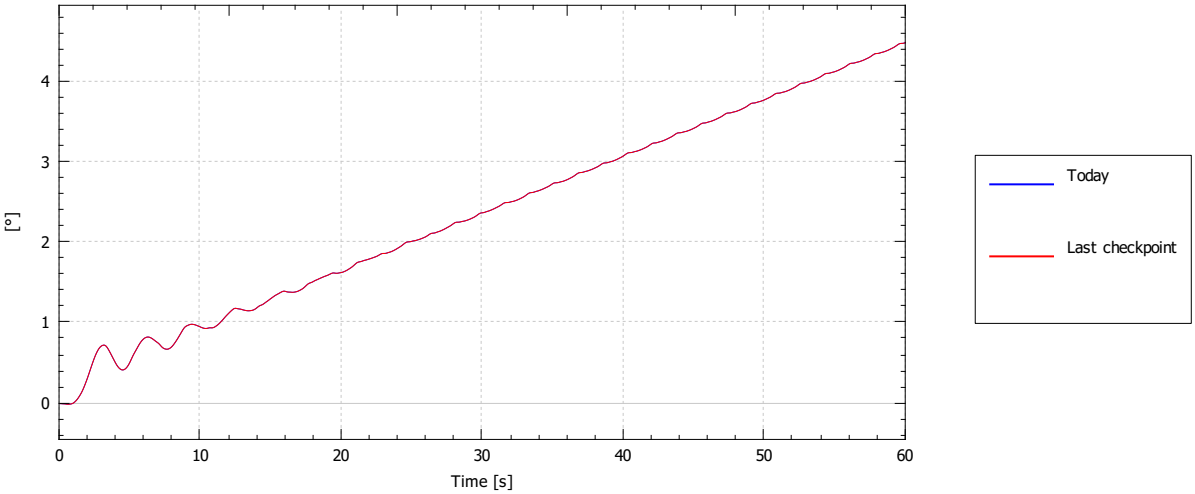

Speed



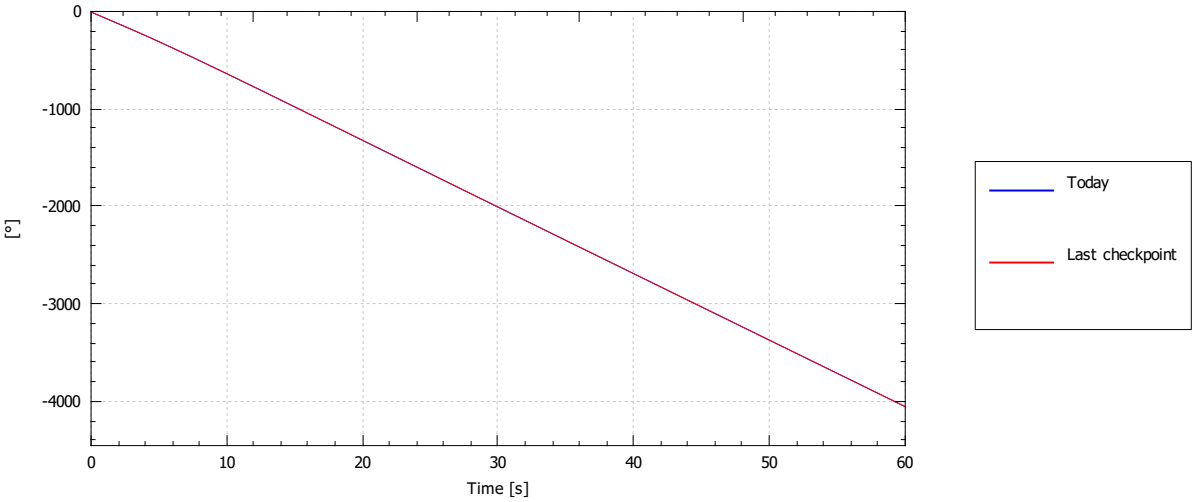

Acceleration, magnitude



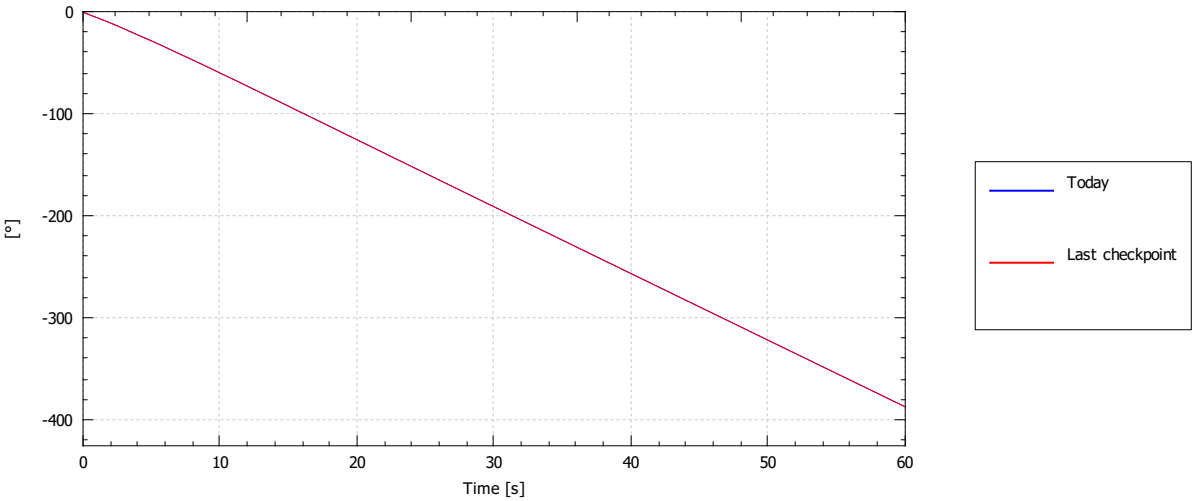
Rotational displacement (ru)



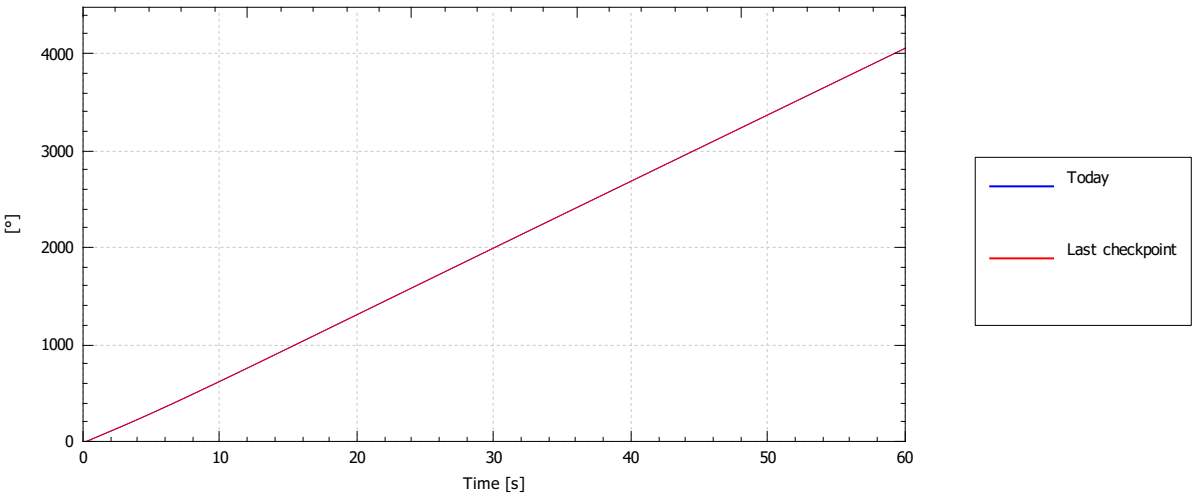

Rotational displacement (rv)



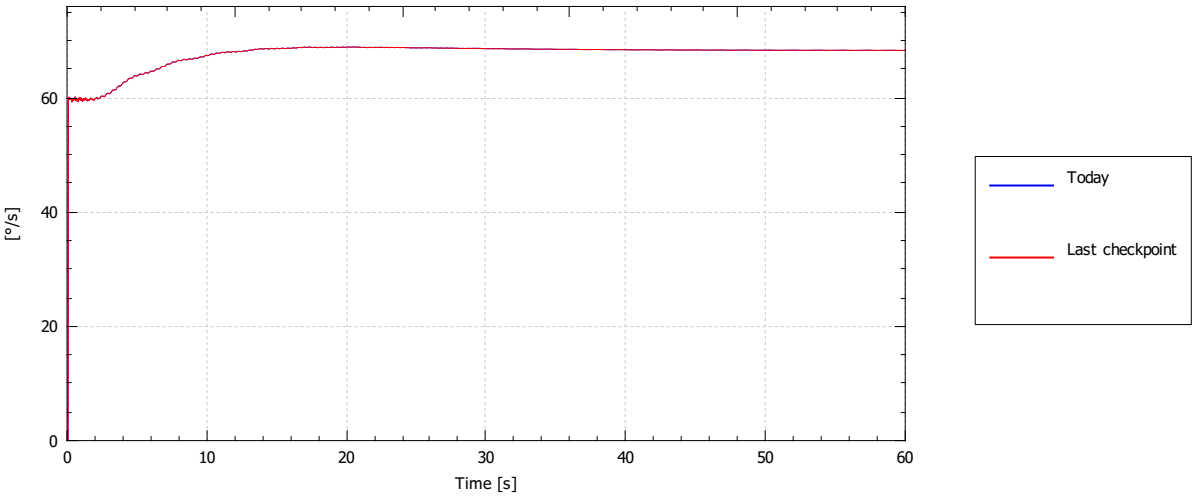

Rotational displacement (rw)



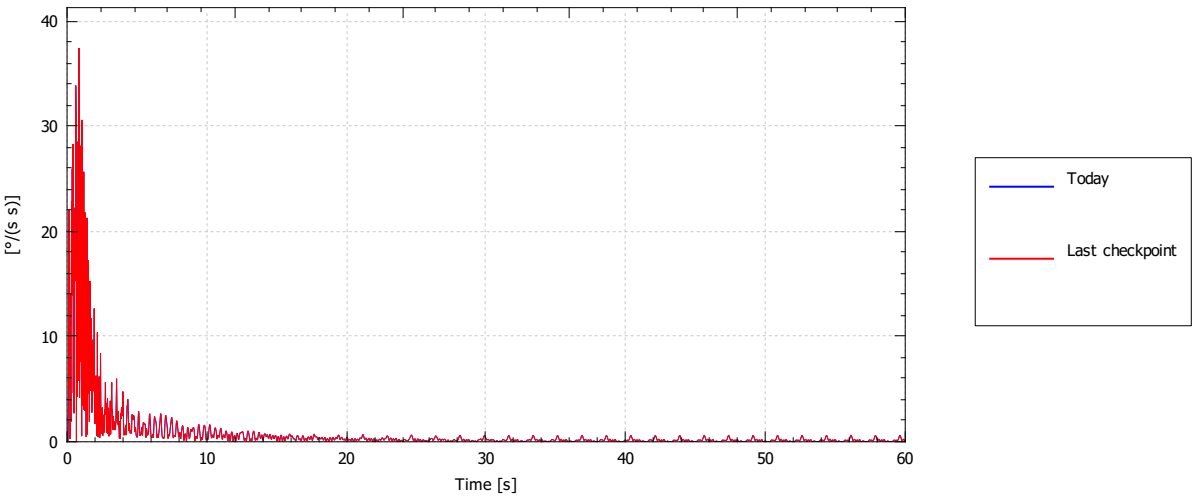
Rotational displacement magnitude



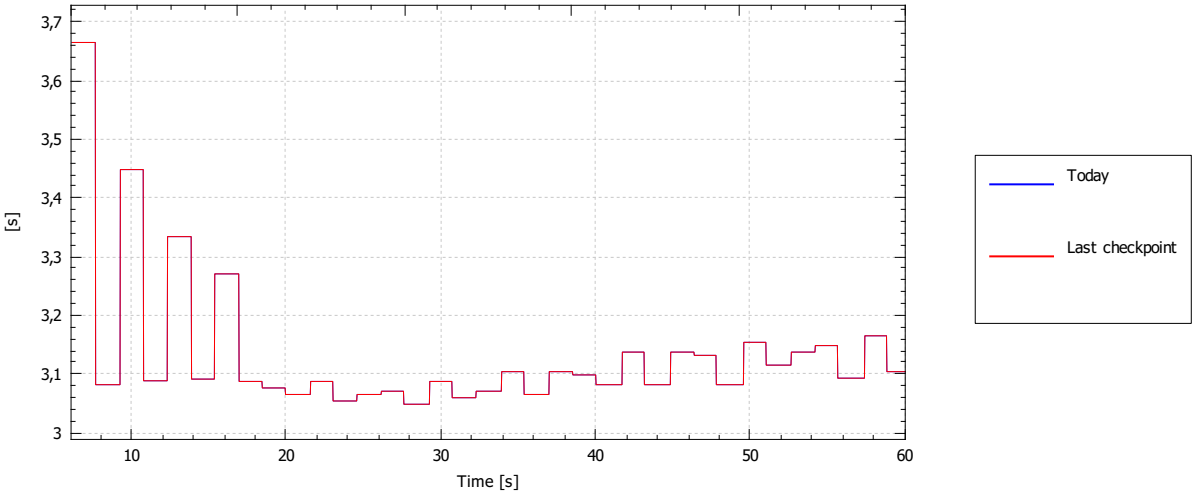

Rotational speed



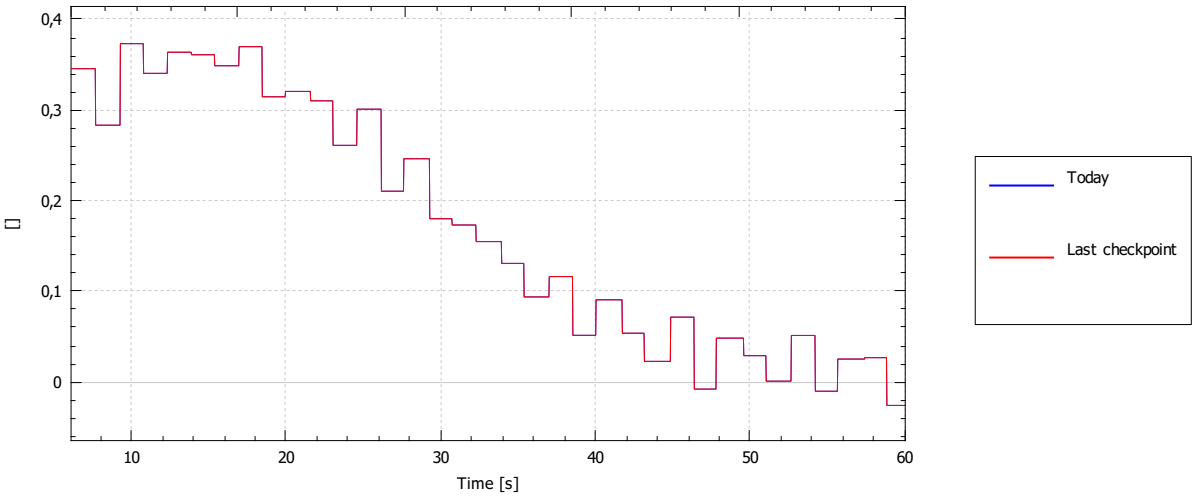

Rotational acceleration mag



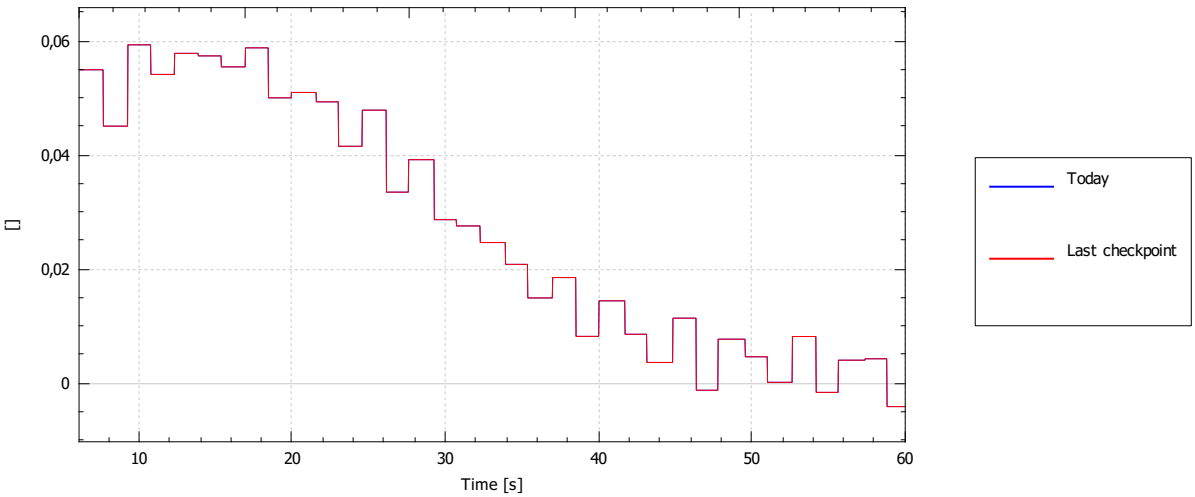
## Displacement period




## Displacement logarithmic decrement

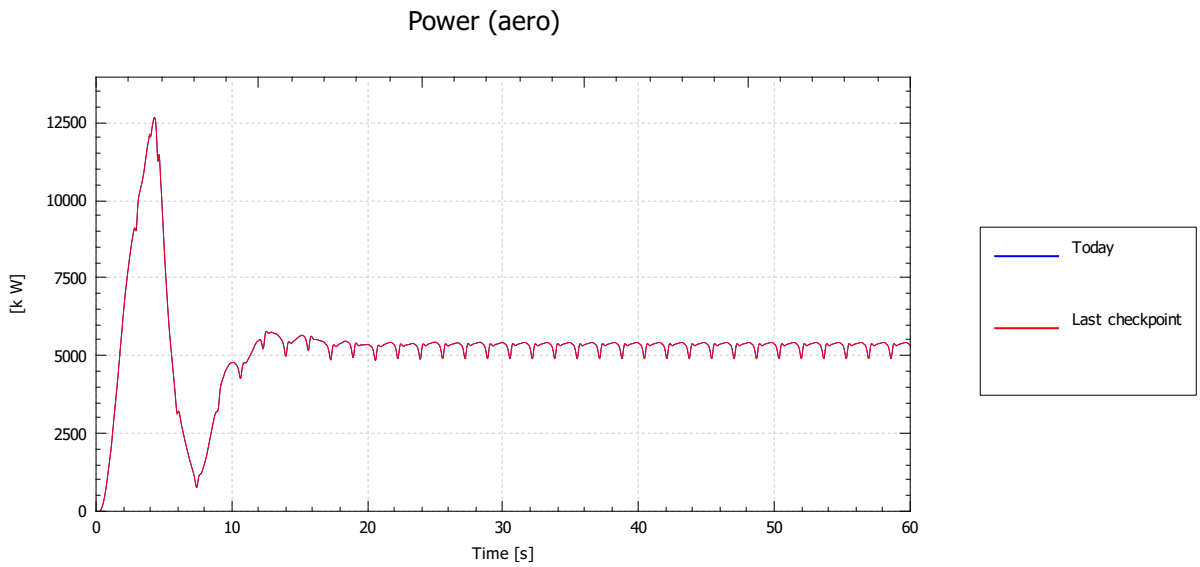


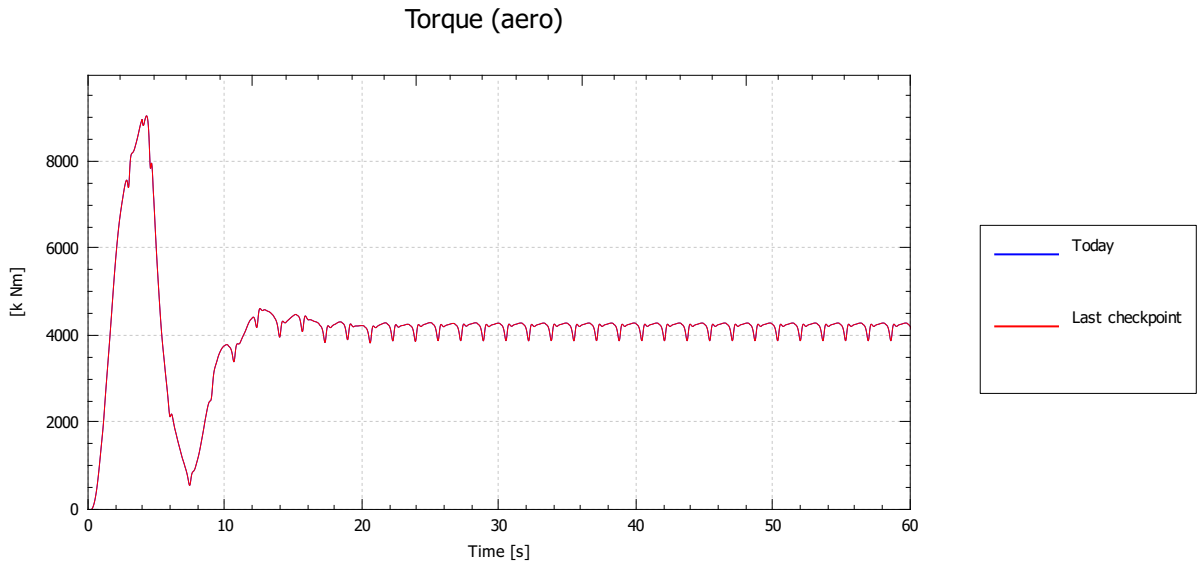

## Displacement damping ratio



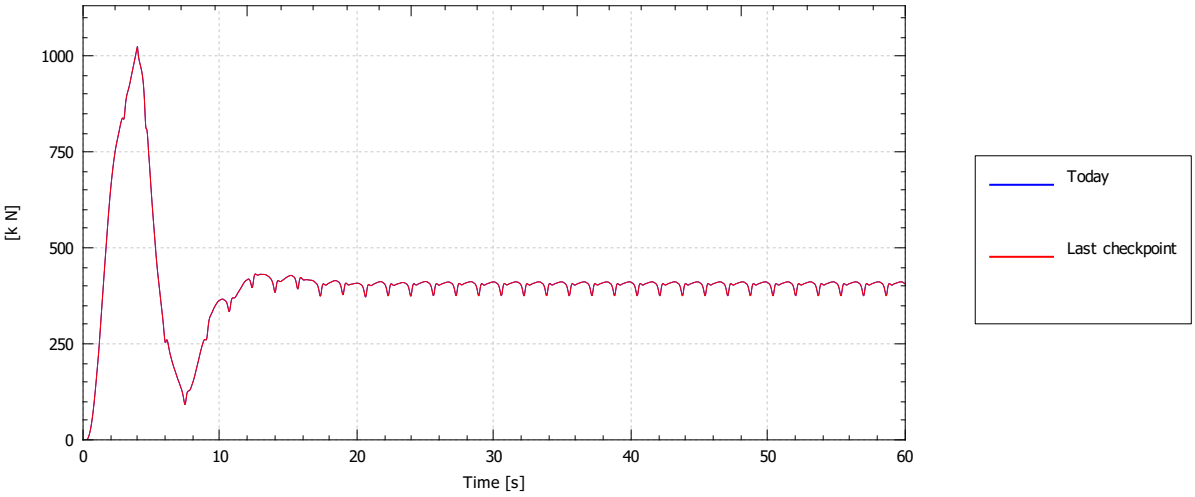
**Load case: reference height scheme**

**Rotor**

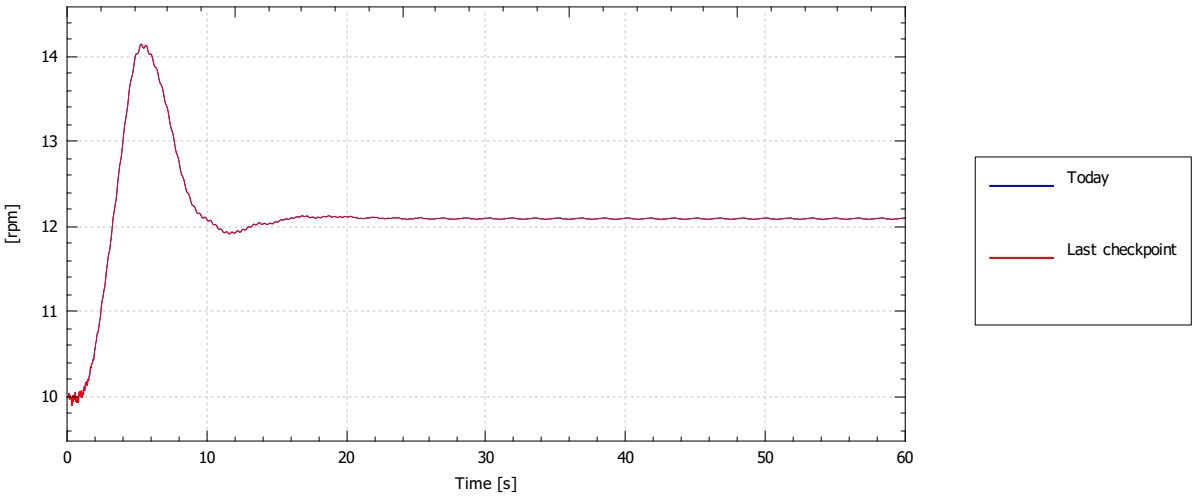


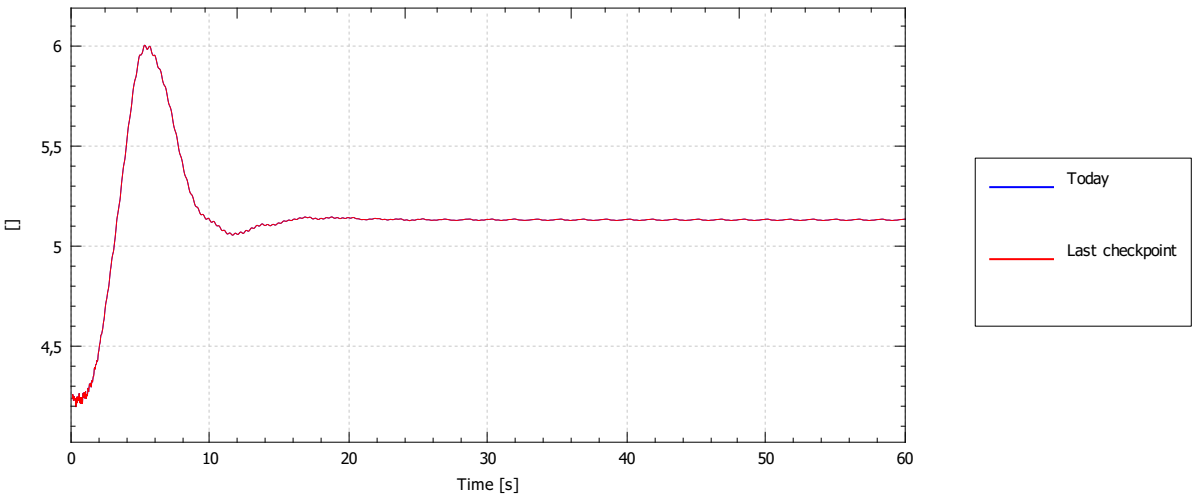
## Thrust (aero)



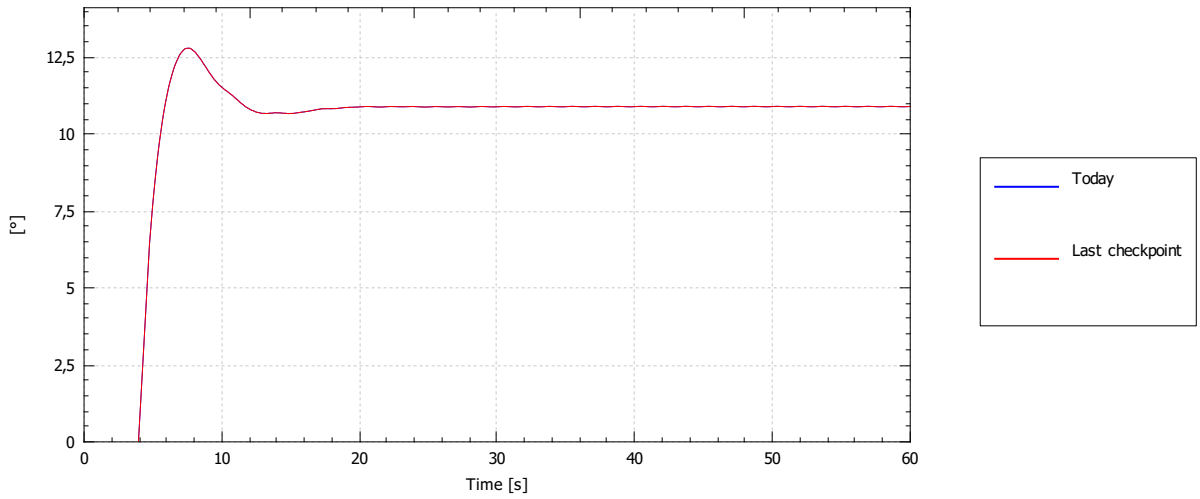

## RPM



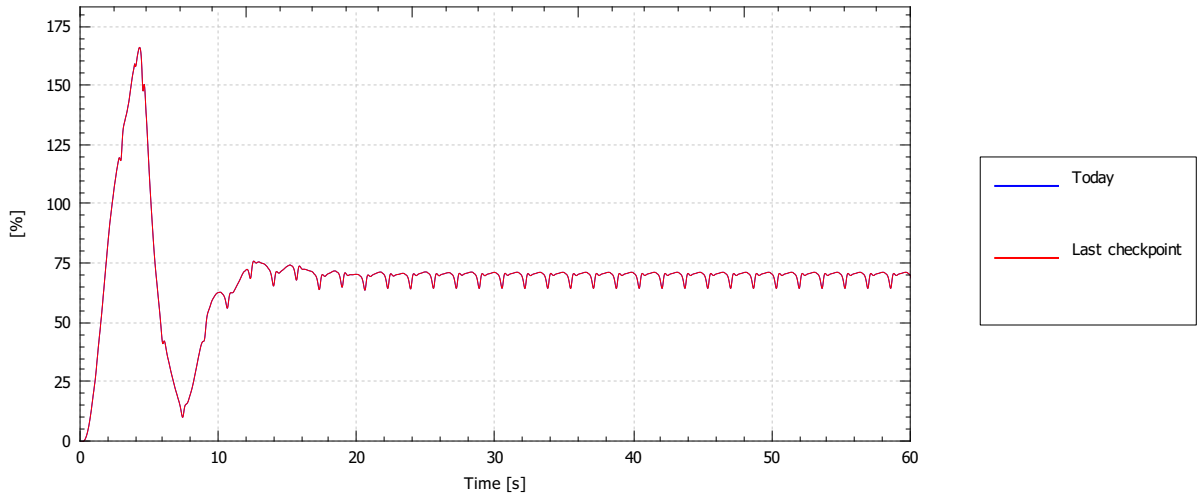

## TSR



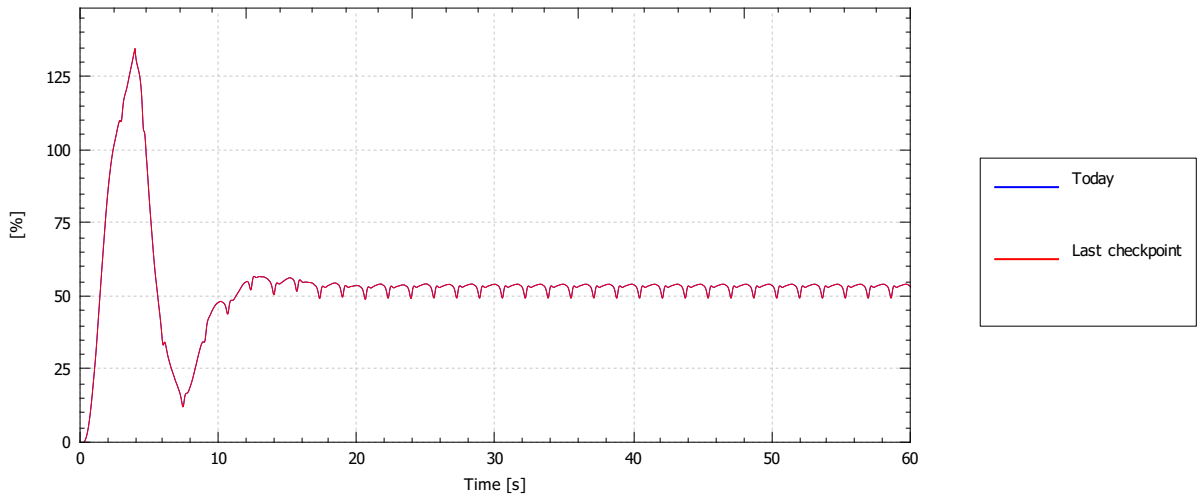
Representative demanded pitch angle



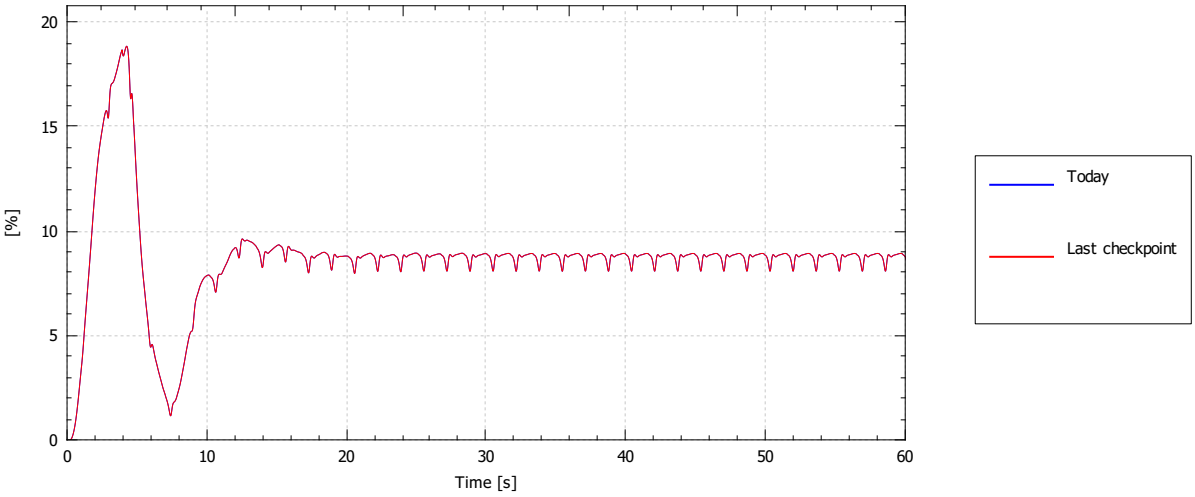

Power coef. (CP)



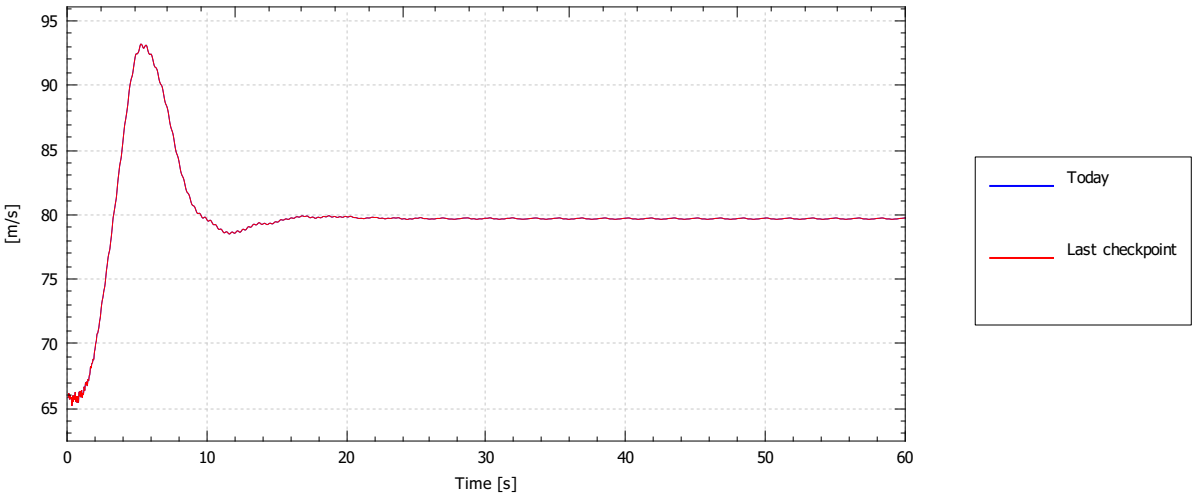

Thrust coef. (CT)



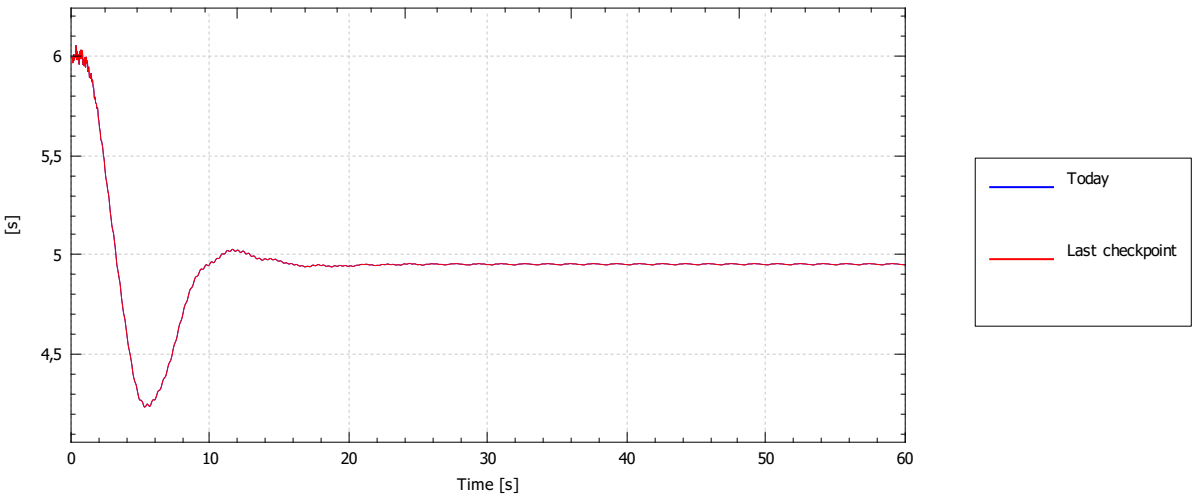
Torque coef. (CQ)



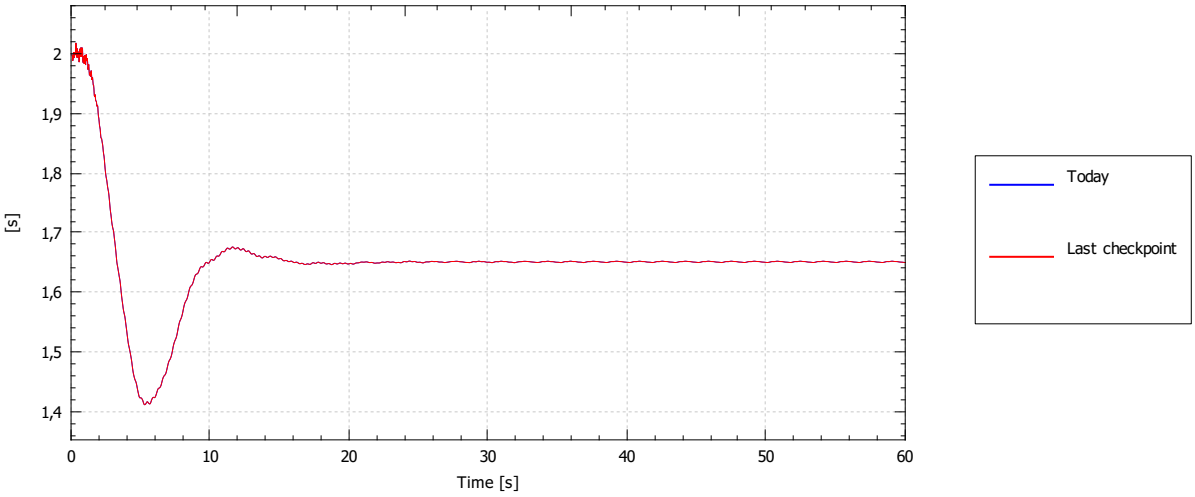

Tip speed



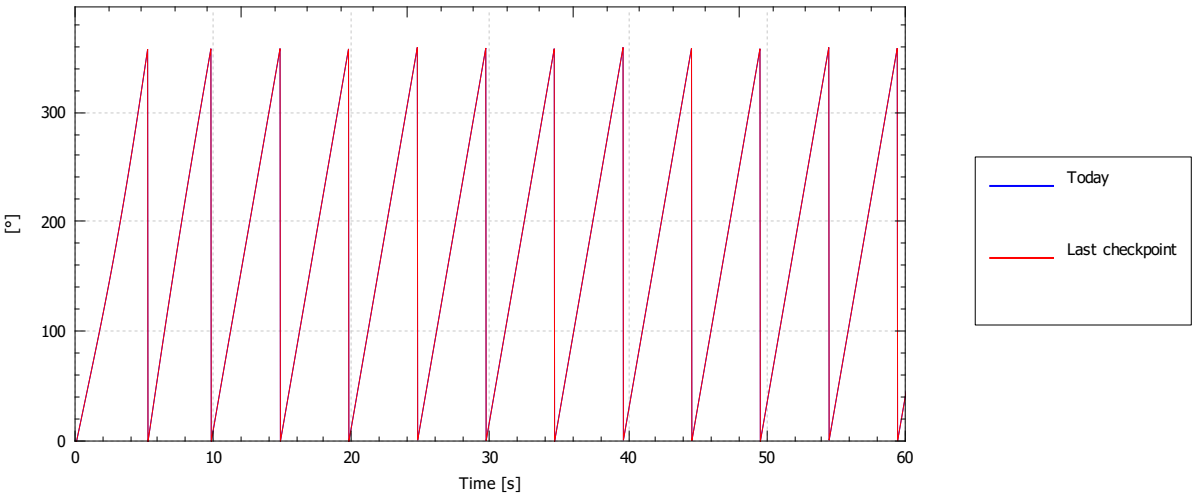

1P (one revolution)



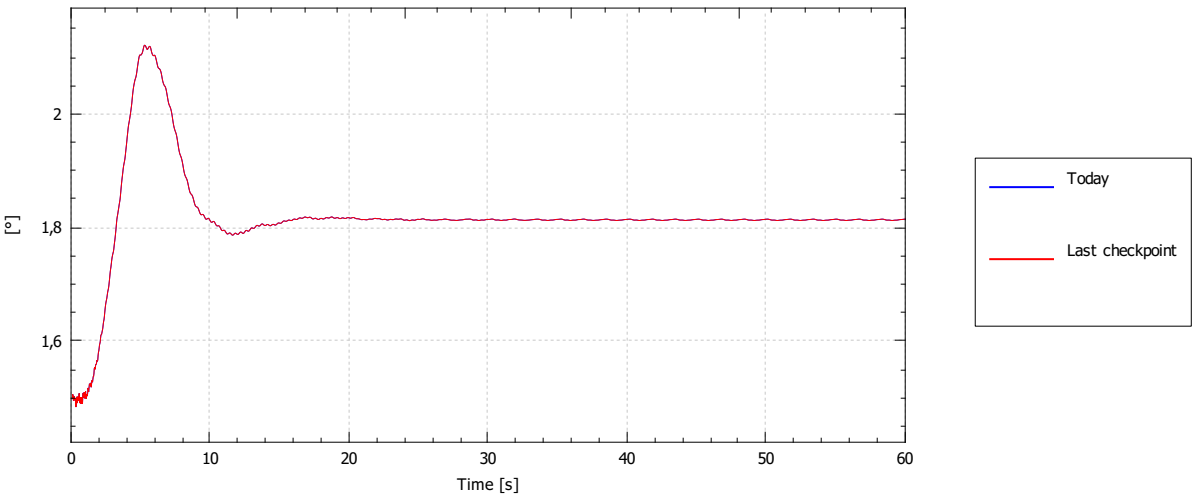
nP (blade passing)



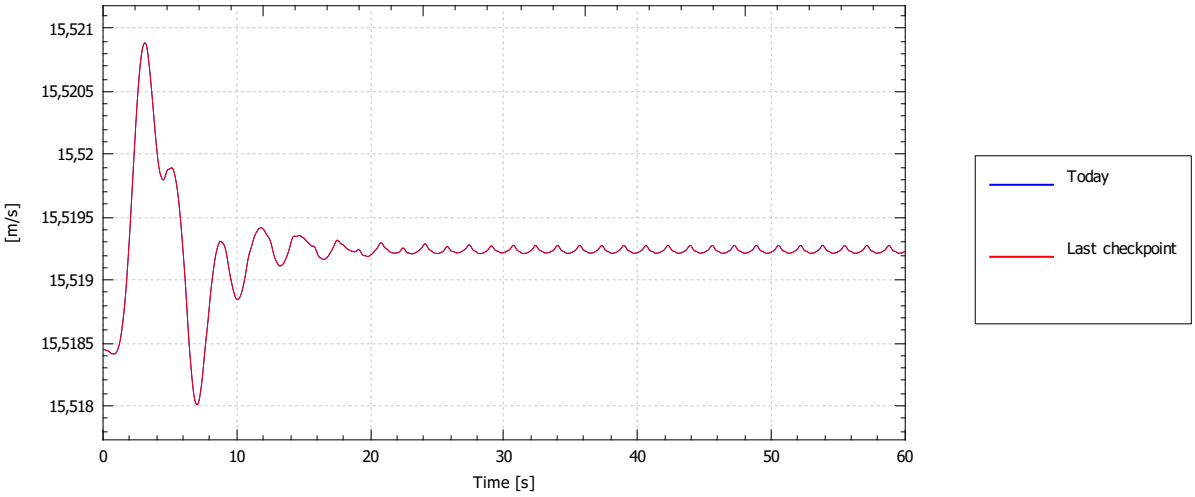

Azimuth angle



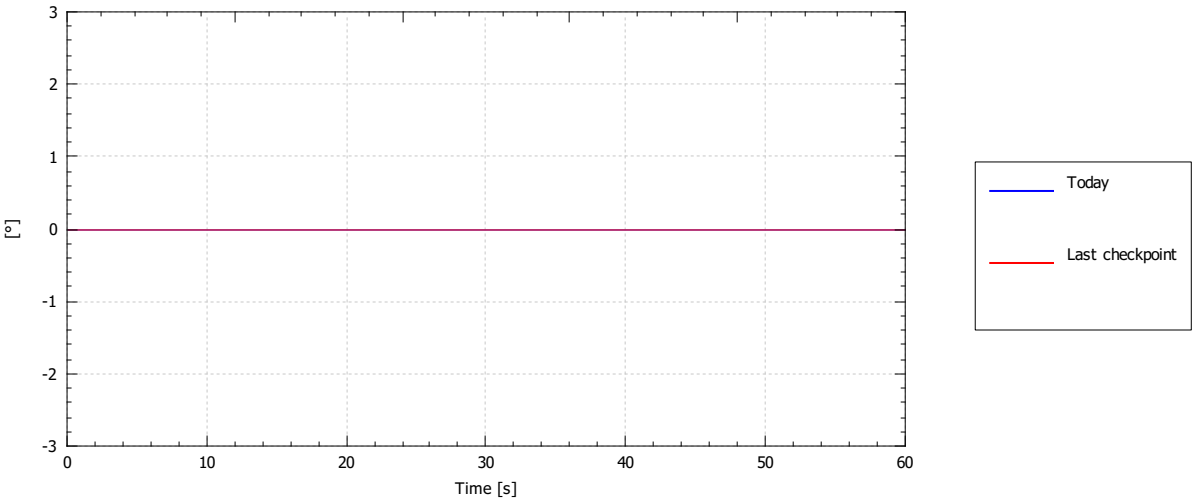

Rotation per timestep



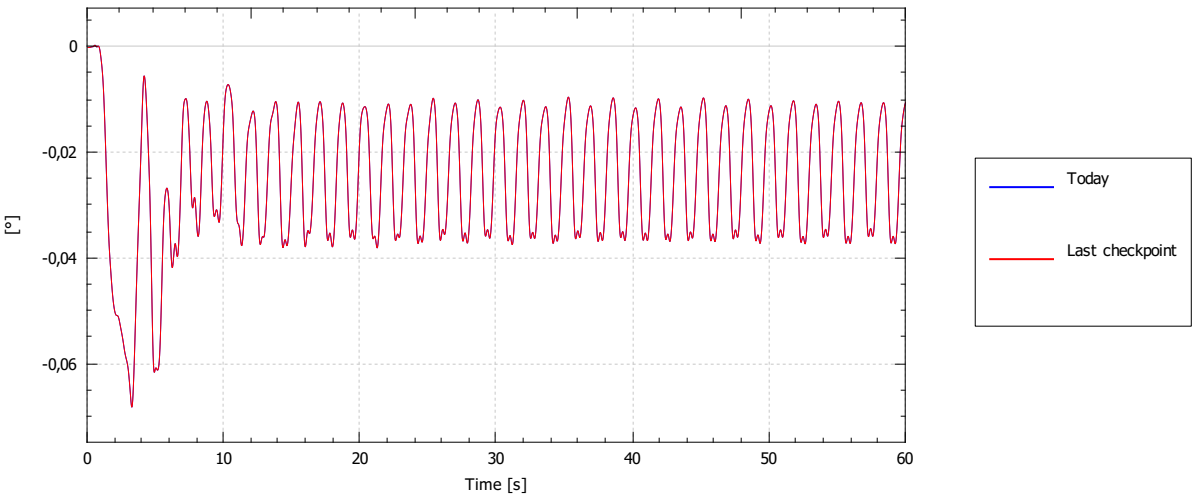
Wind speed at hub, magnitude



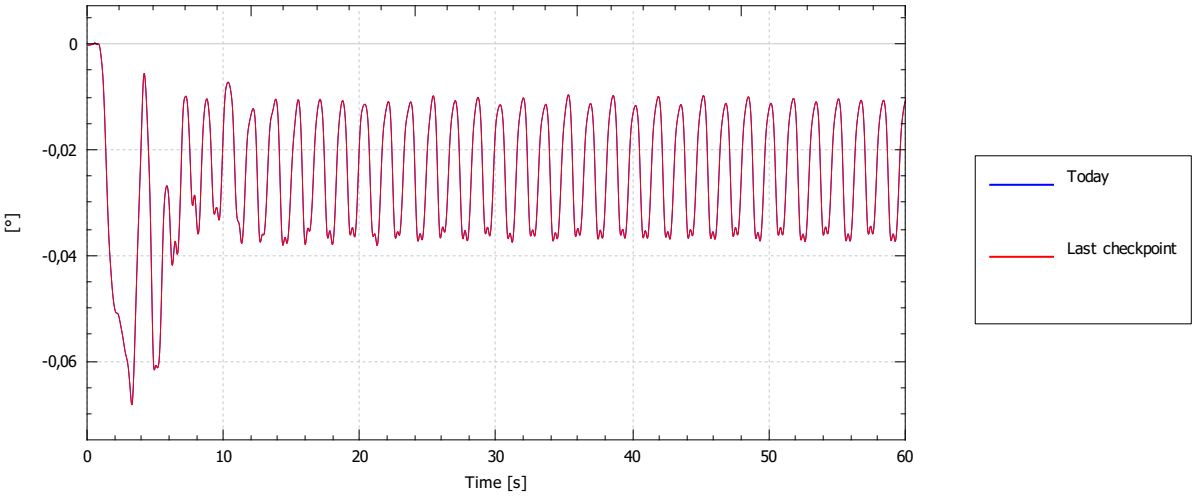

Wind angle at hub



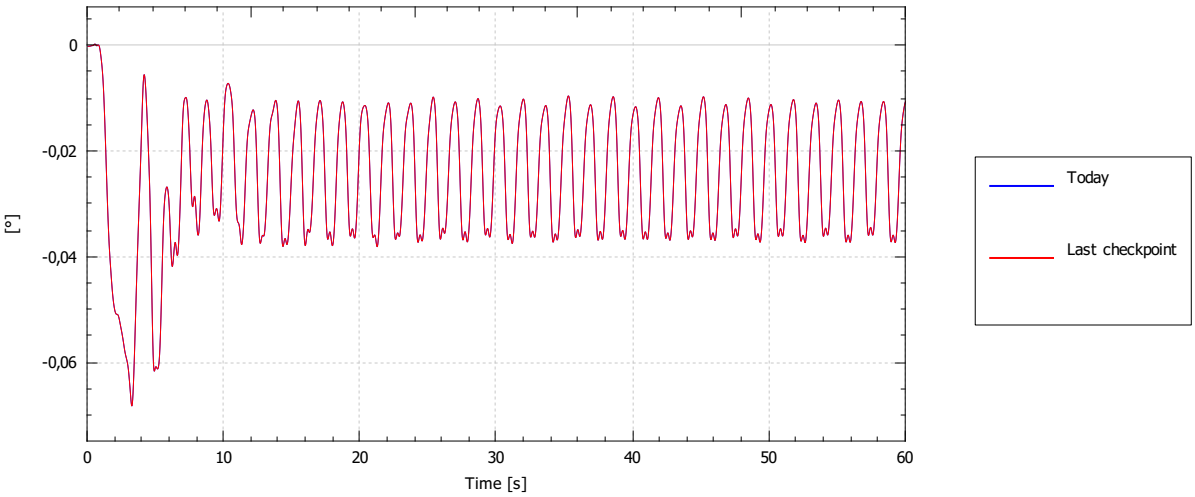

Yaw angle relative to forward



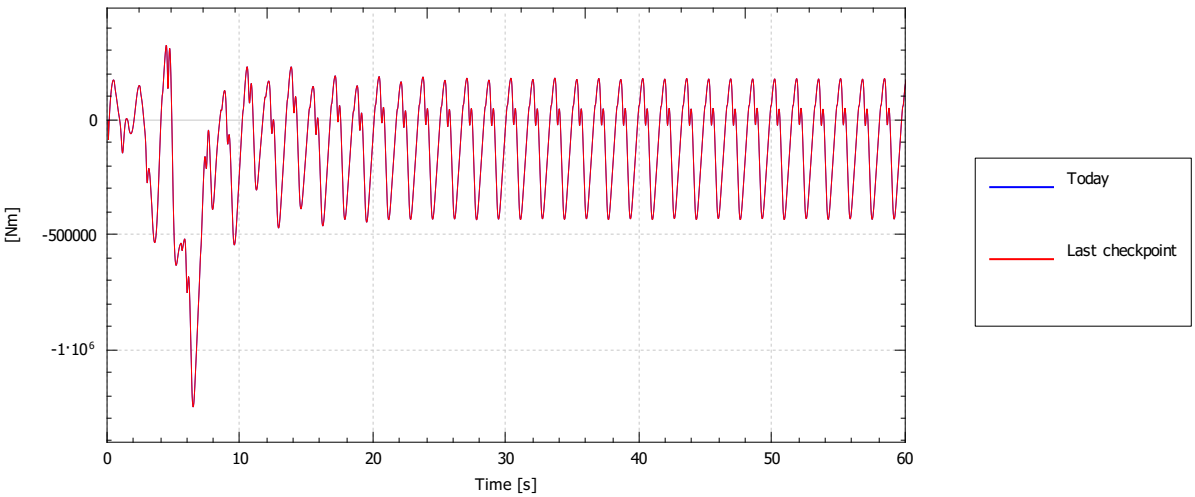
Yaw angle to reference direction




Yaw error

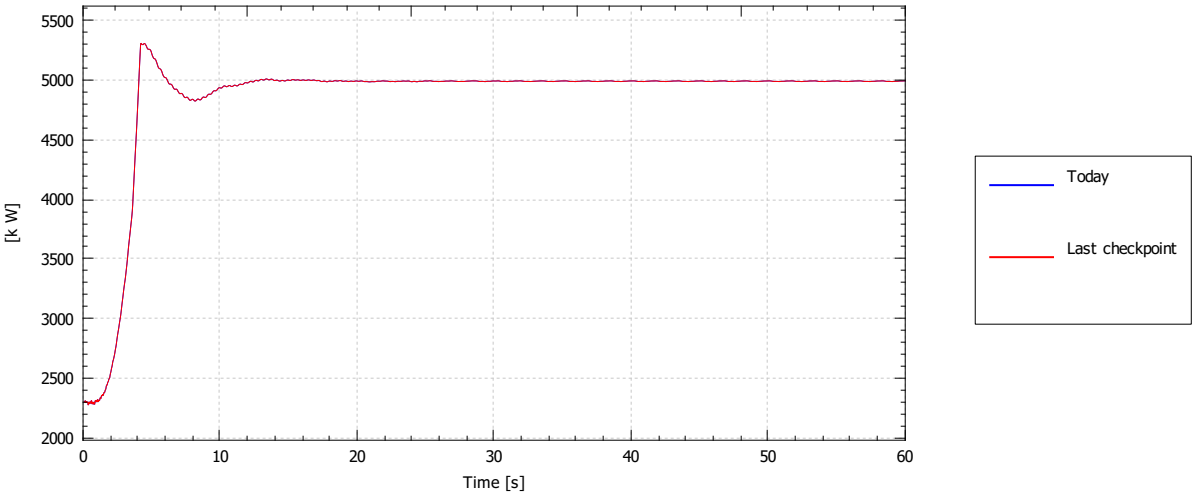



Torque about yaw axis

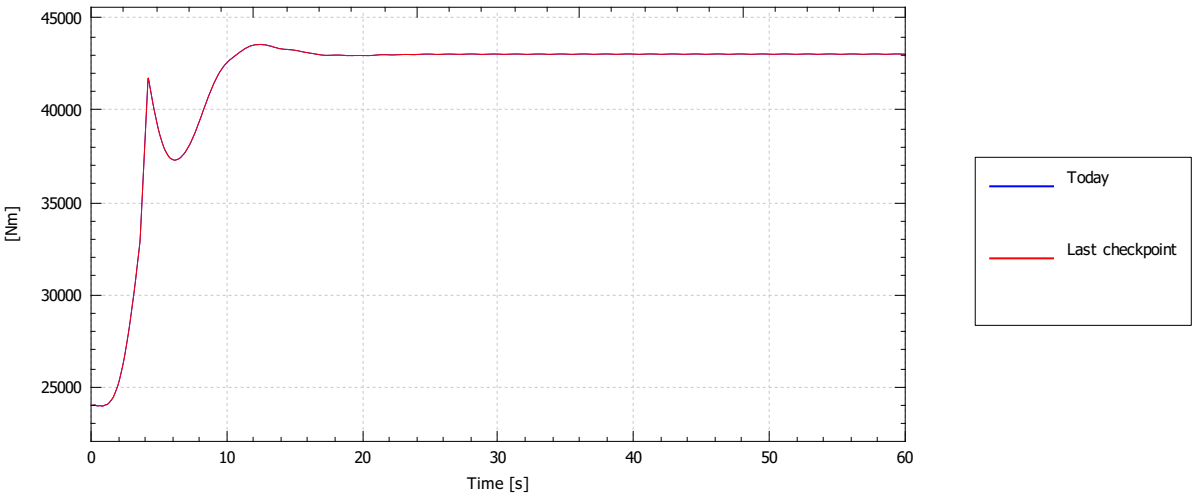


**Generator**

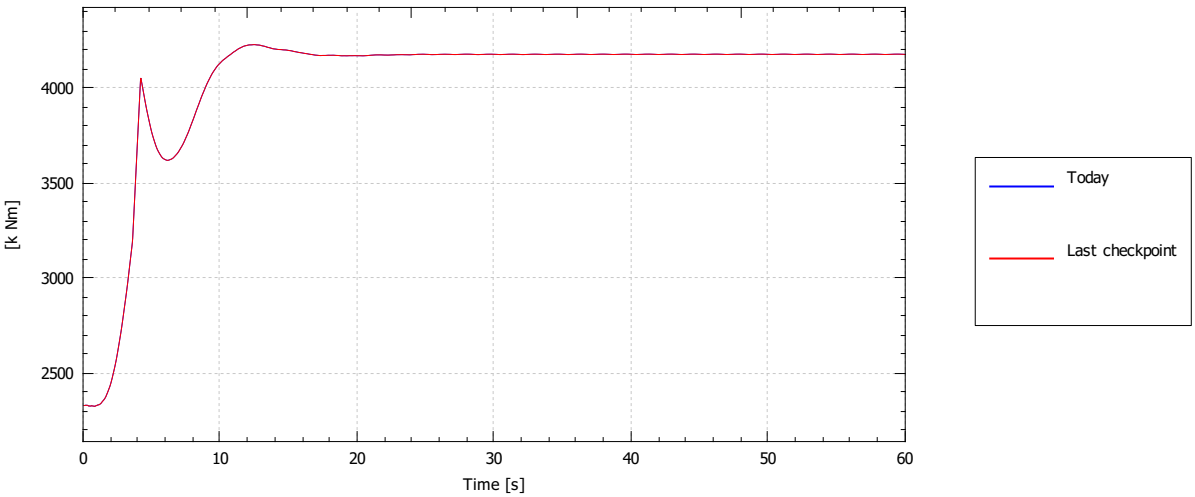
Power (electrical)



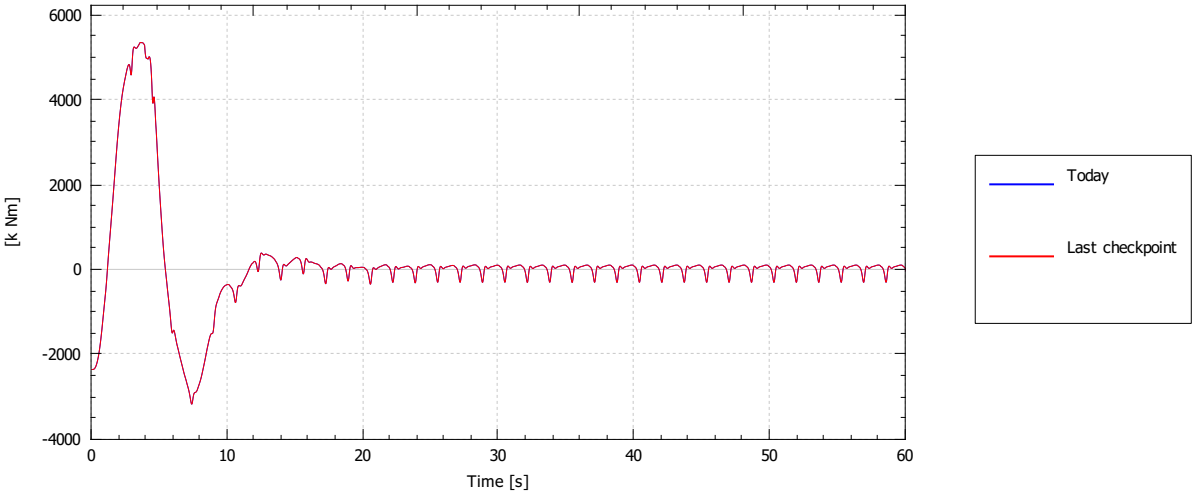

Torque



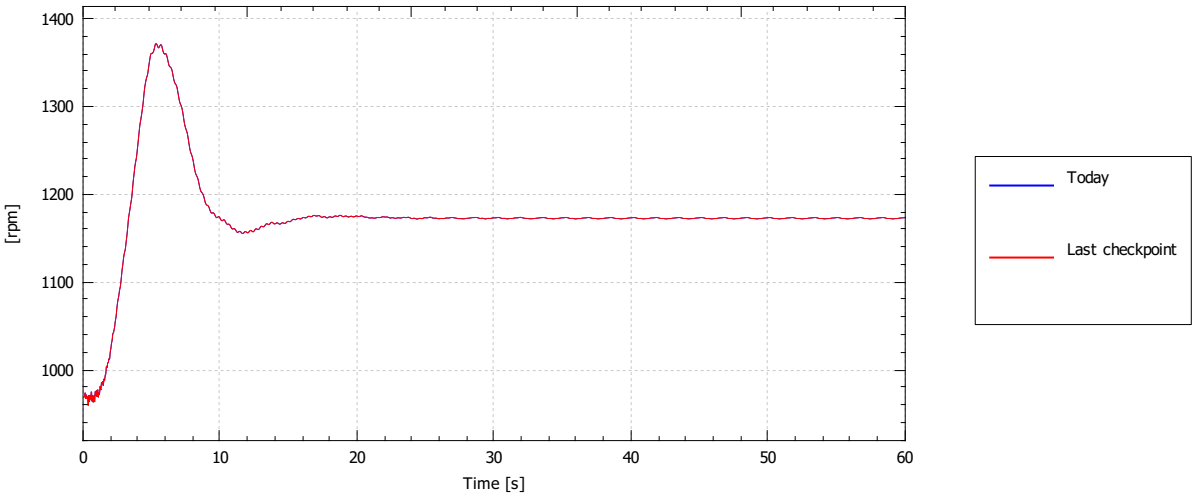

Torque on main shaft



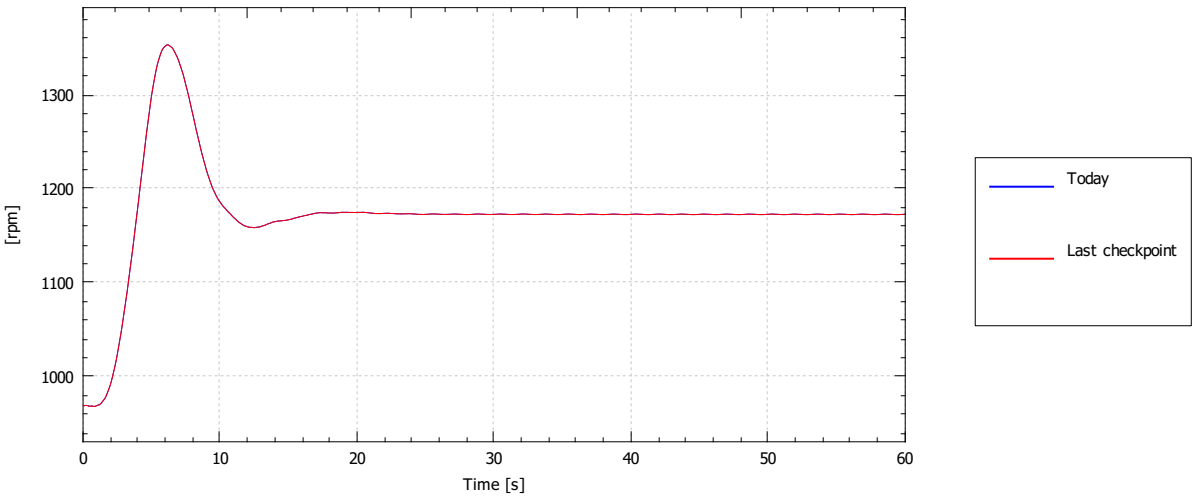
Torque diff. on main shaft

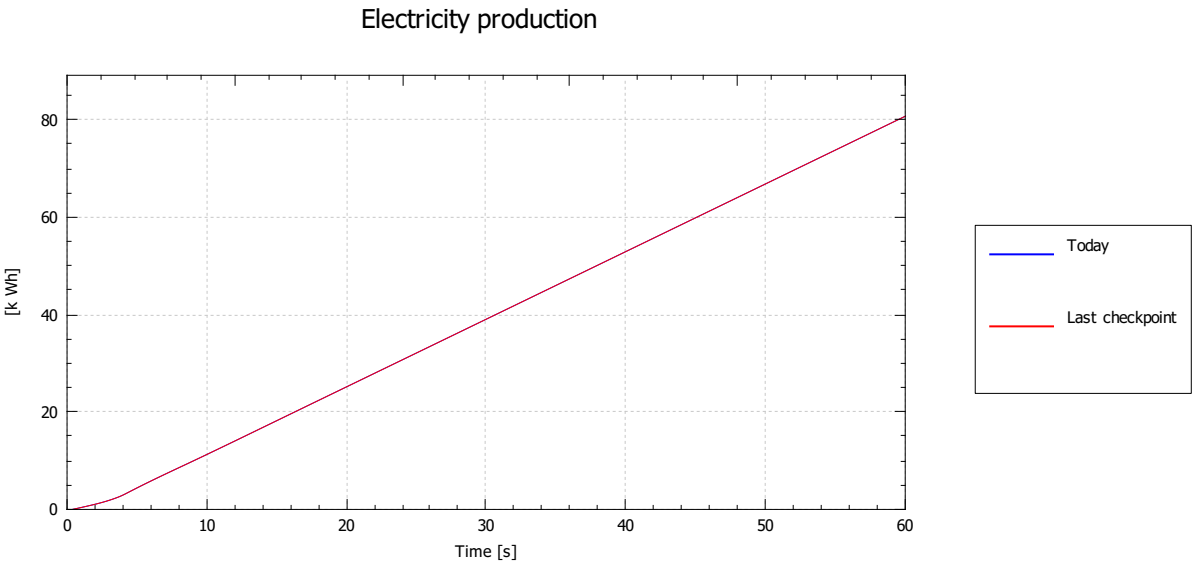


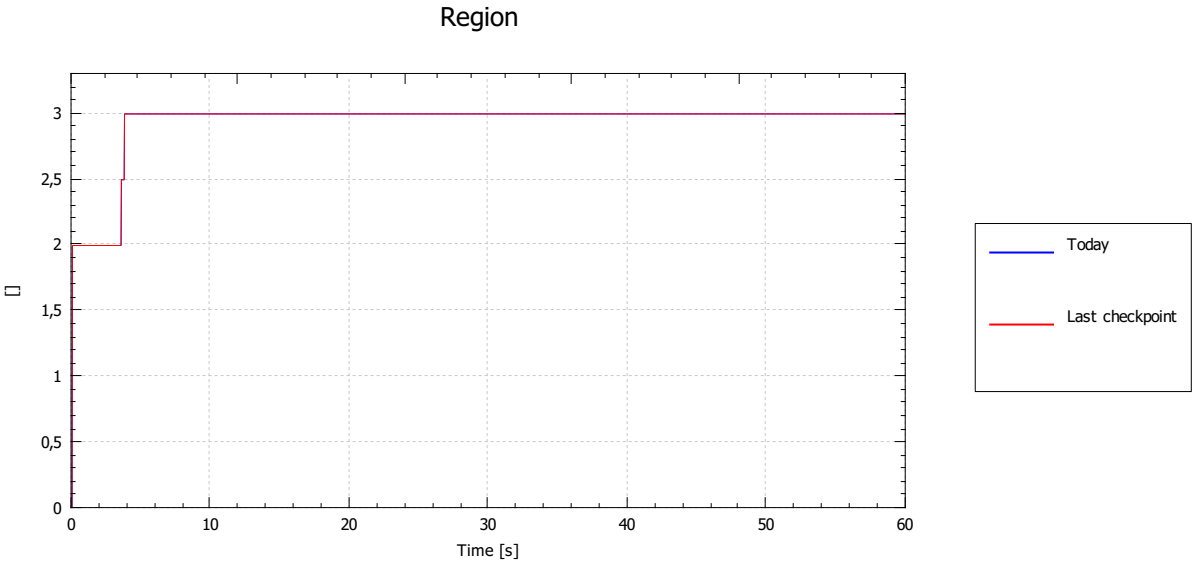

RPM




Filtered RPM

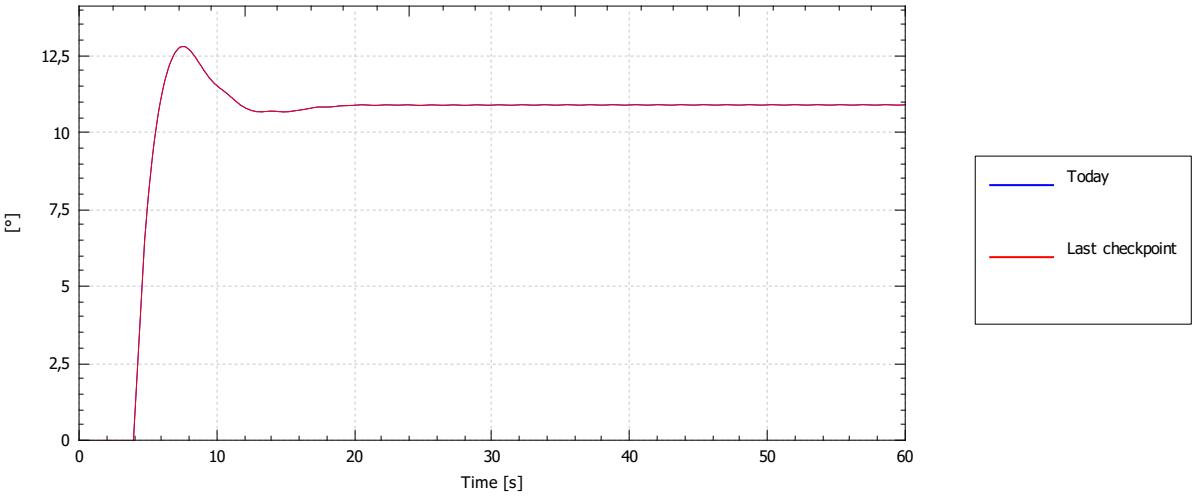




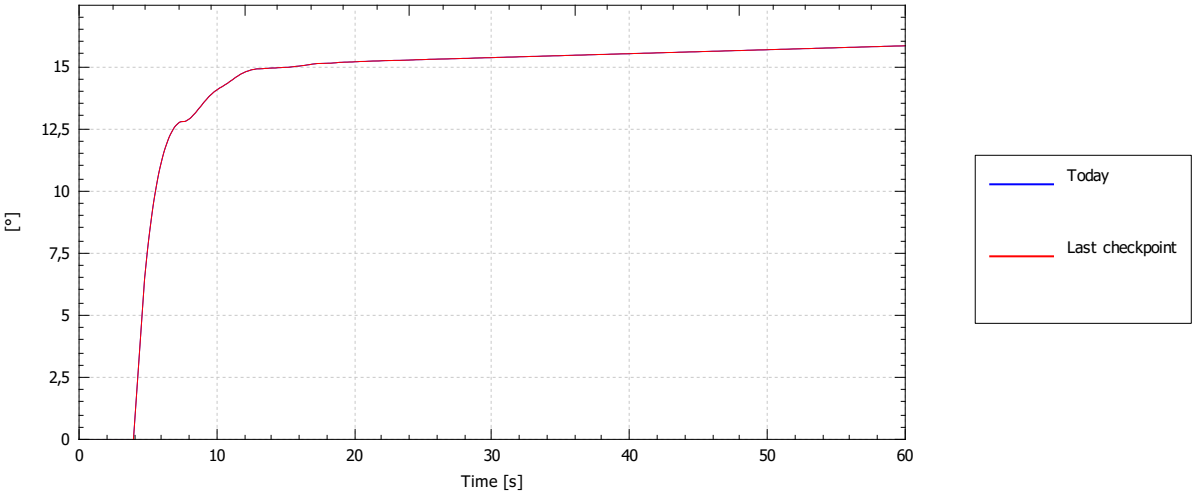




**Demanded pitch controller**

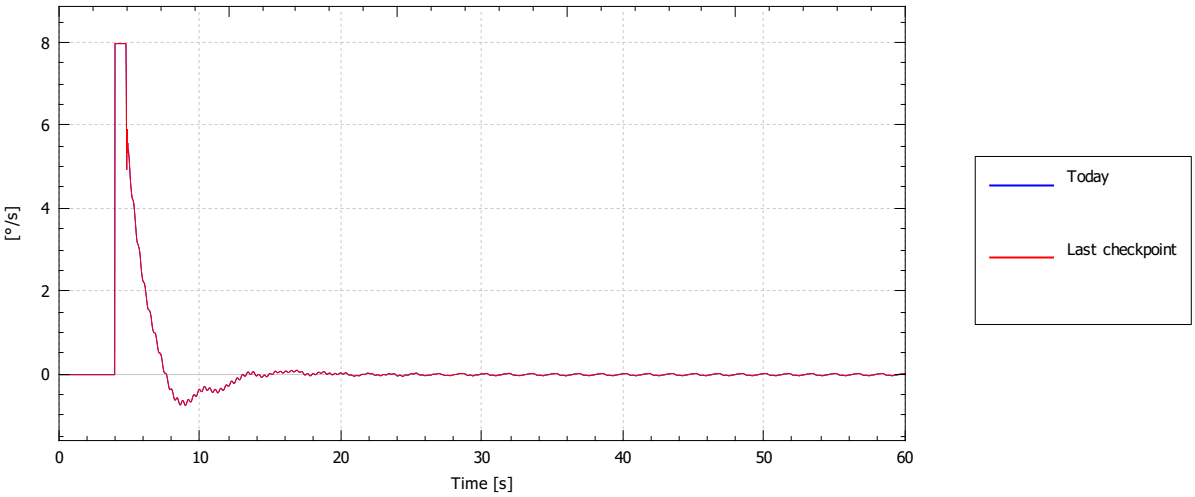
Demanded collective pitch angle



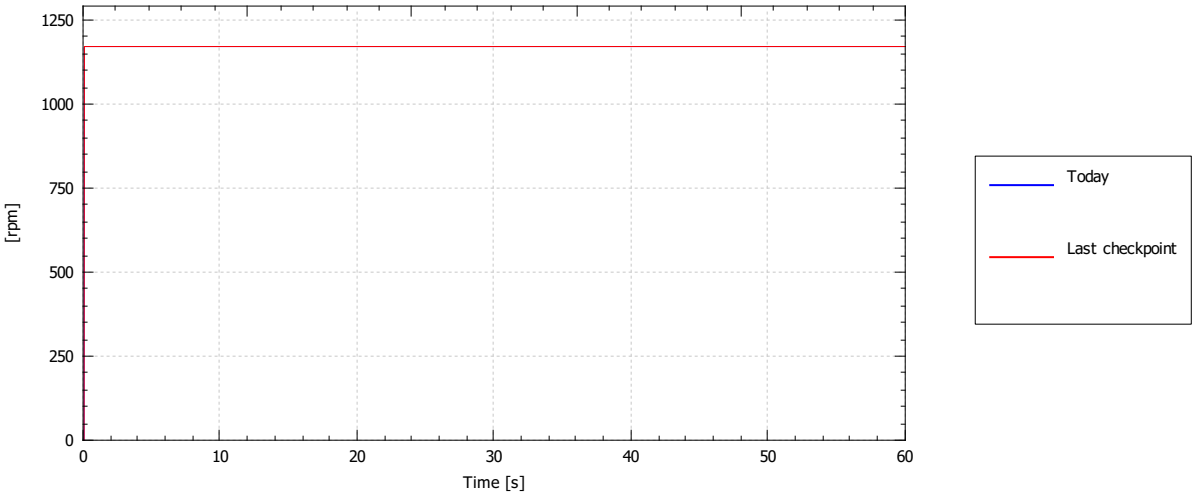

Cumulative demanded collective pitch angle



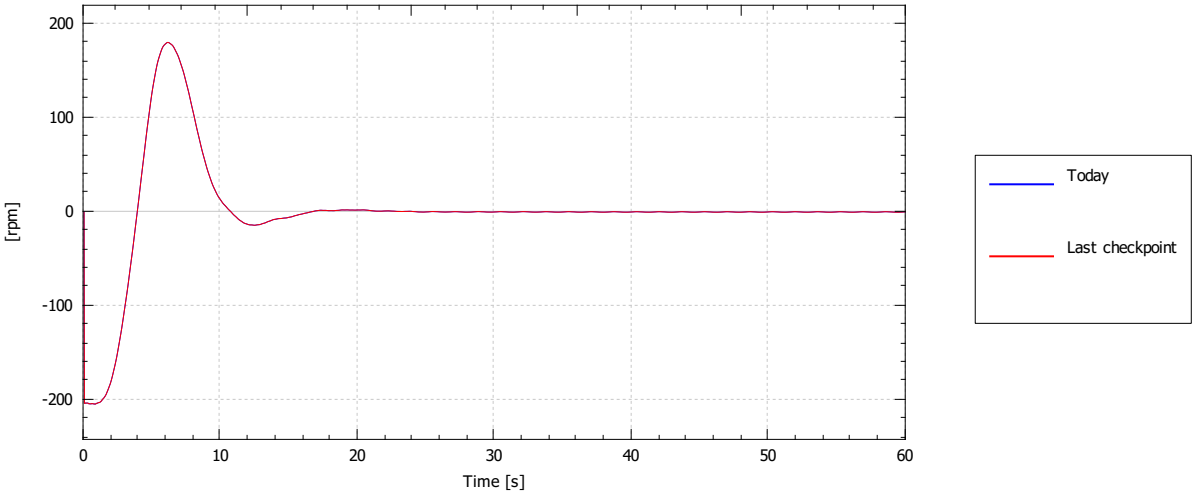

Demanded collective pitch angle rate



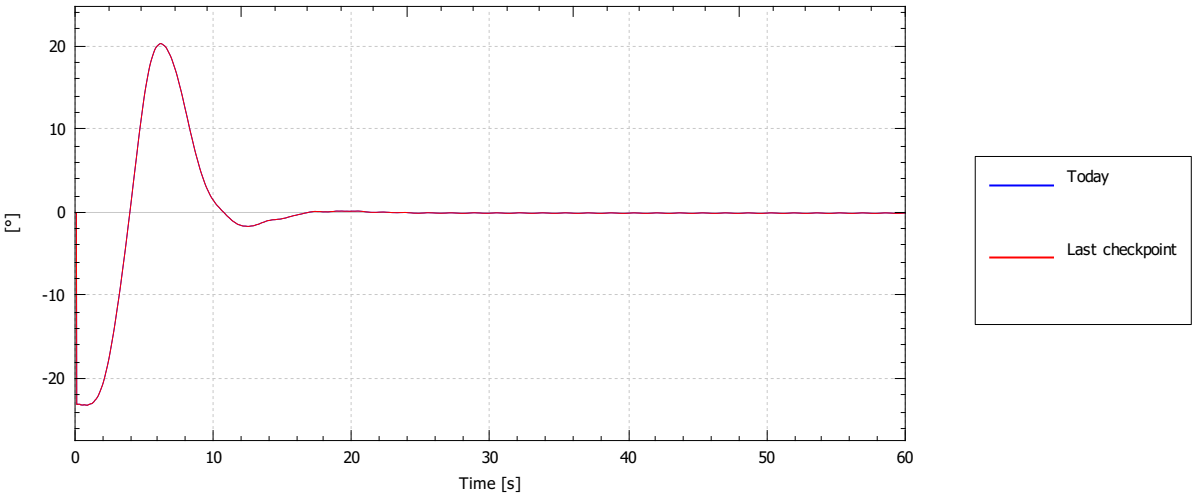
## Set point



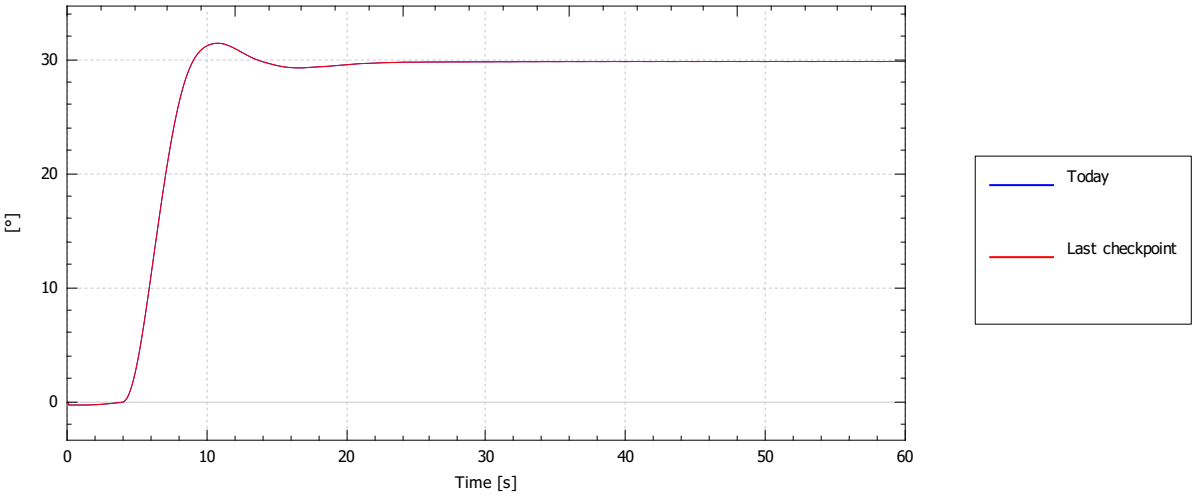

## RPM error



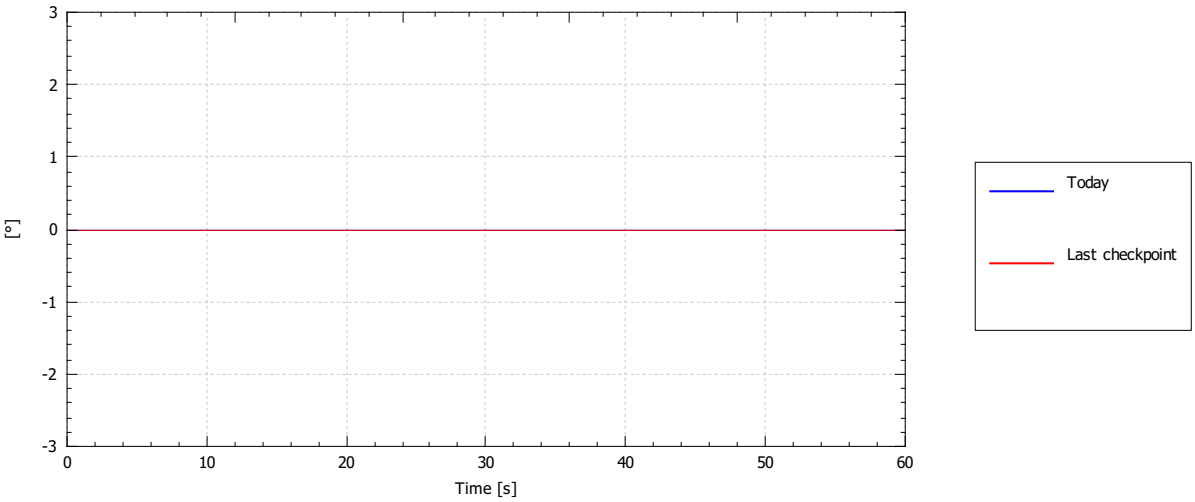

## P term



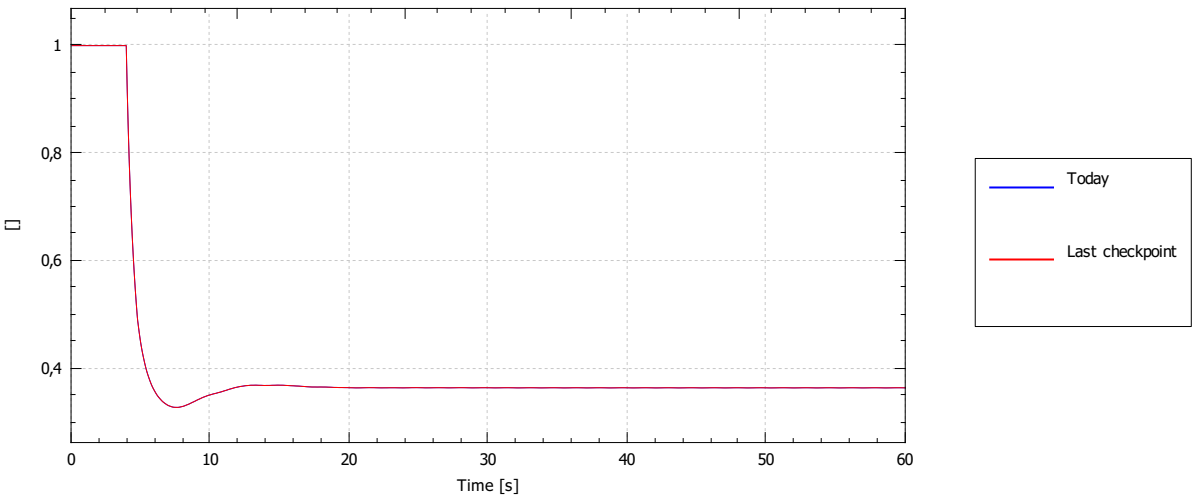
I term



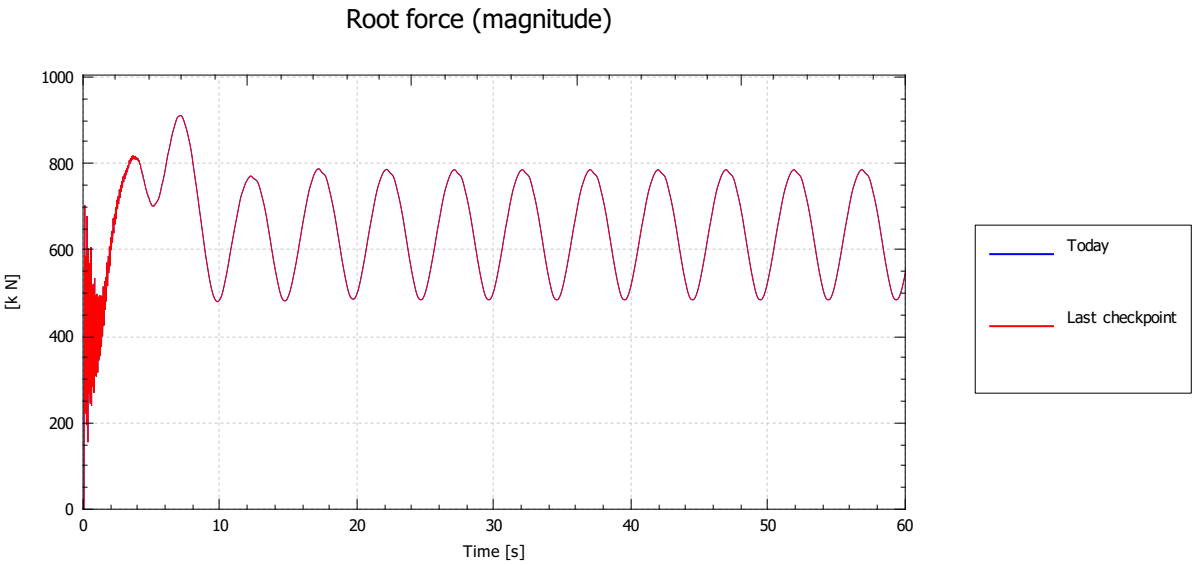

D term

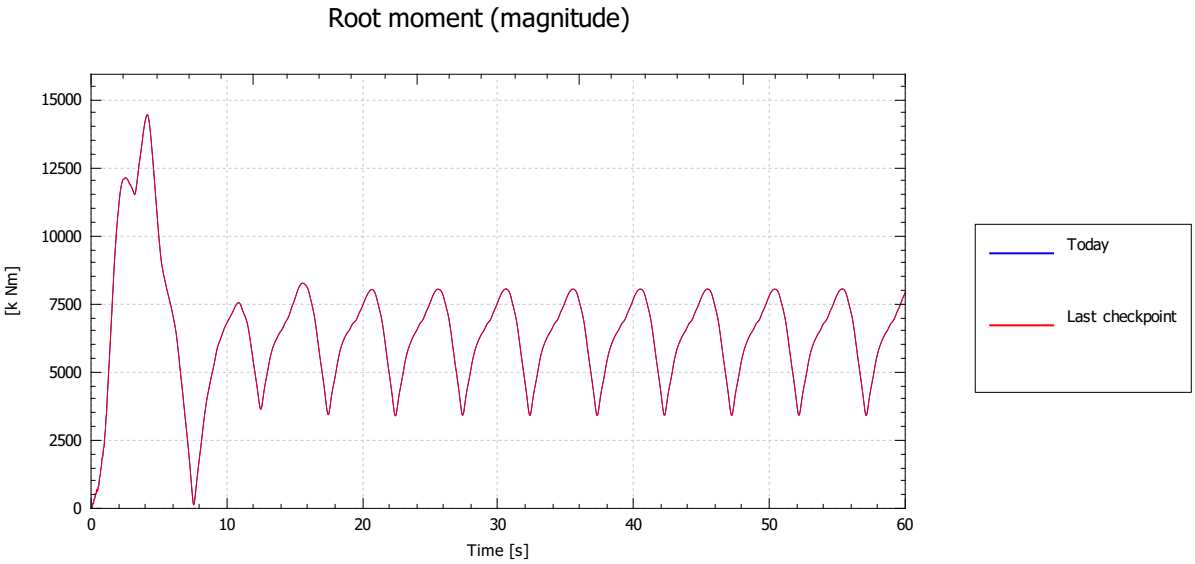


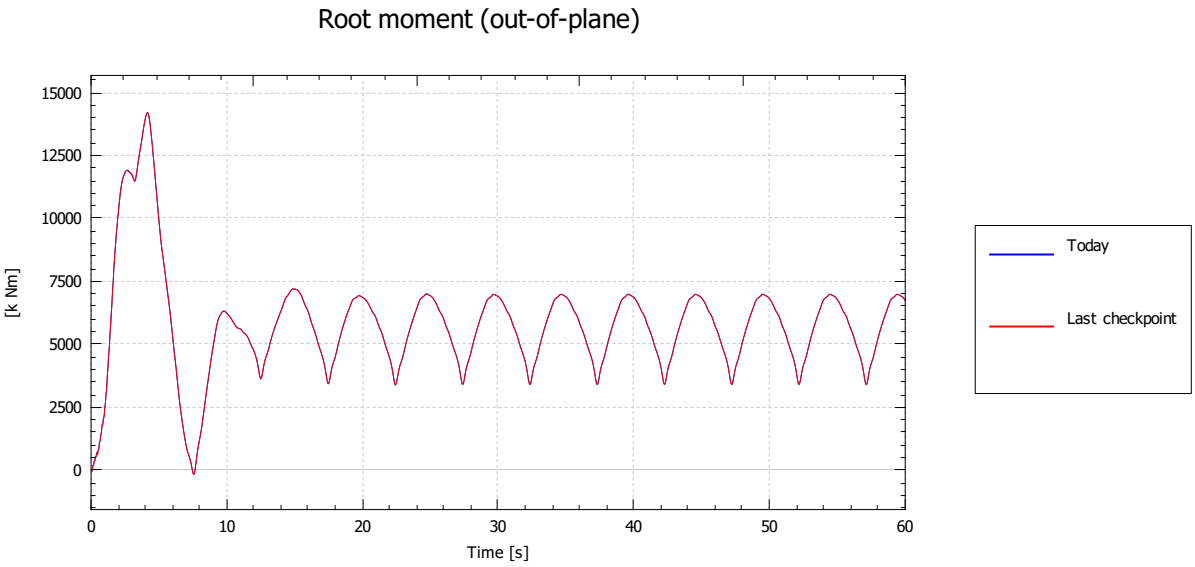

Gain scheduling factor



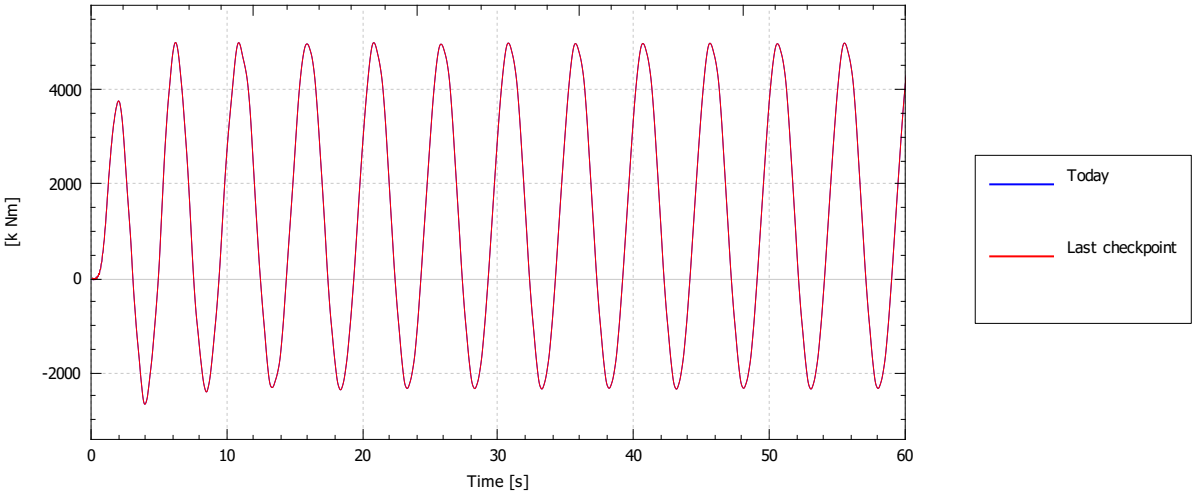
**Blade [Time] [Blade 1]**



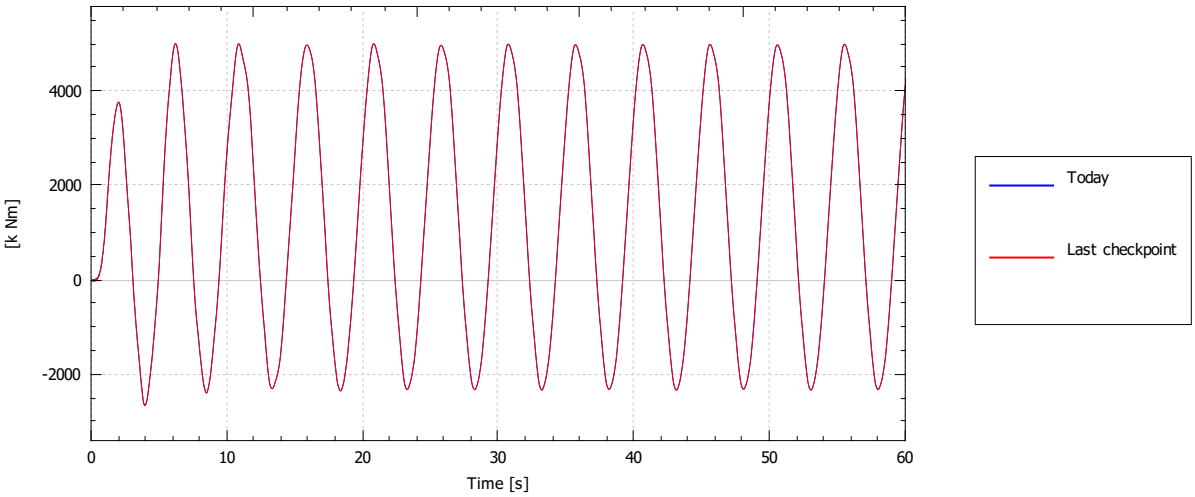



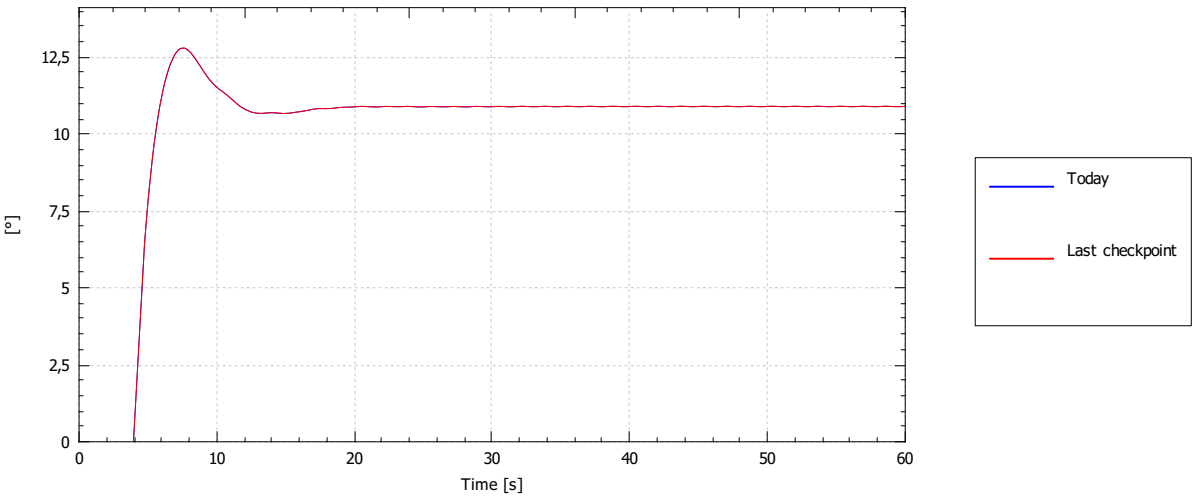
Root moment (in-plane)



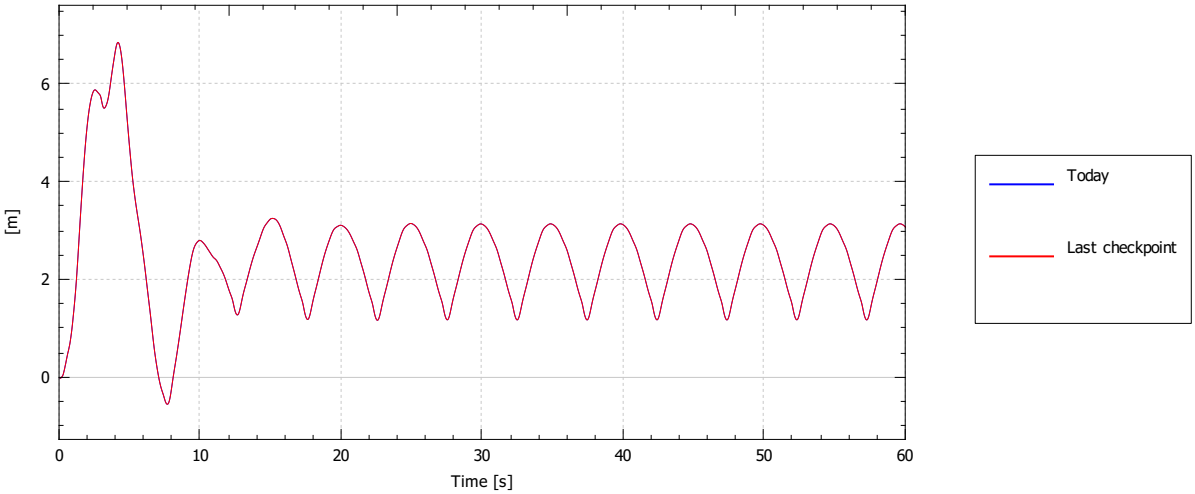

Root moment about shaft



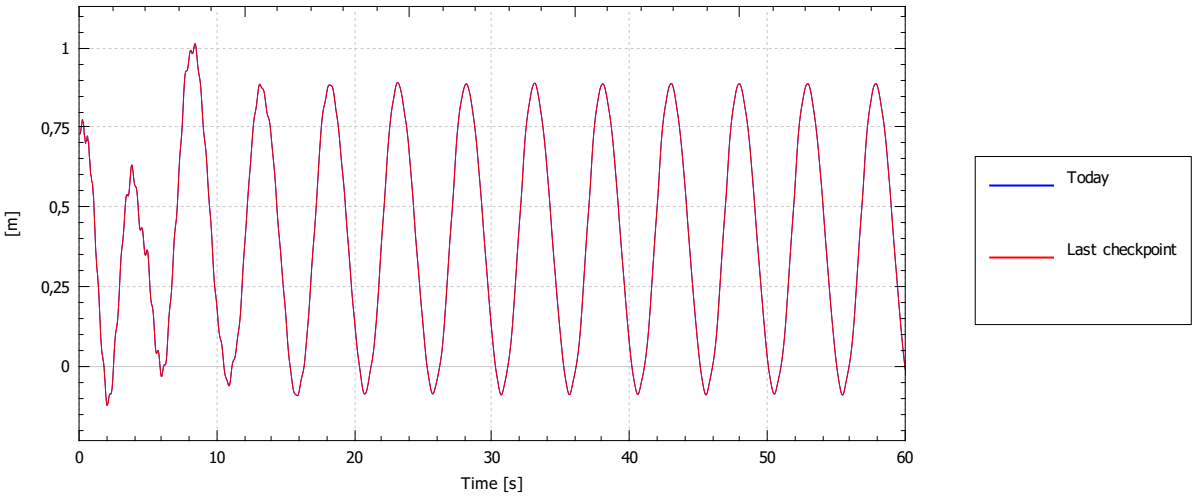

Pitch angle



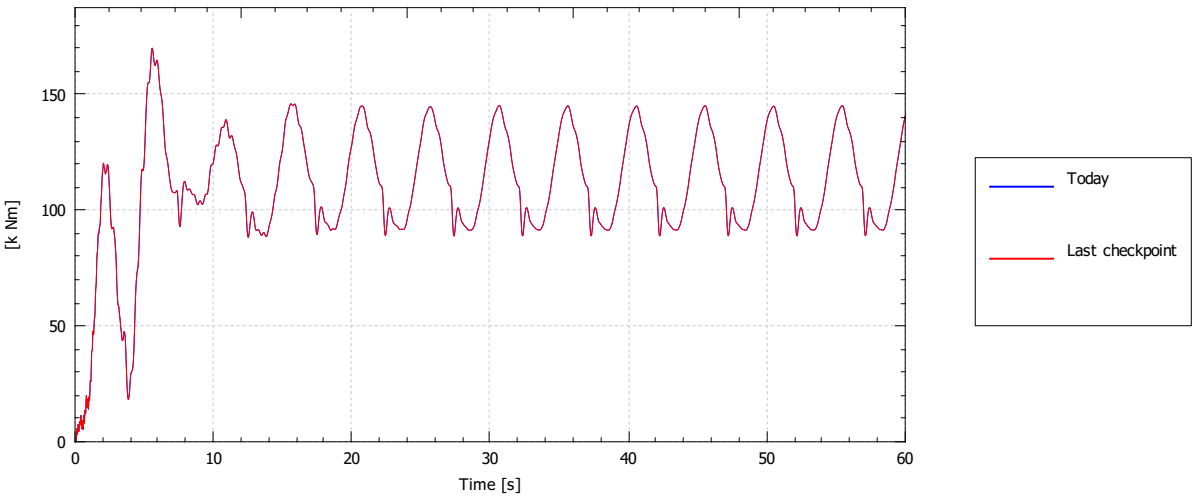
Tip deflection (out-of-plane)




Tip deflection (in-plane)

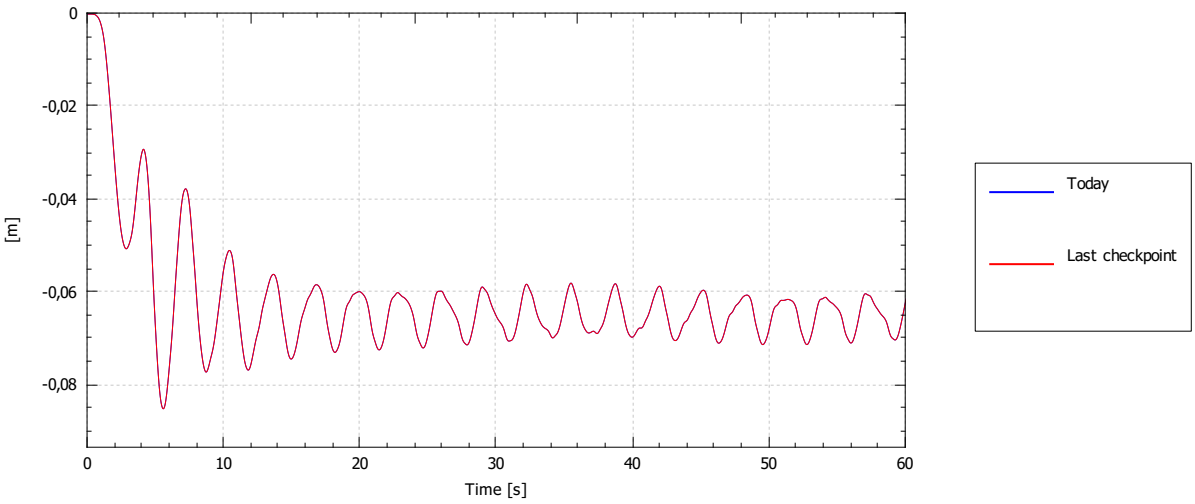



Root torque

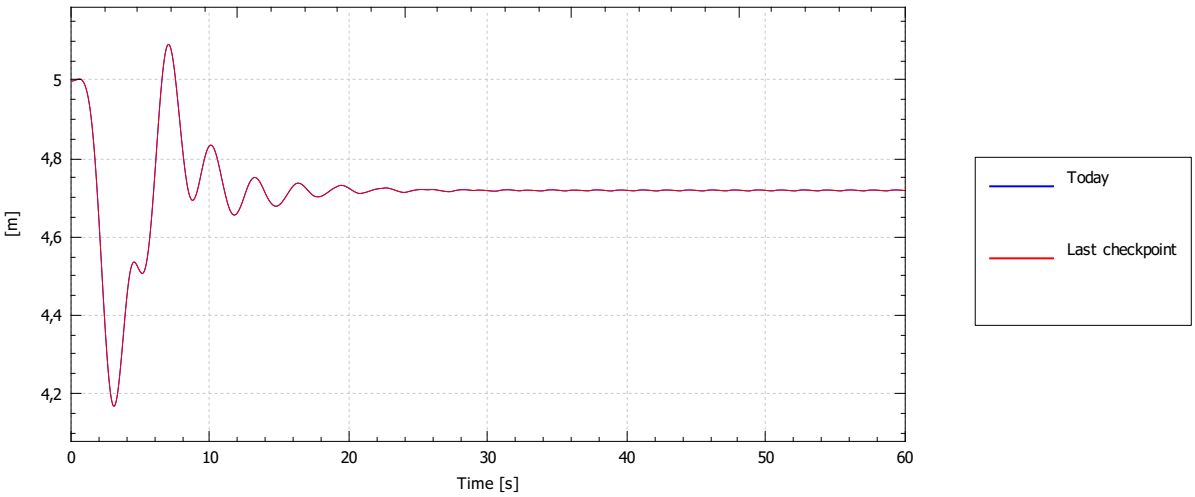


**Node [Node Hub | Hub]**

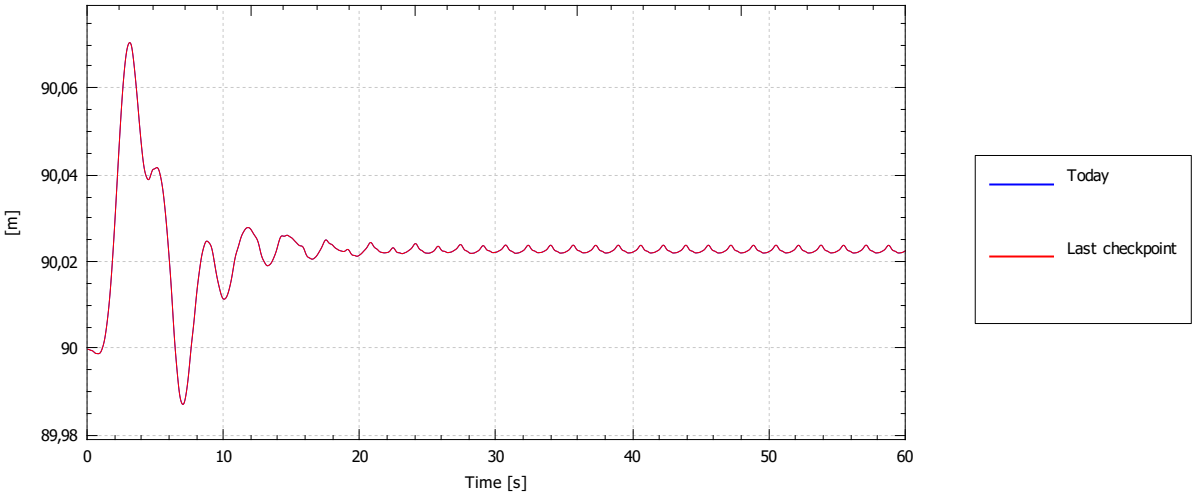
Position (x)

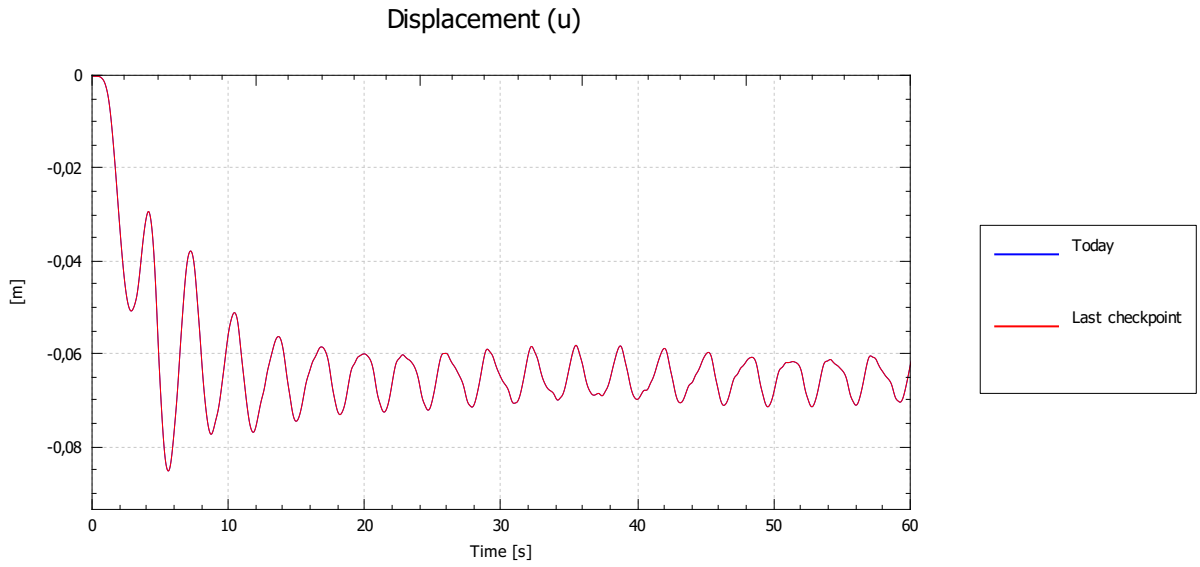


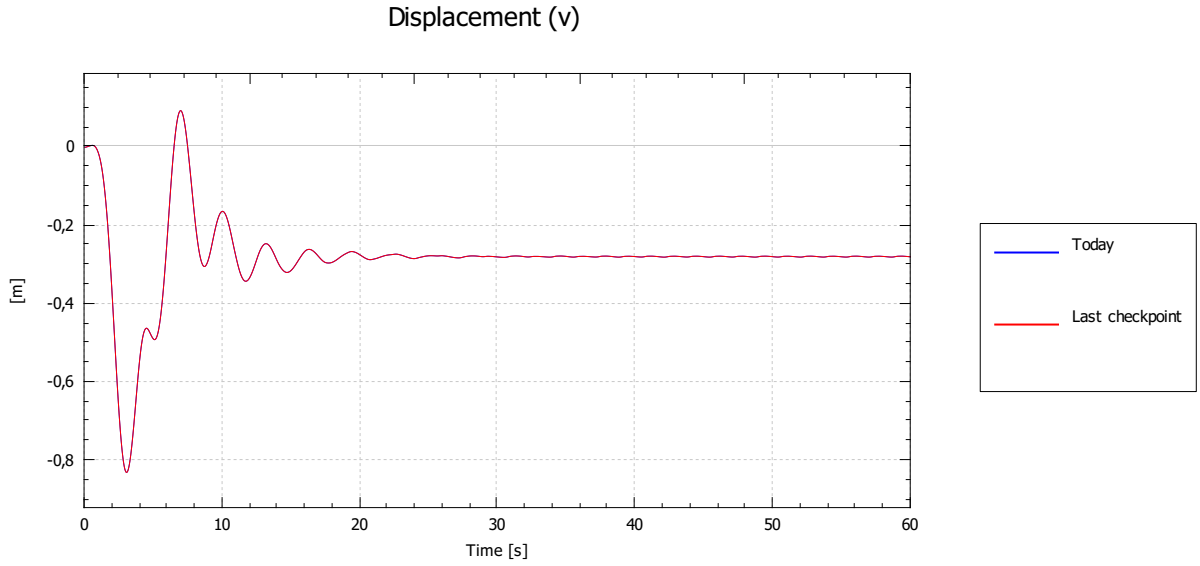

Position (y)

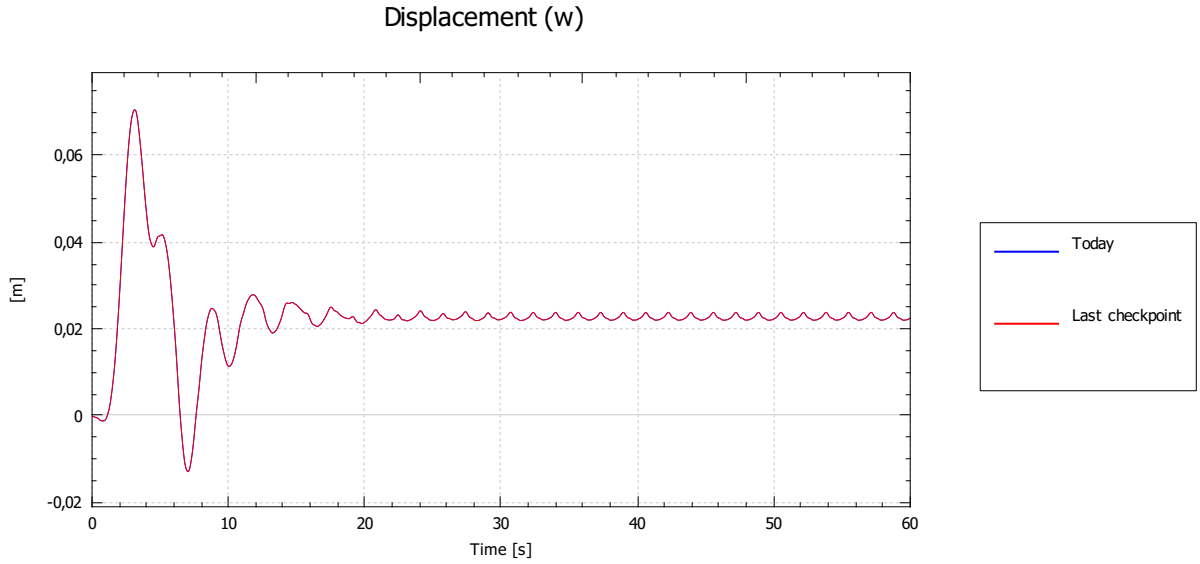



Position (z)

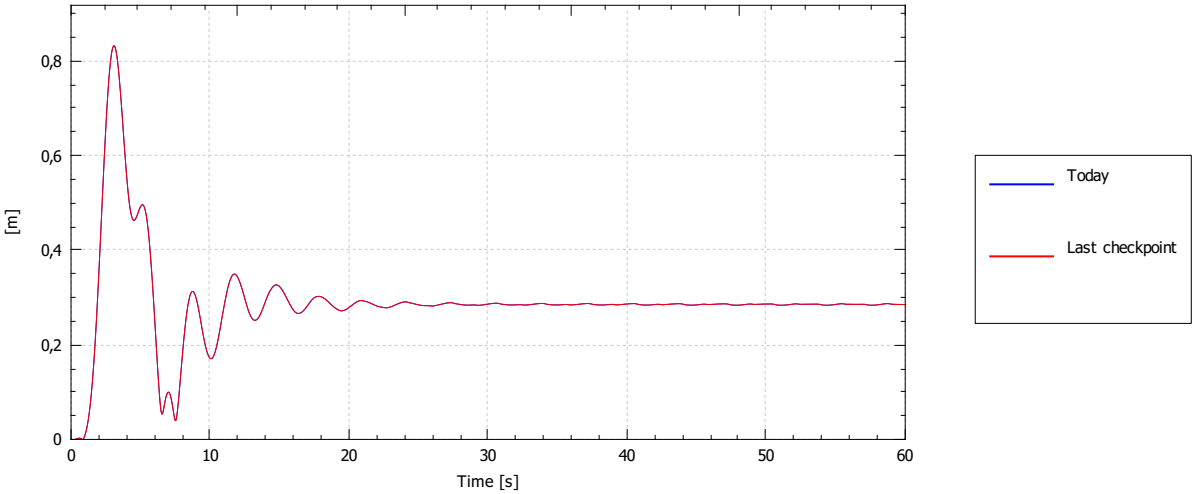



Displacement (u)
0
-0,02
-0,04
-0,06
-0,08
[m]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint

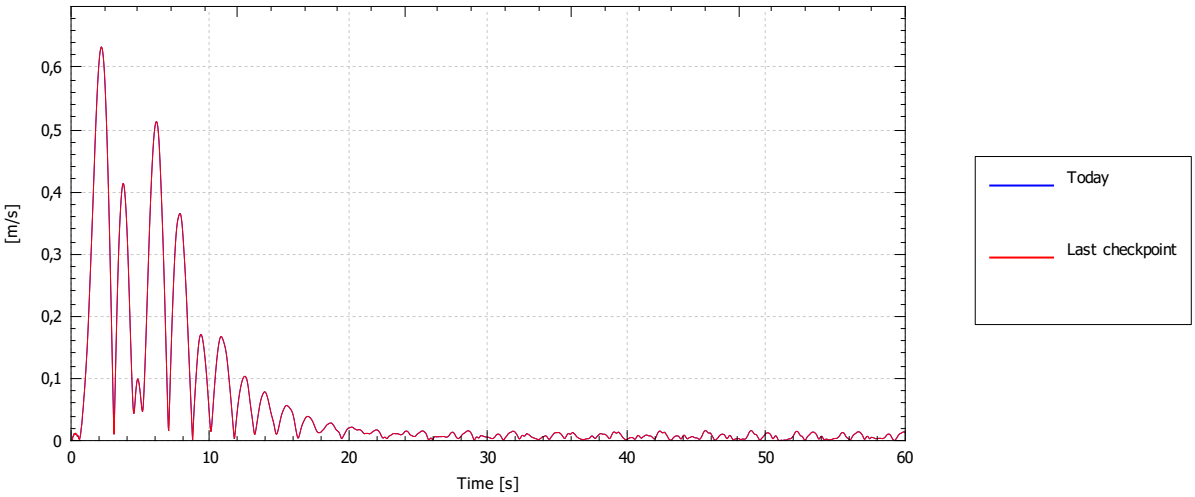

Displacement (v)
0
-0,2
-0,4
-0,6
-0,8
[m]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint


Displacement (w)
0,06
0,04
0,02
0
-0,02
[m]
0
10
20
30
40
50
60
Time [s]
Today
Last checkpoint

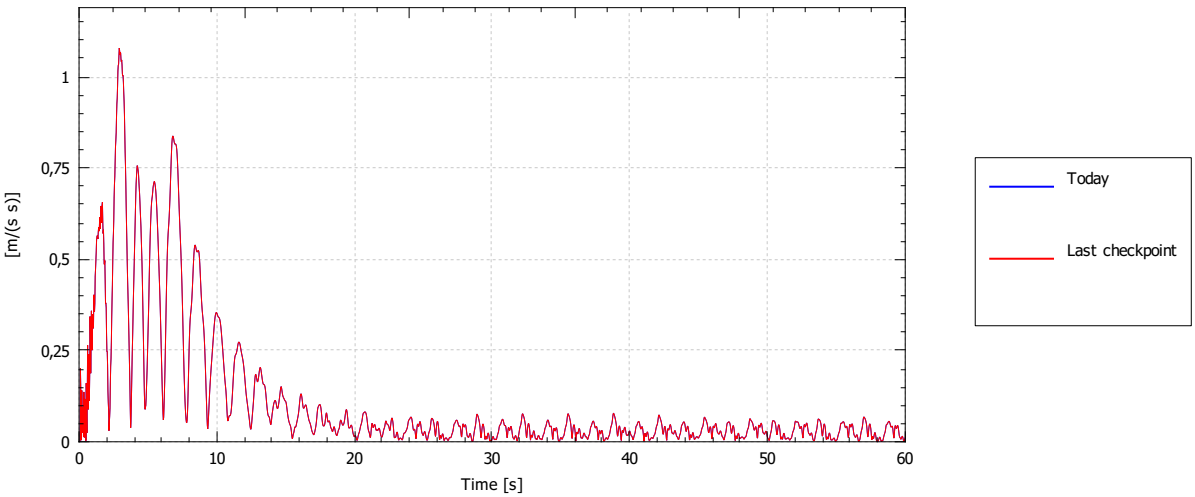
Displacement magnitude



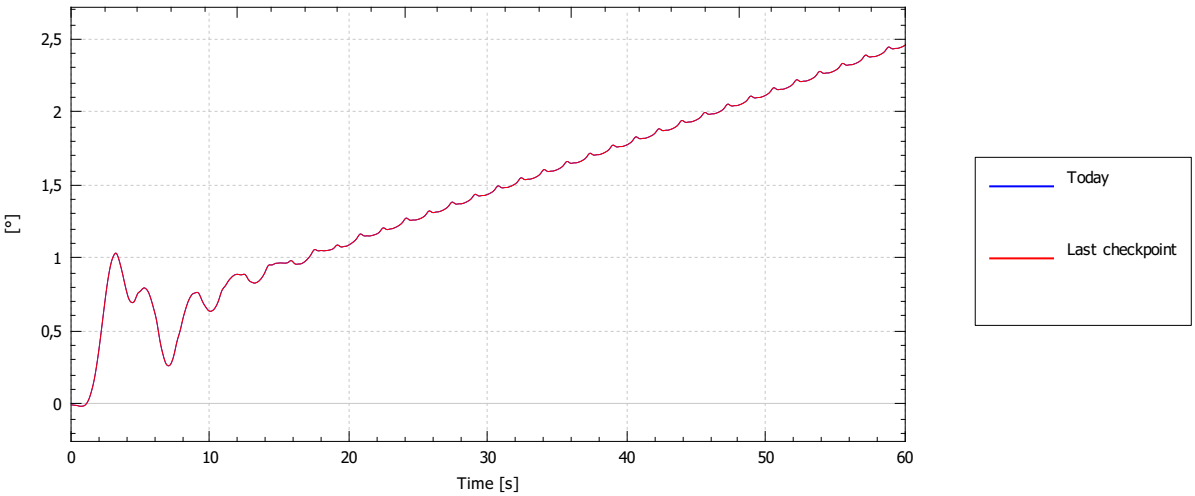

Speed



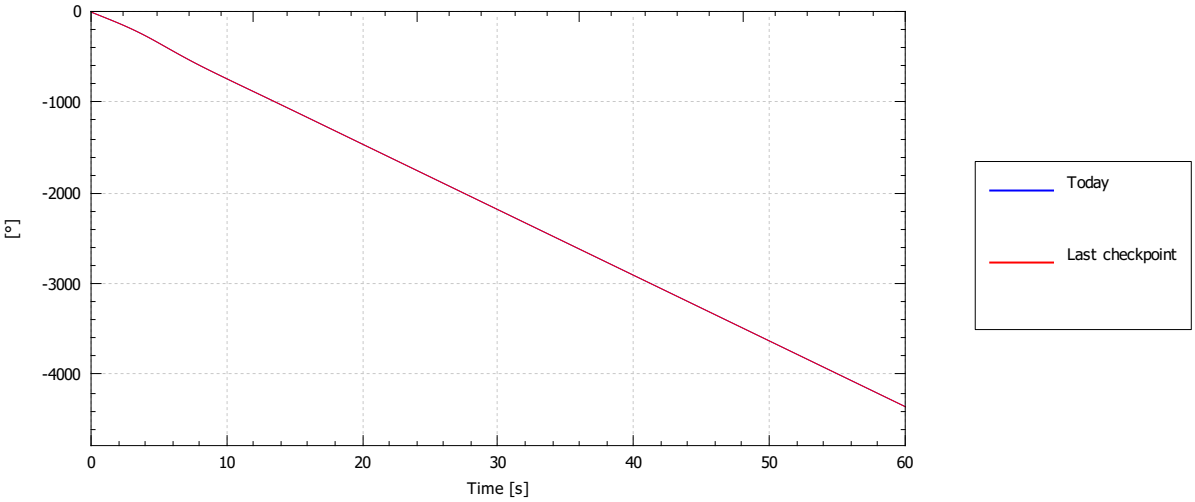

Acceleration, magnitude



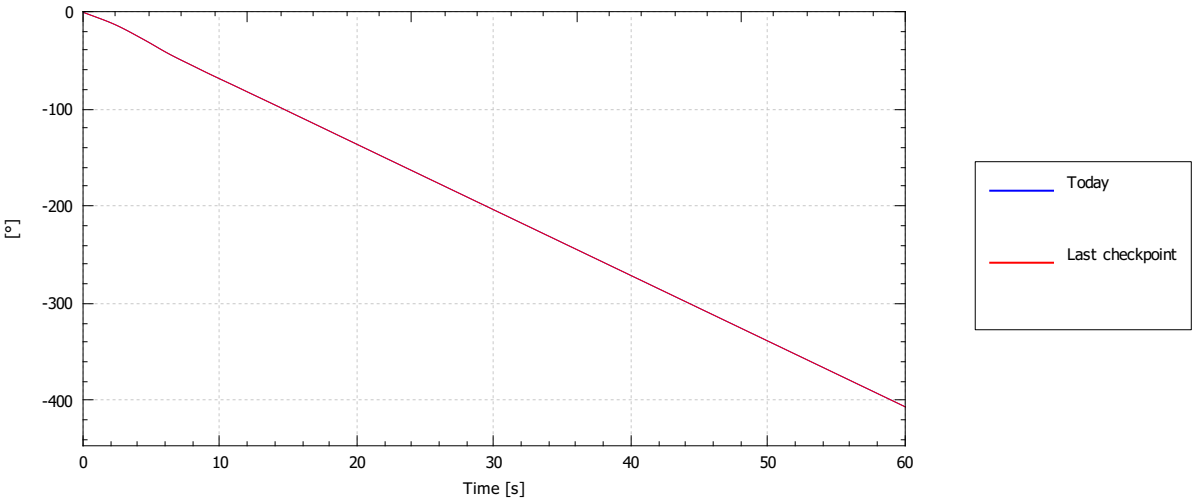
Rotational displacement (ru)



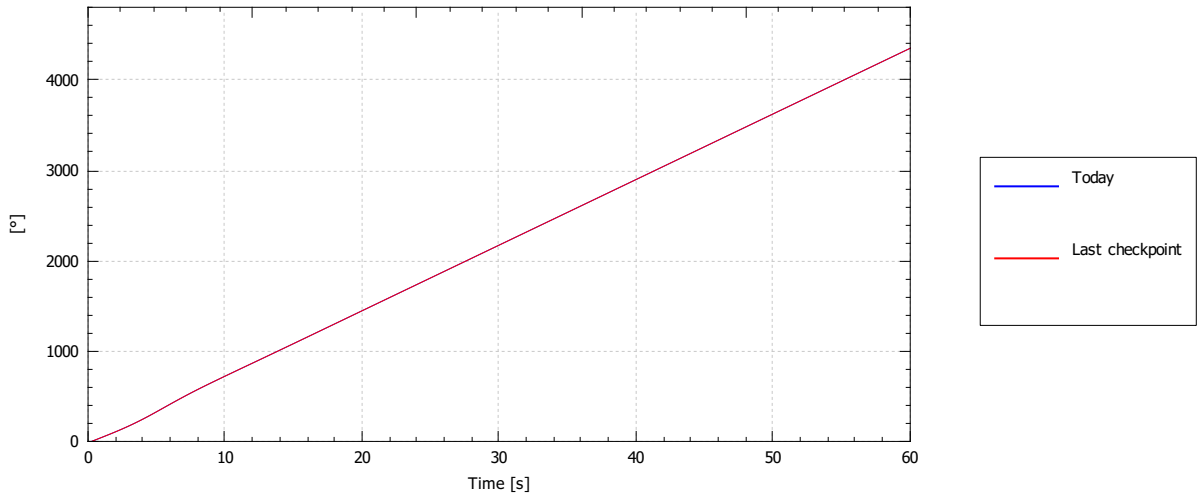

Rotational displacement (rv)



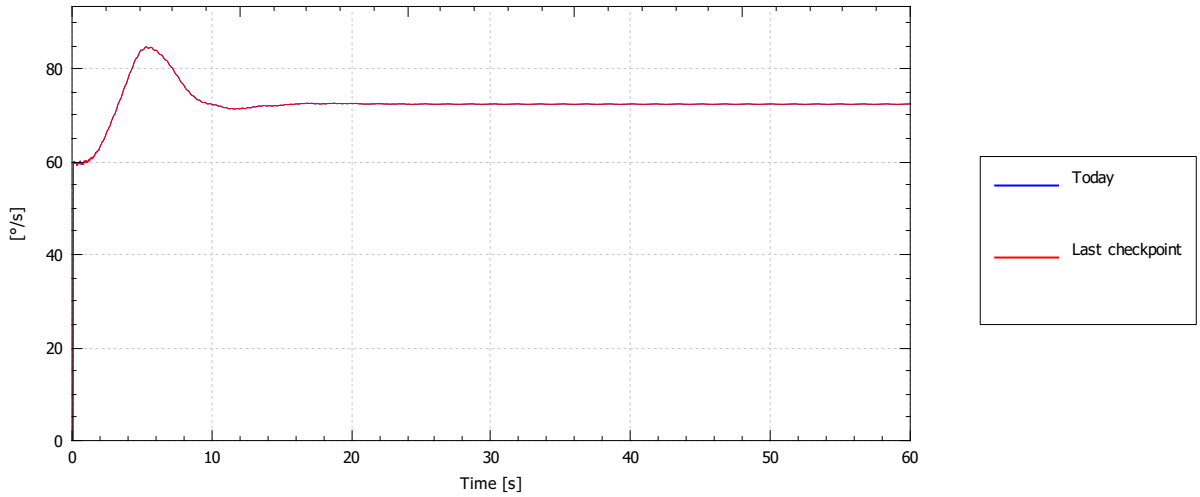

Rotational displacement (rw)



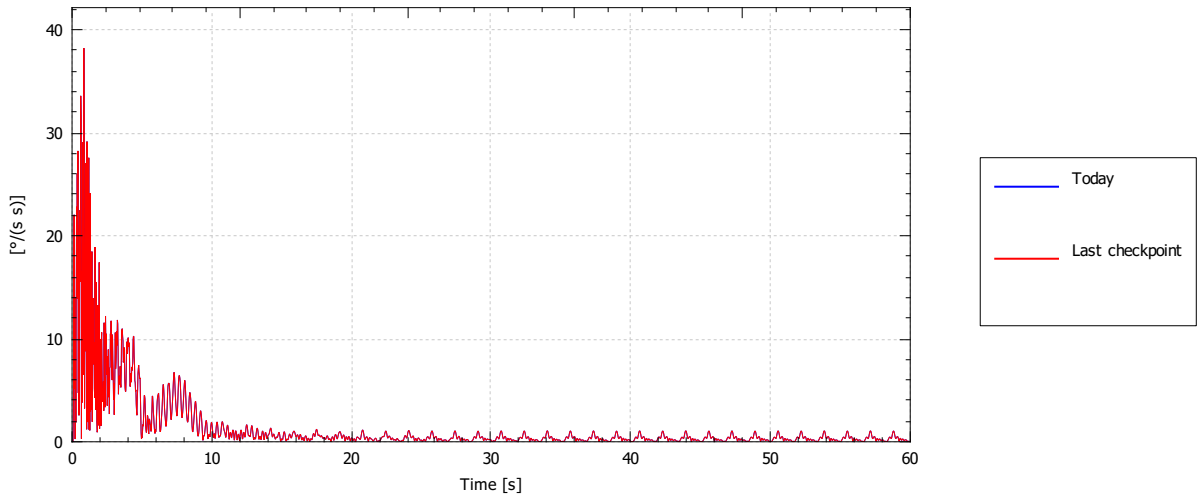
Rotational displacement magnitude



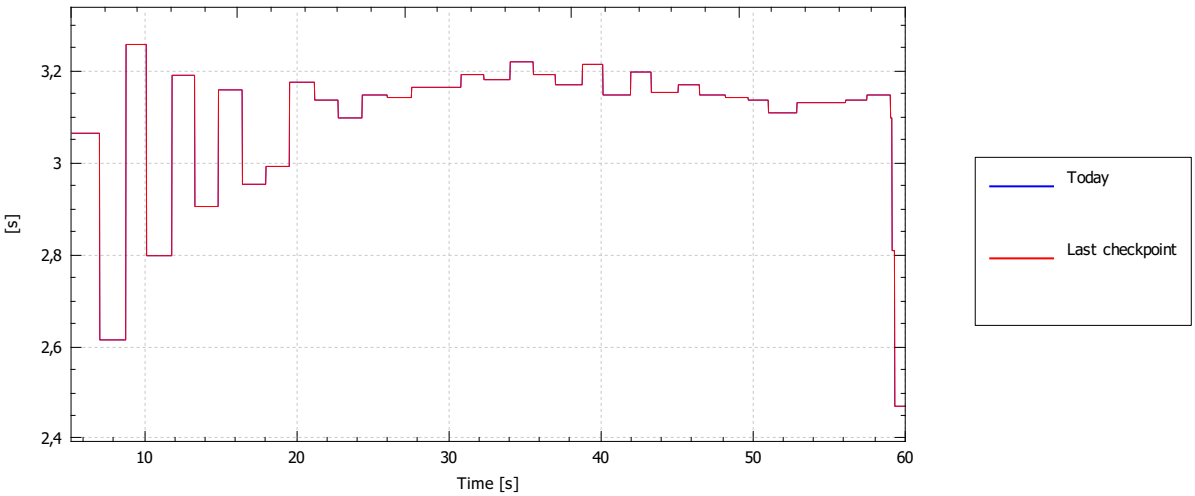

Rotational speed



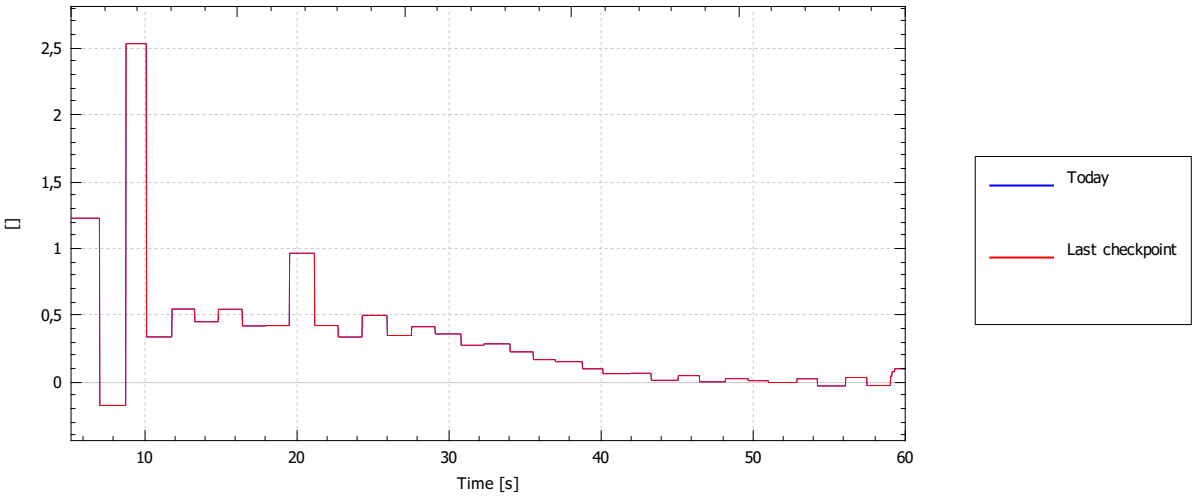

Rotational acceleration mag



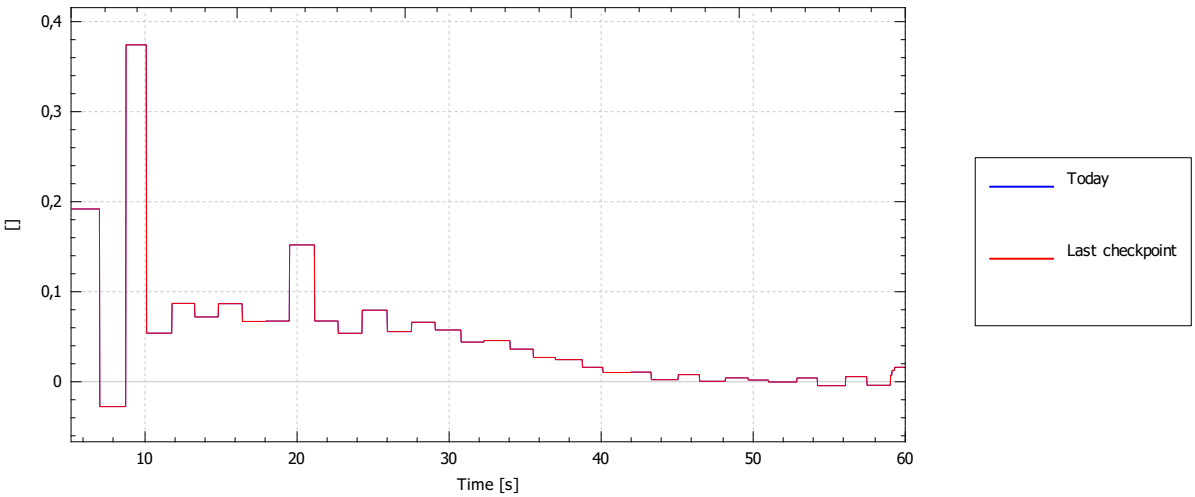
## Displacement period




## Displacement logarithmic decrement

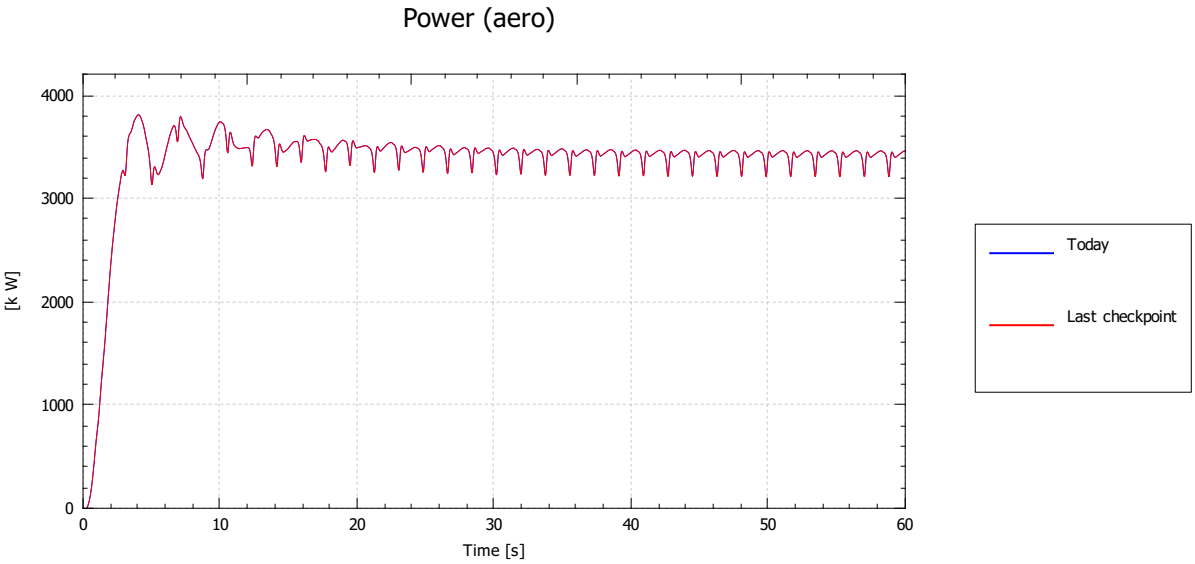


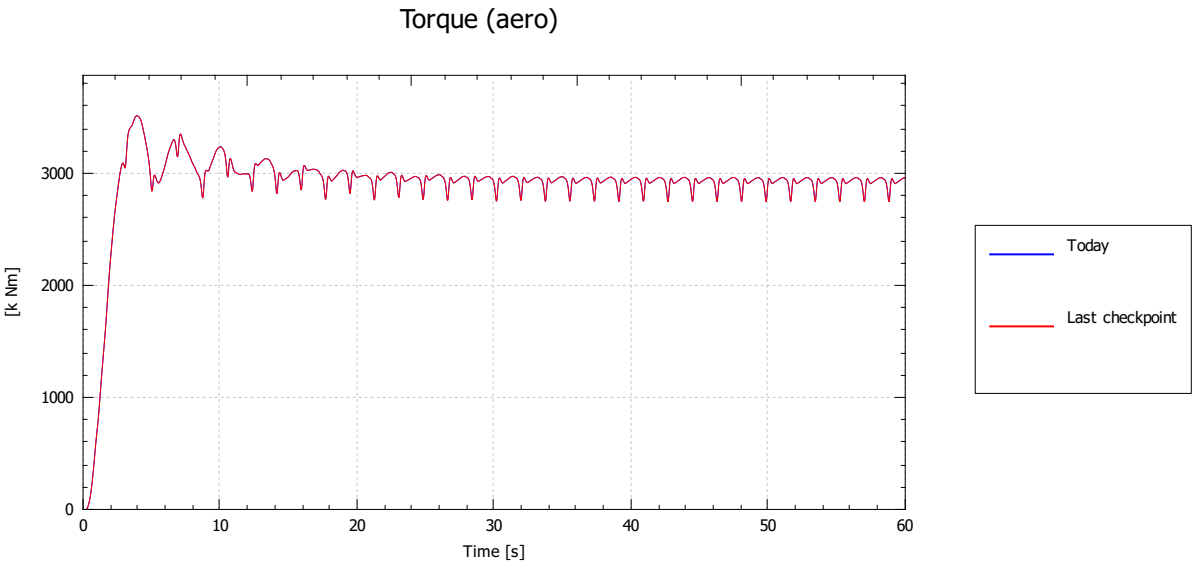

## Displacement damping ratio



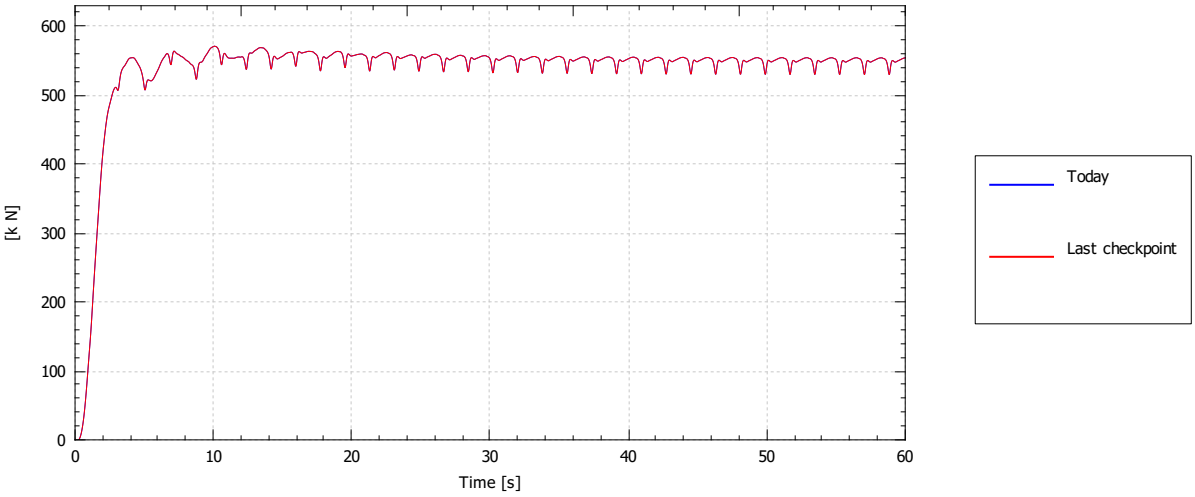
**Load case: reference height**

**Rotor**

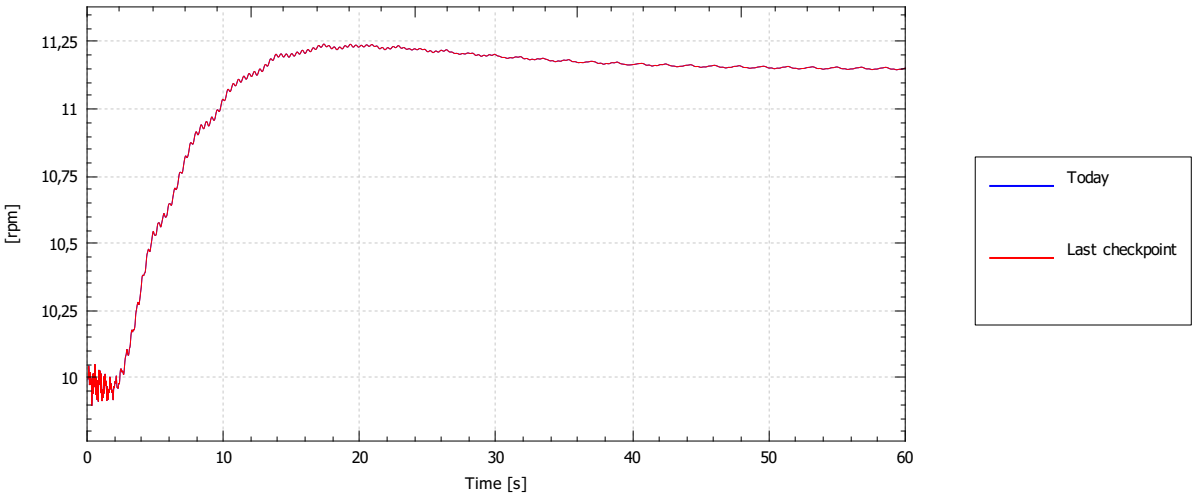


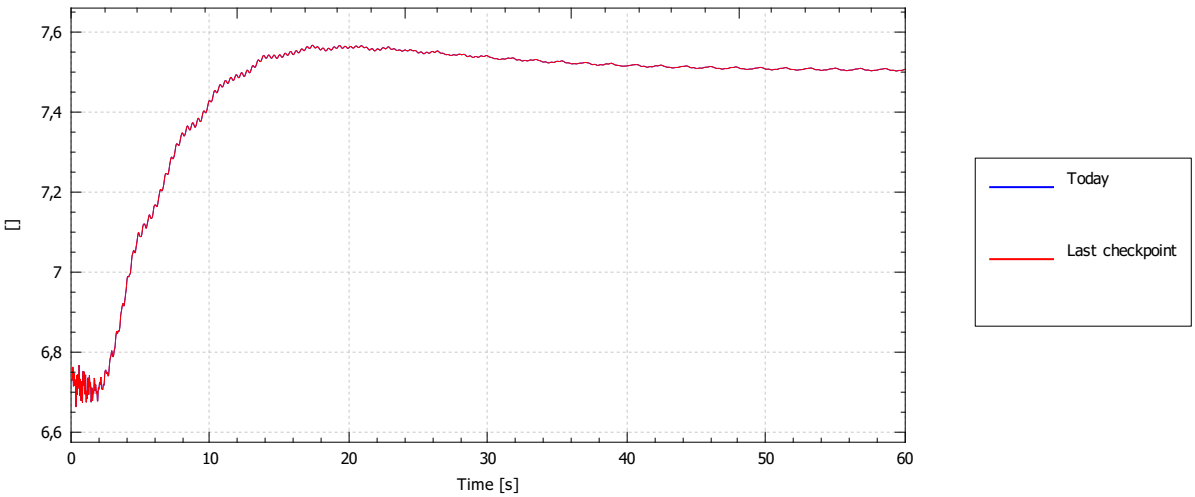
Thrust (aero)



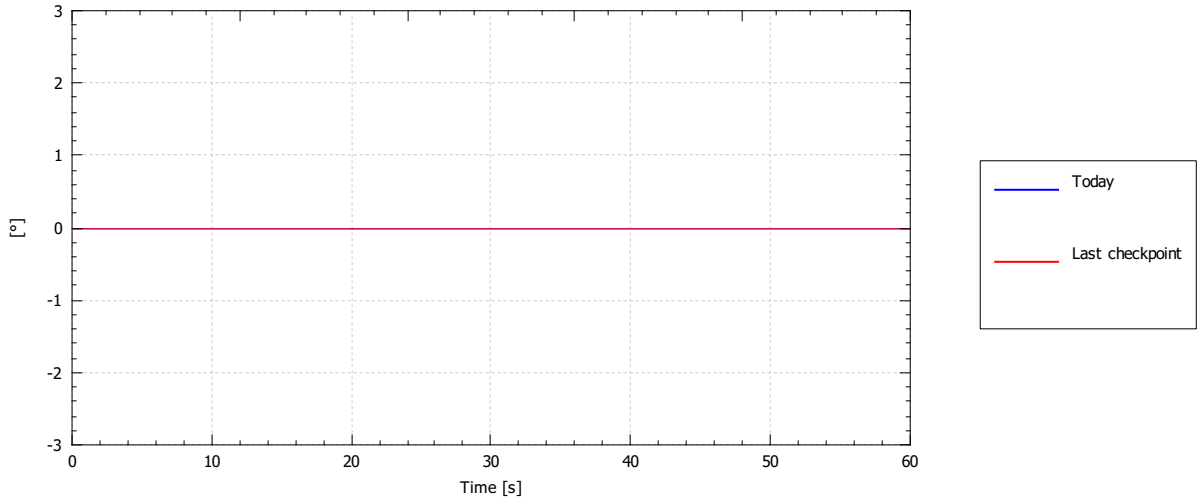

RPM



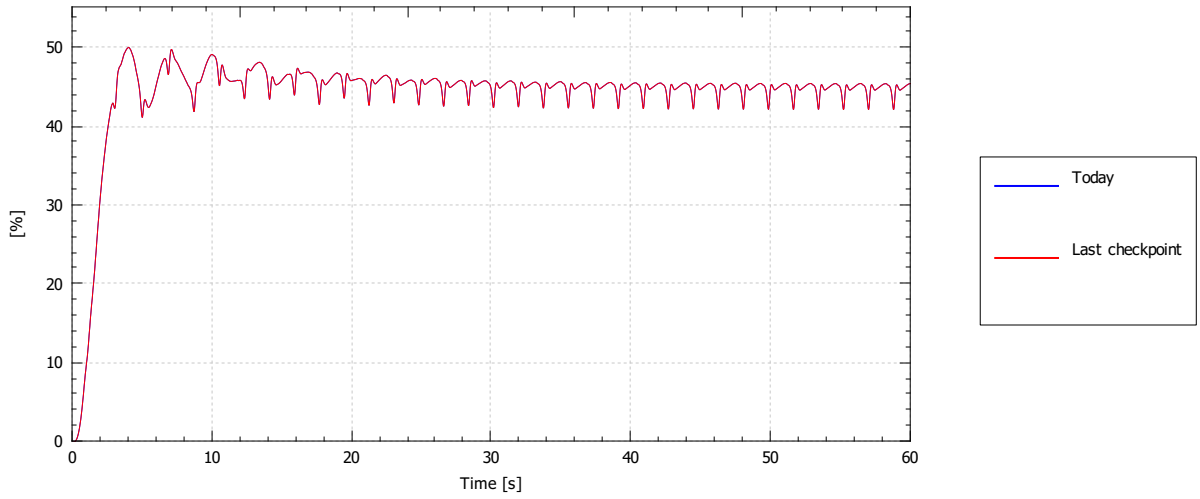

TSR



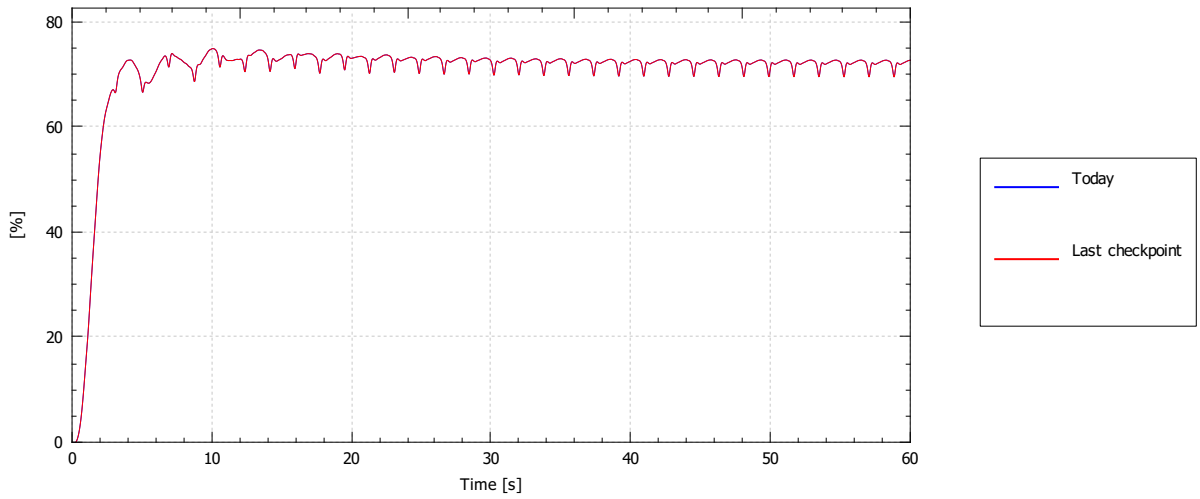
Representative demanded pitch angle



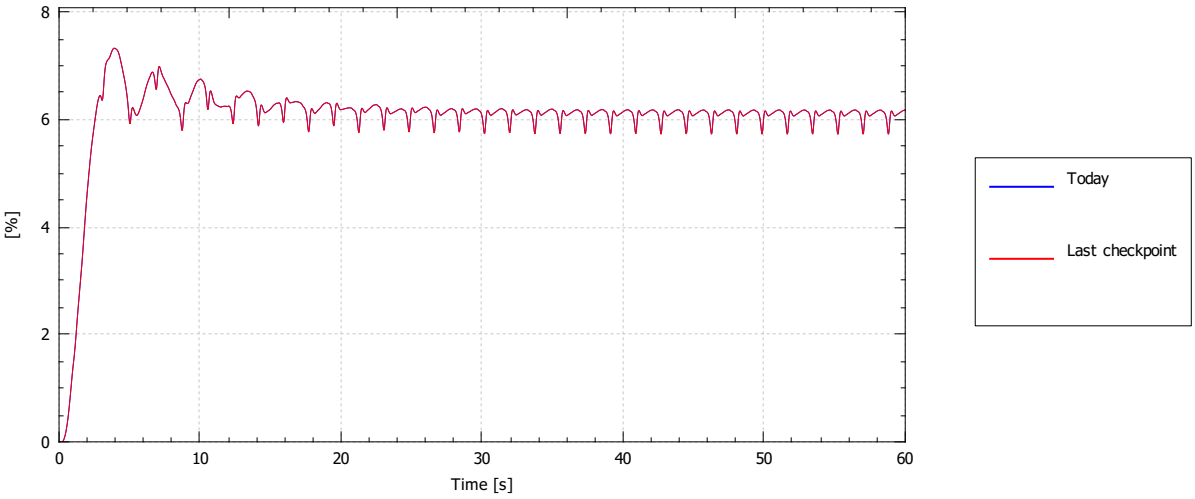

Power coef. (CP)



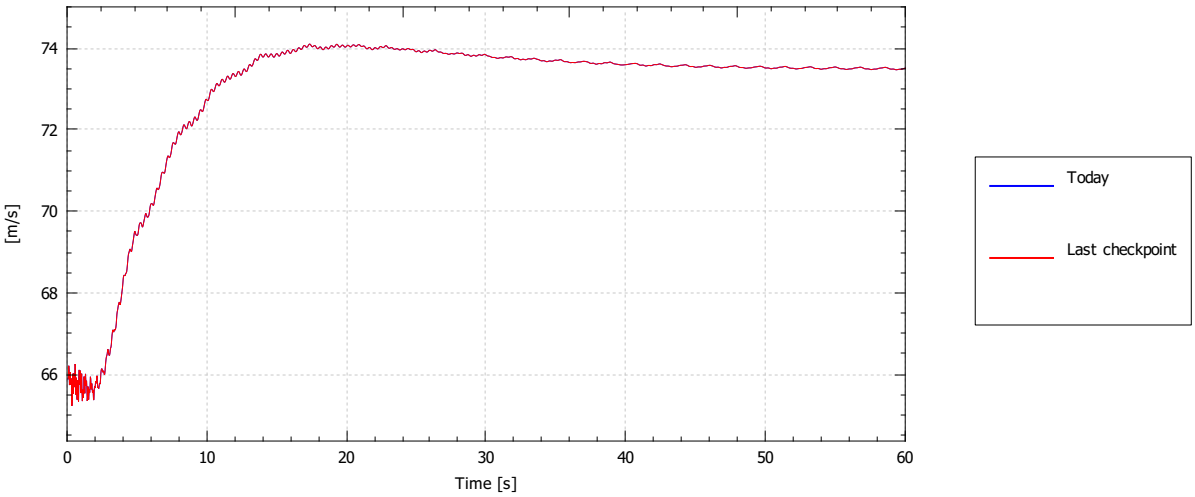

Thrust coef. (CT)



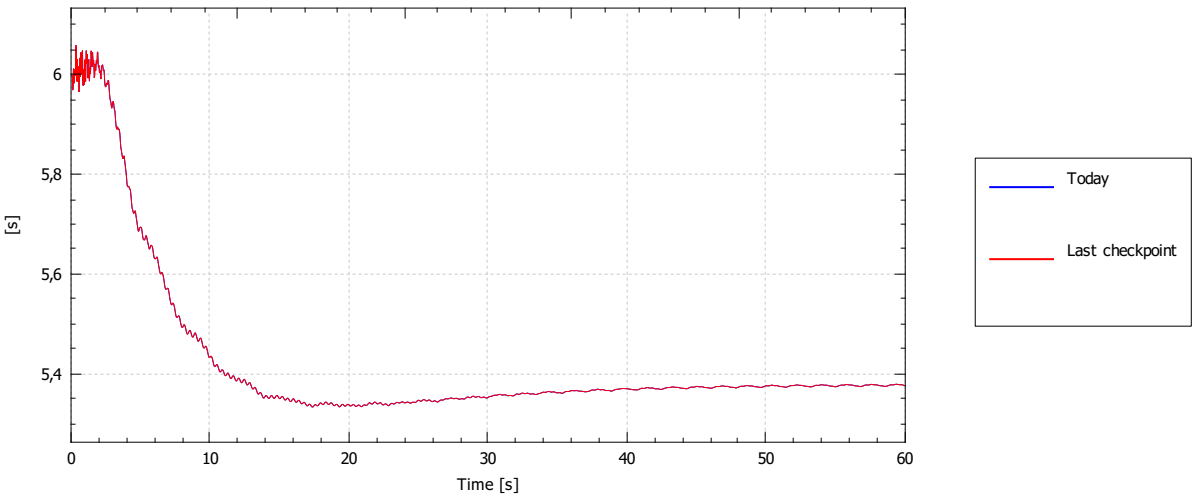
## Torque coef. (CQ)



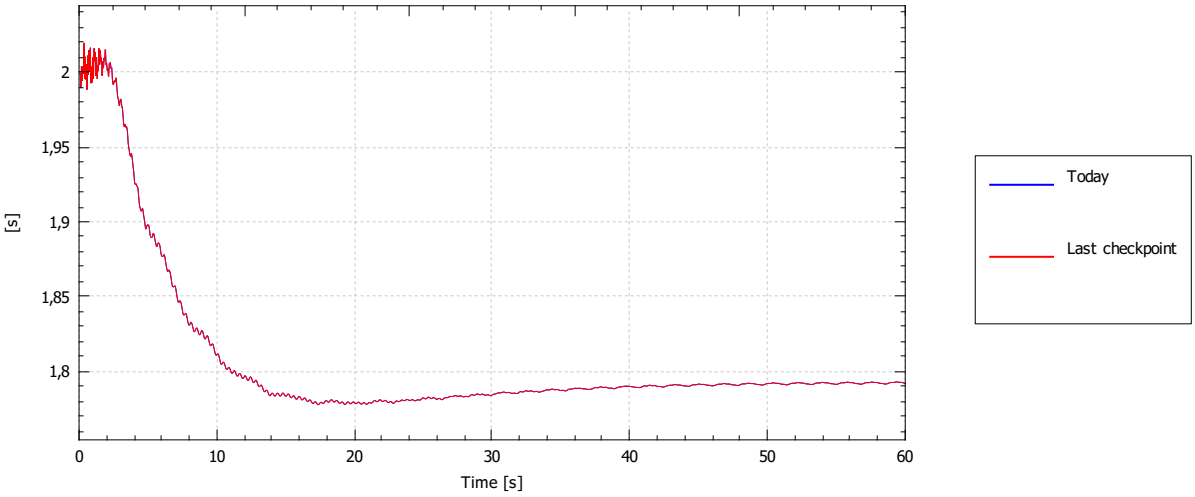

## Tip speed



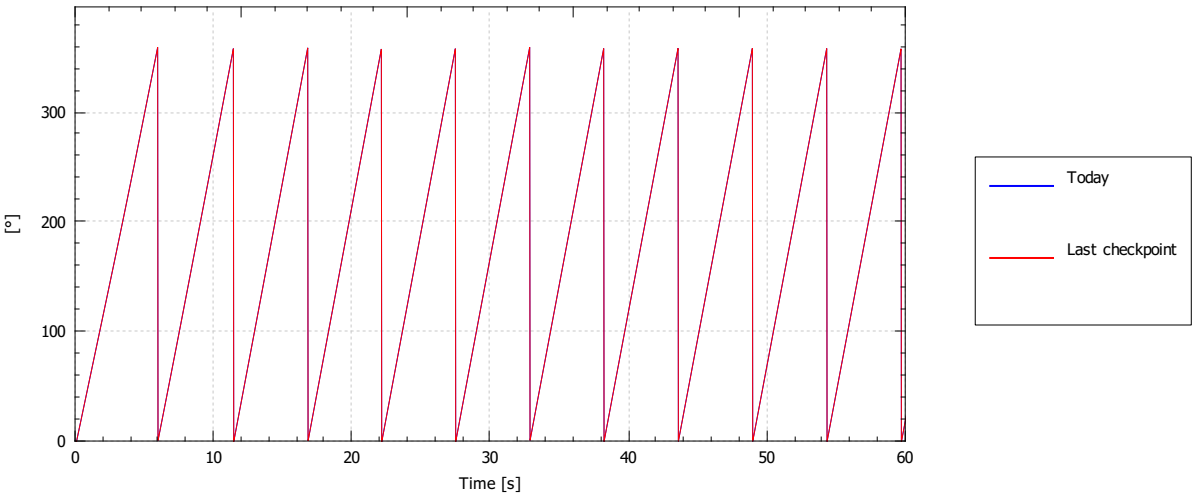

## 1P (one revolution)



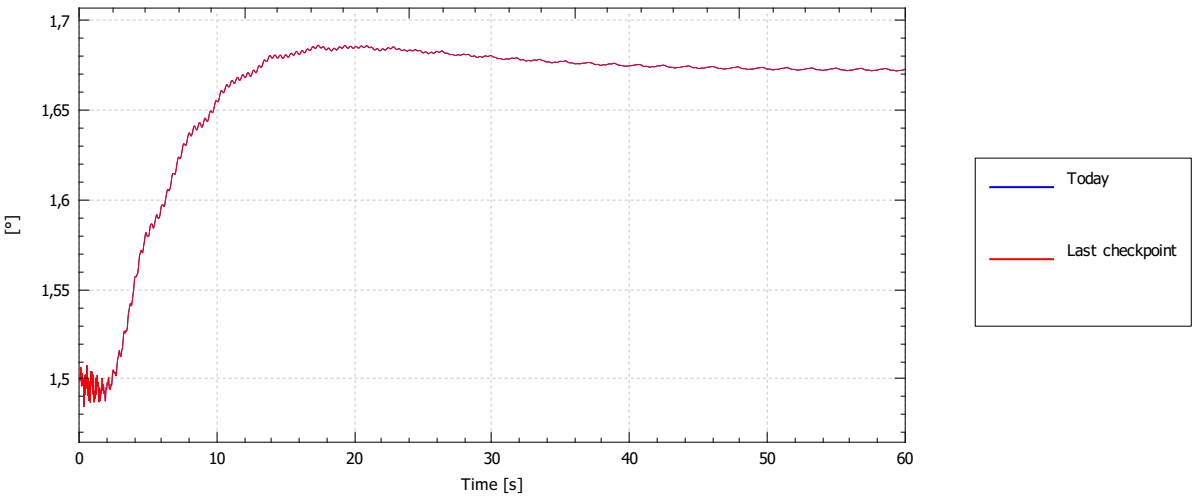
nP (blade passing)



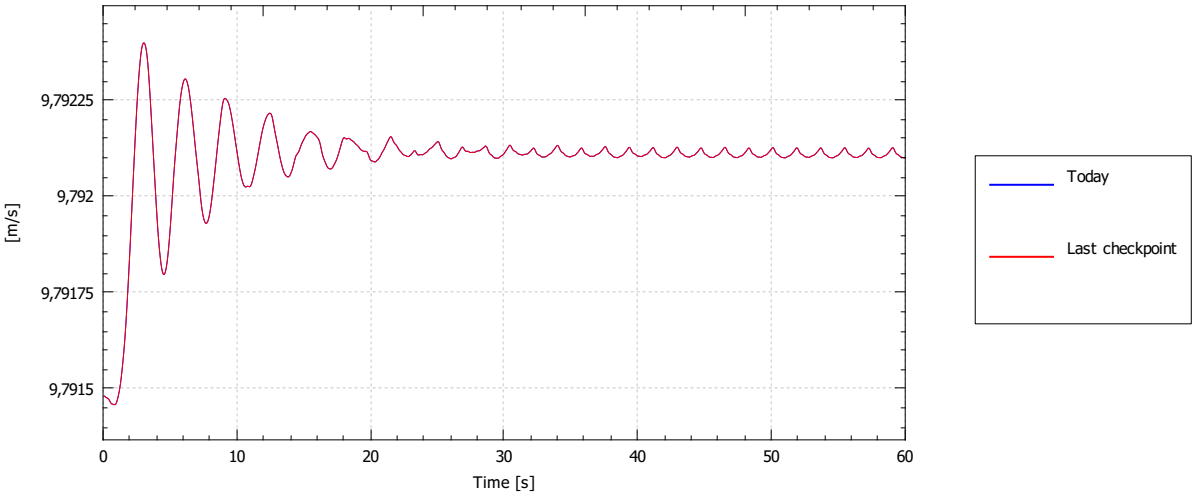

Azimuth angle



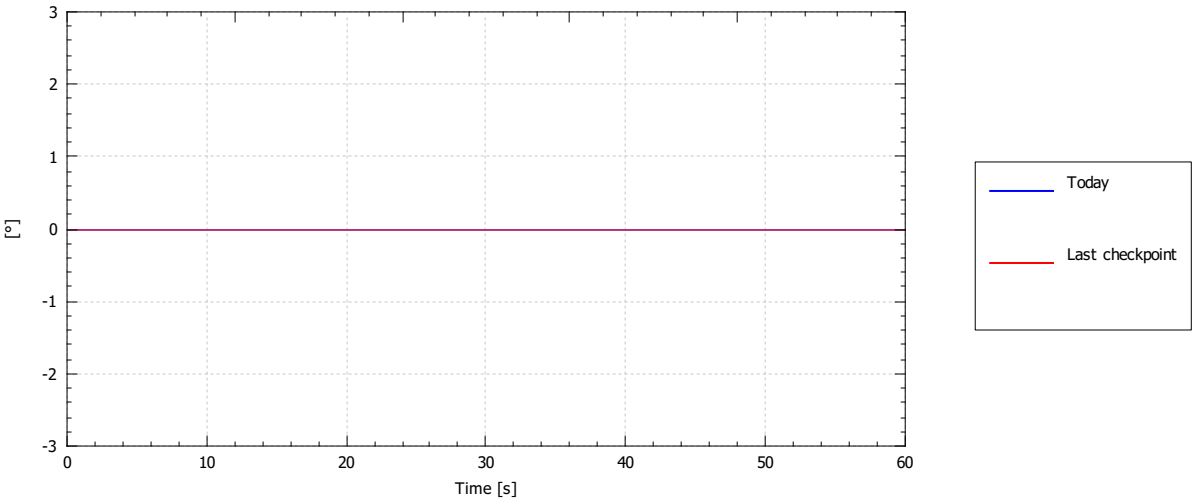

Rotation per timestep



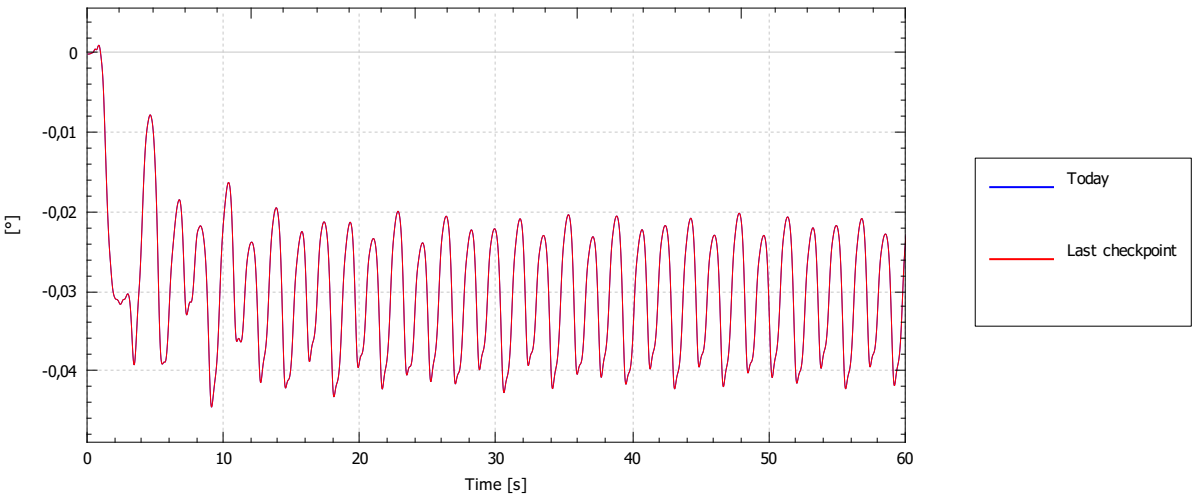
Wind speed at hub, magnitude



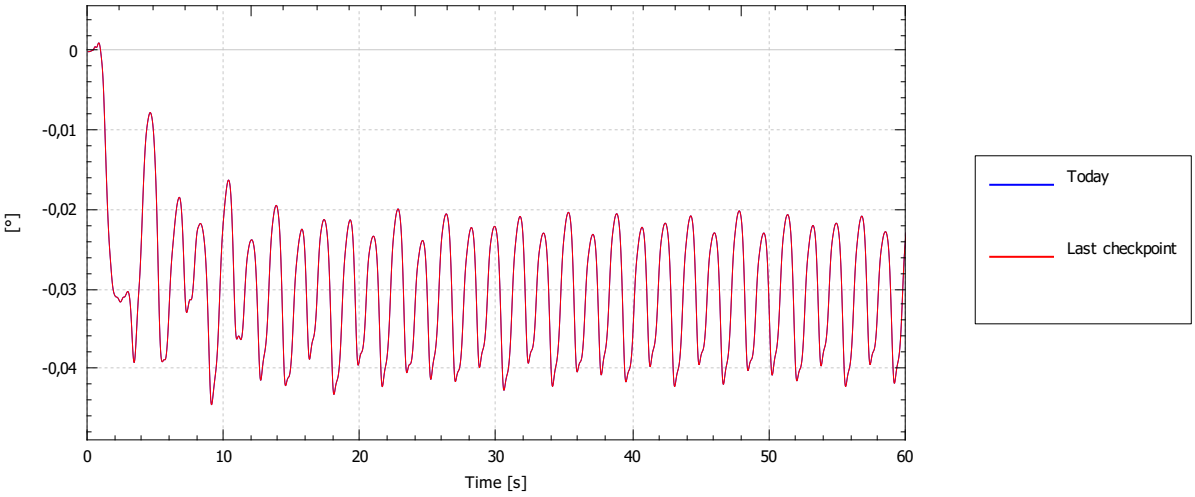

Wind angle at hub



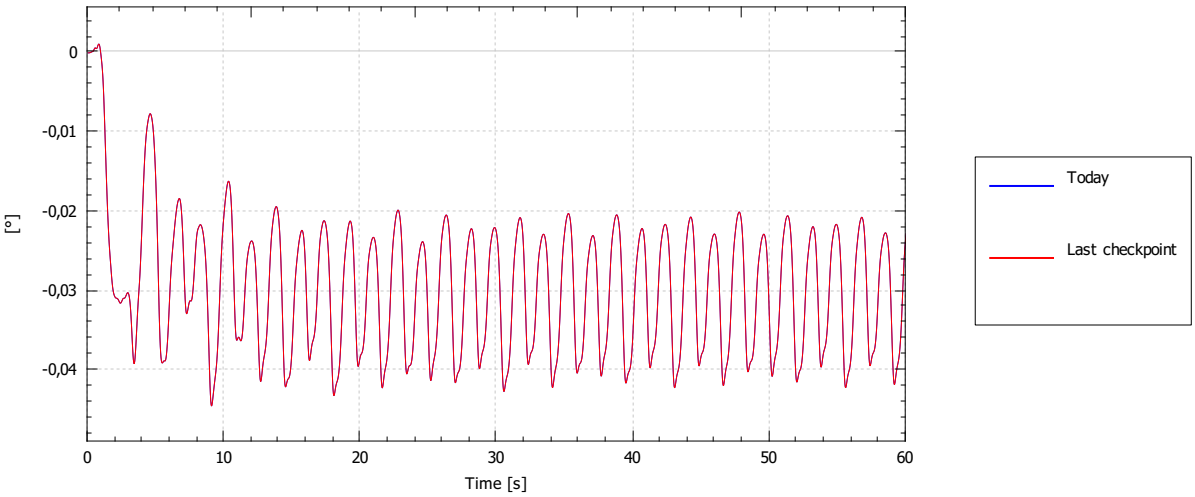

Yaw angle relative to forward



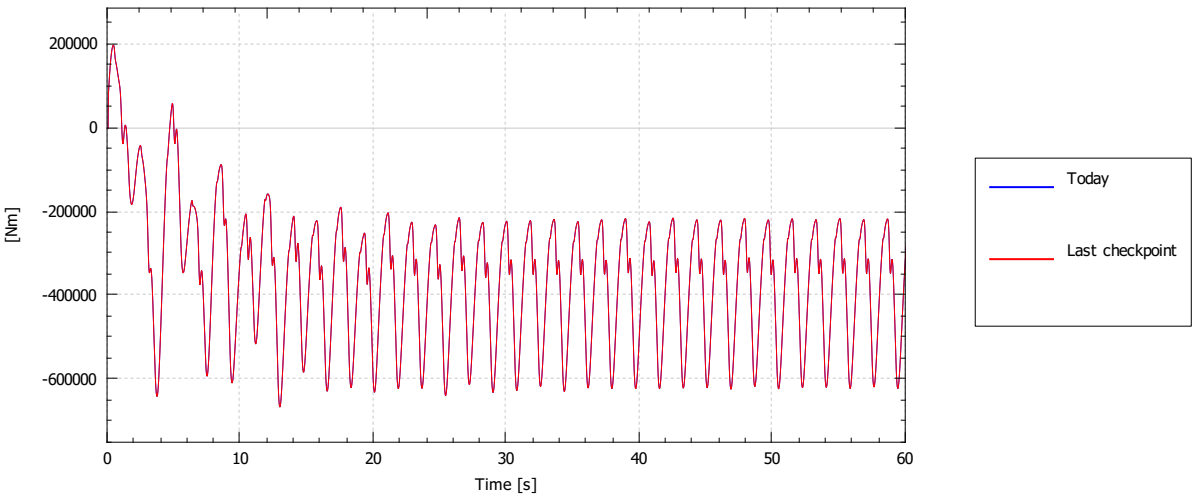
Yaw angle to reference direction




Yaw error

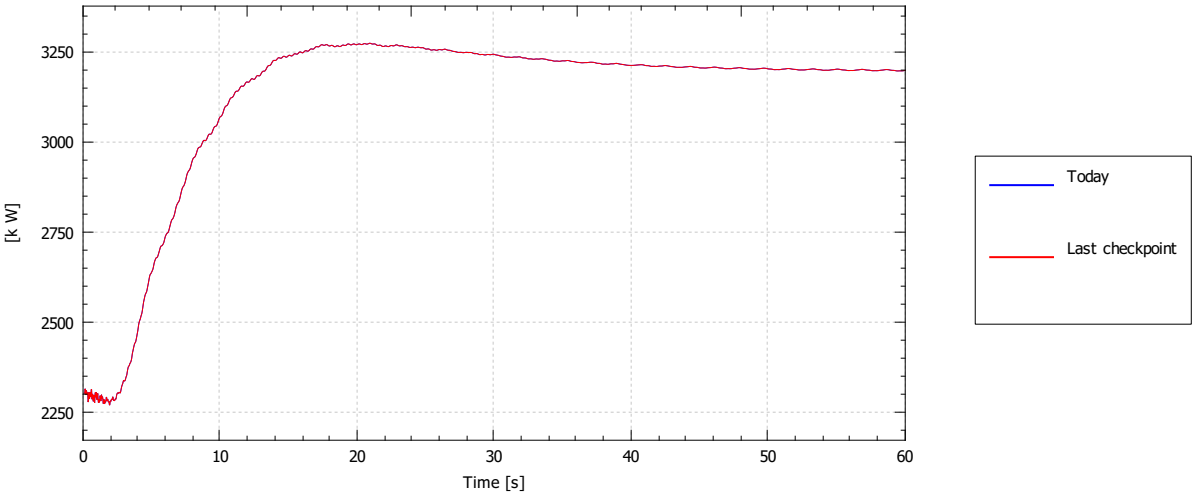



Torque about yaw axis

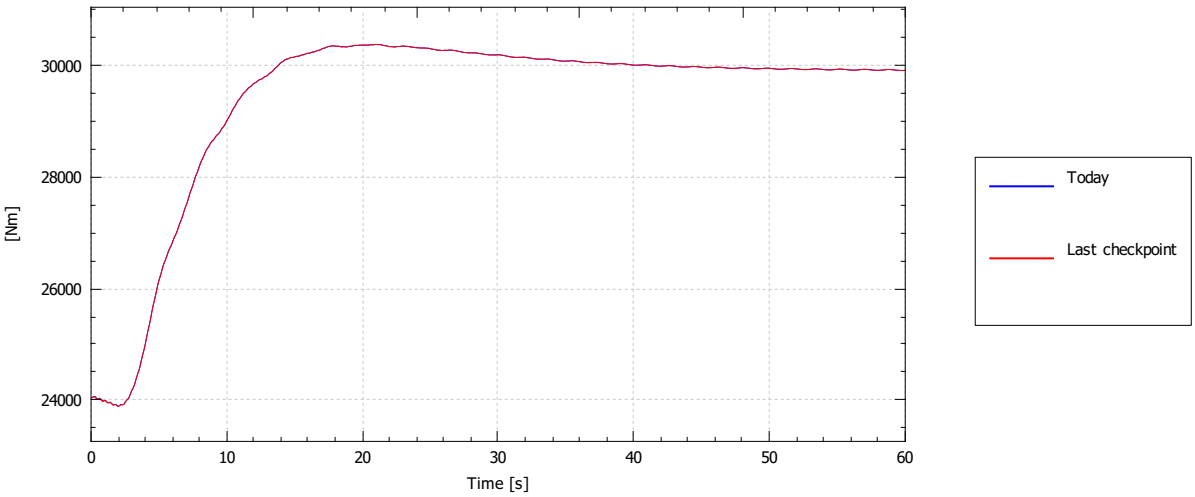


**Generator**

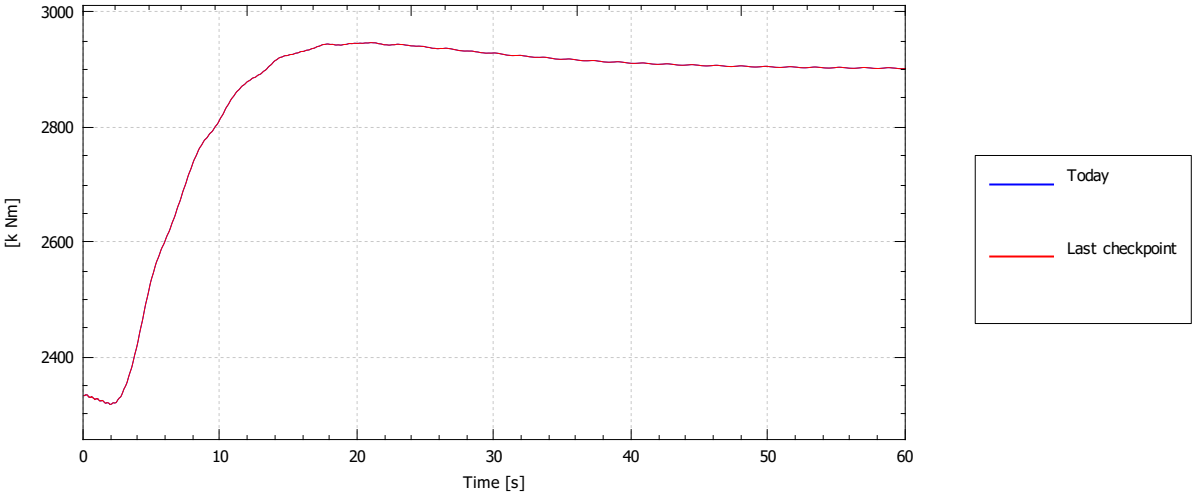
Power (electrical)



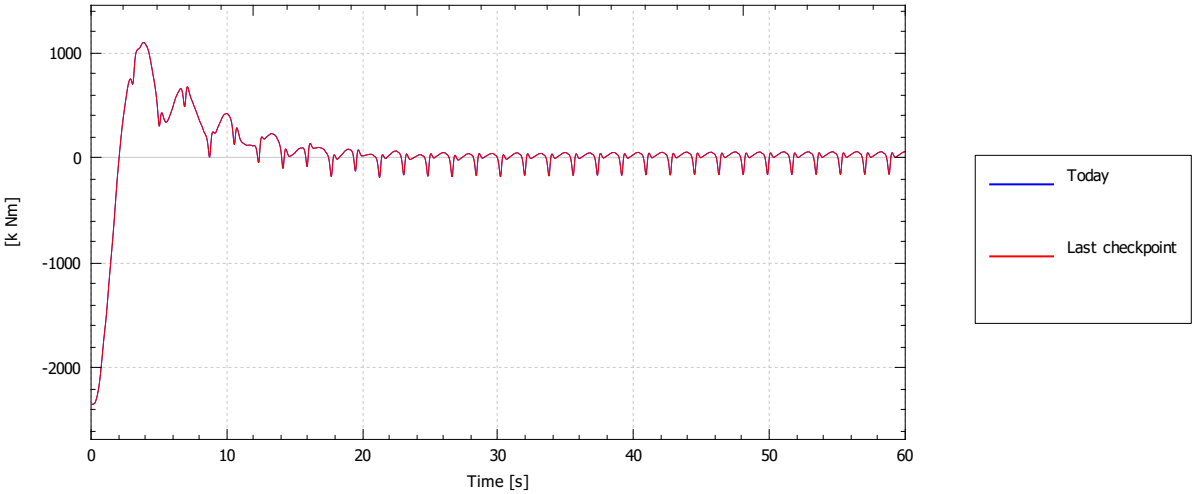

Torque



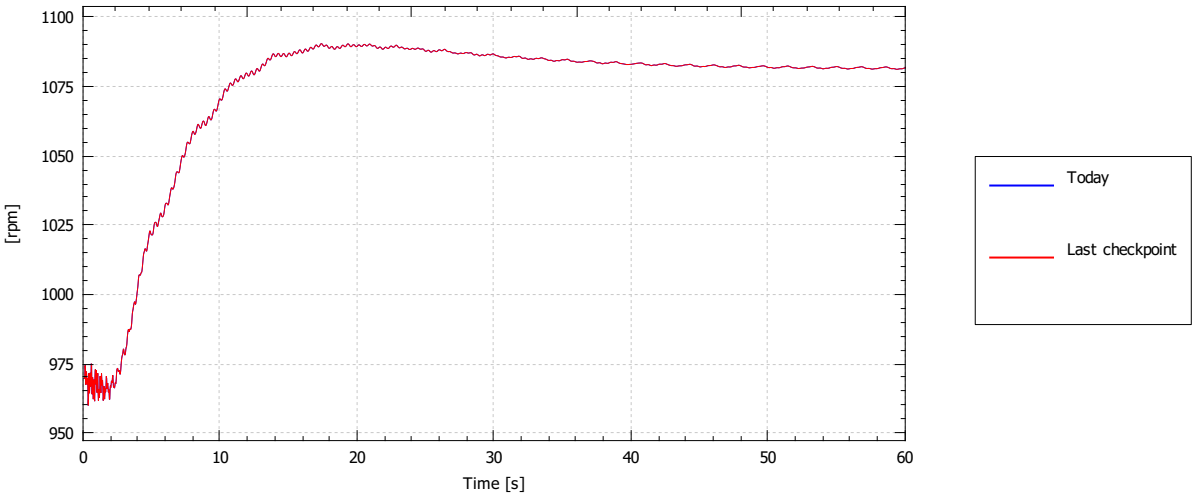

Torque on main shaft



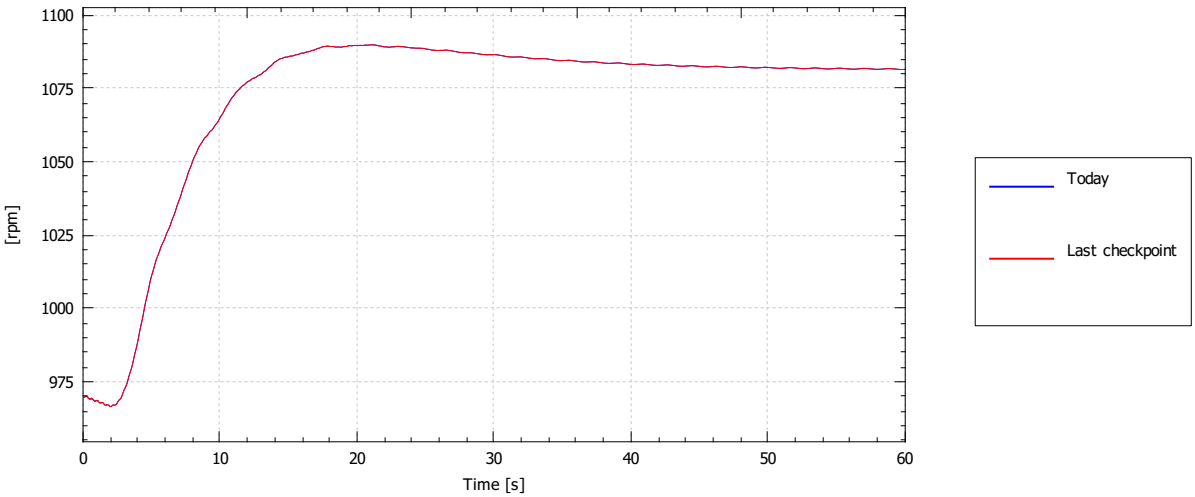
## Torque diff. on main shaft

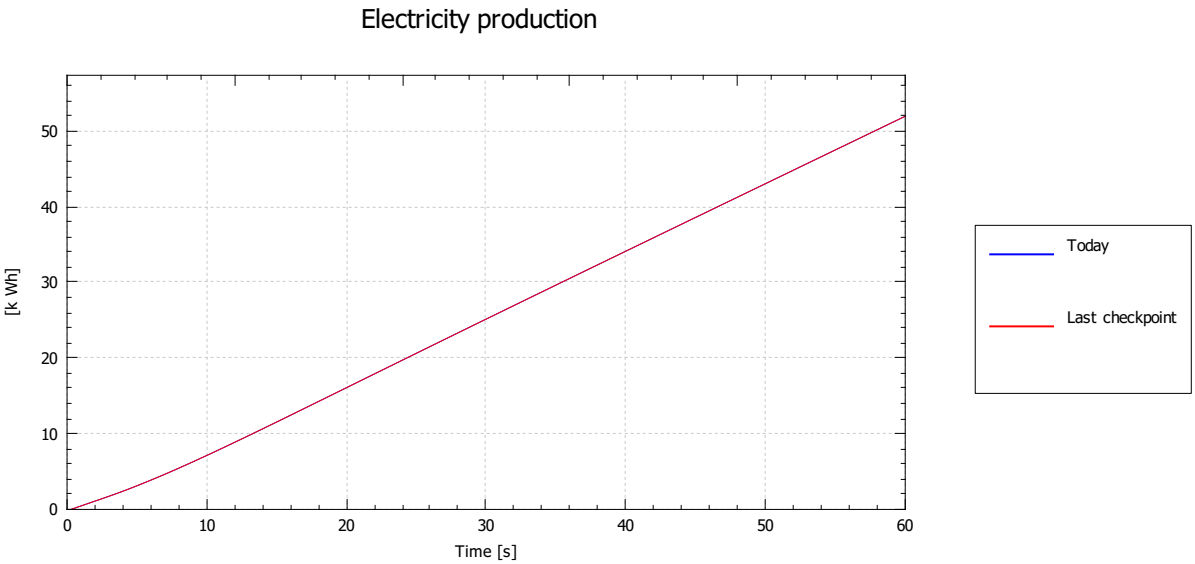


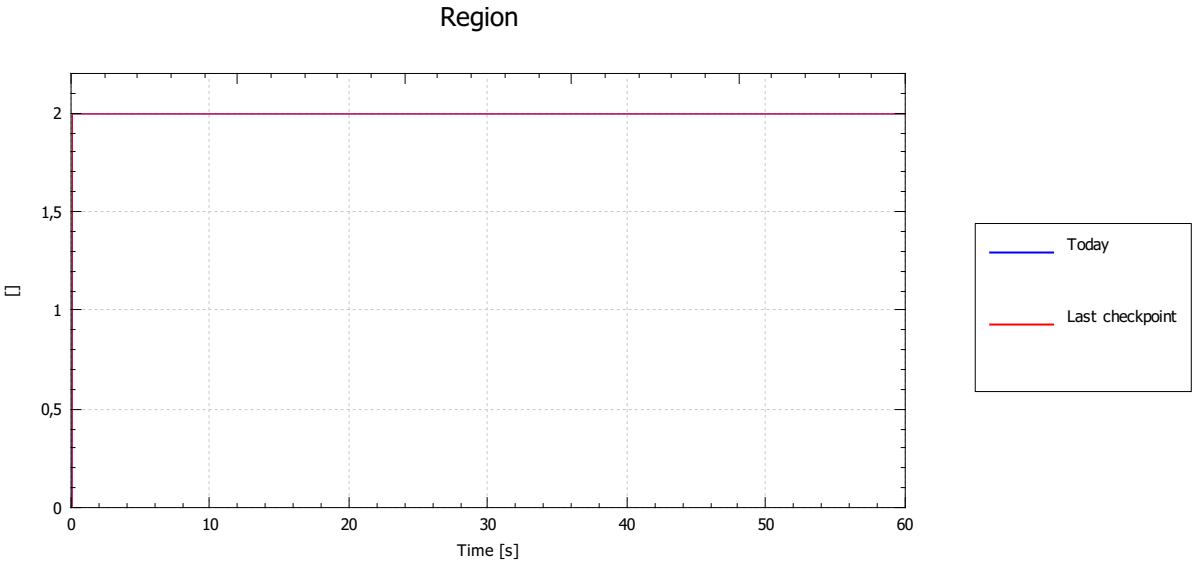

## RPM




## Filtered RPM

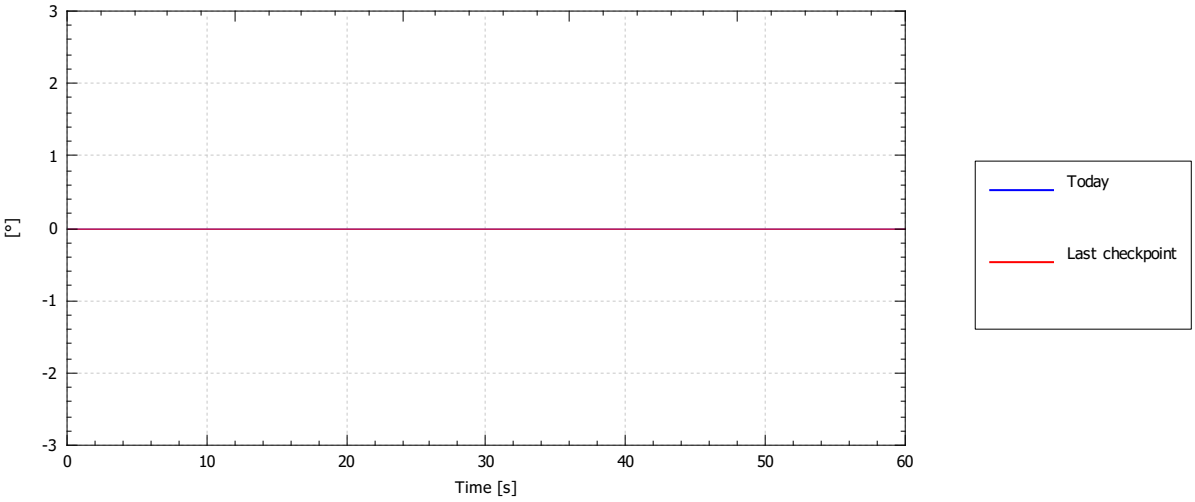




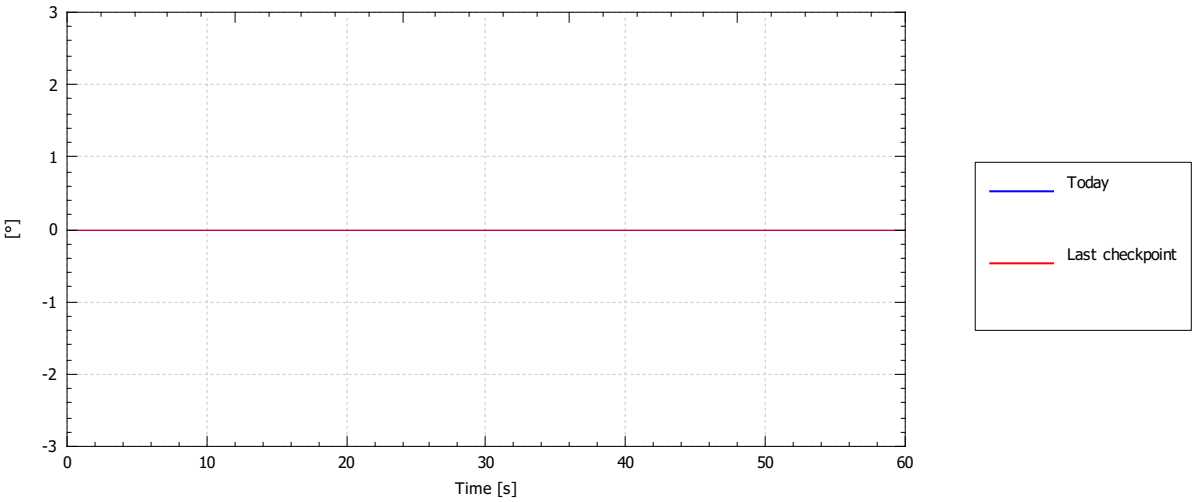




**Demanded pitch controller**

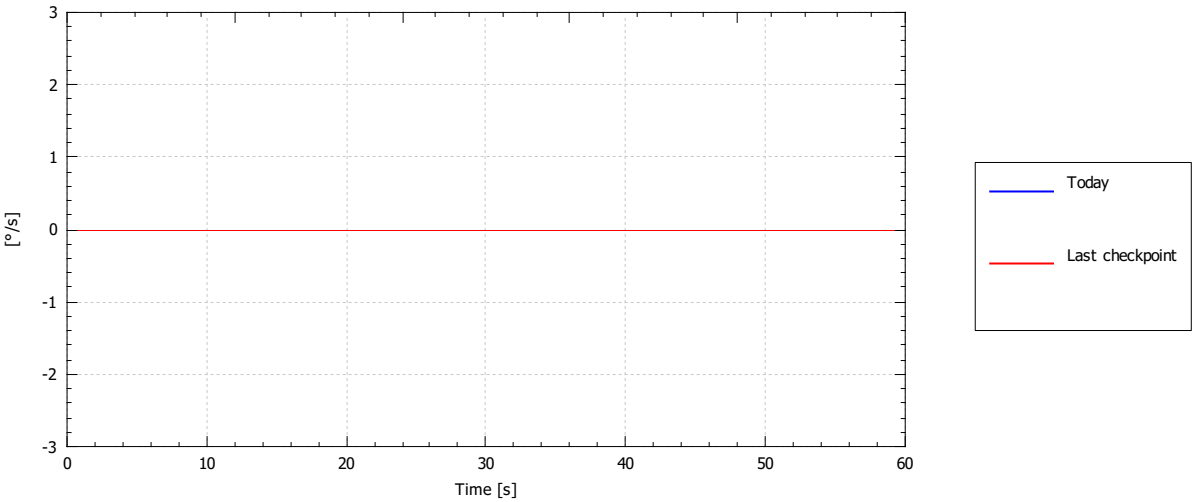
Demanded collective pitch angle



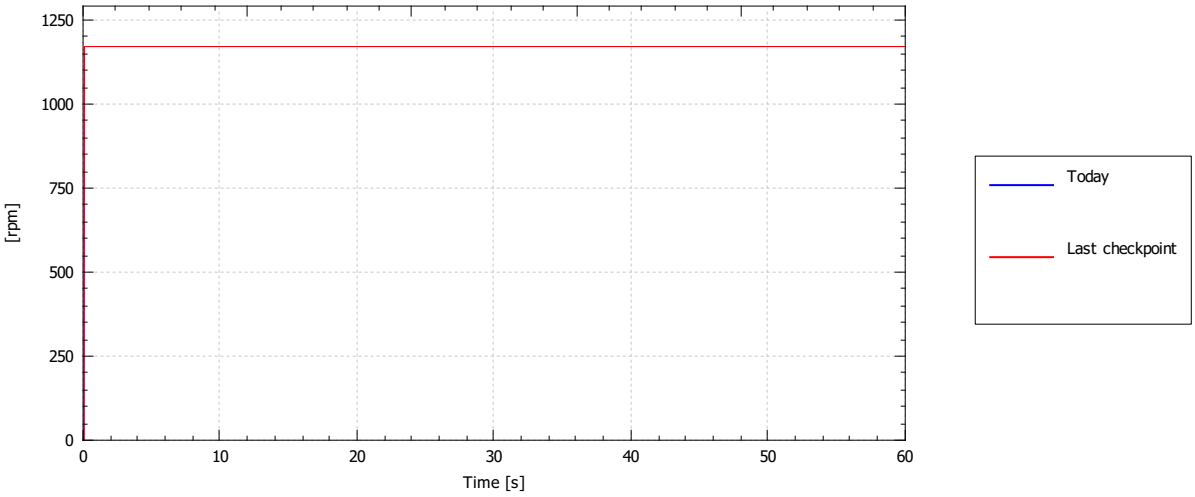

Cumulative demanded collective pitch angle



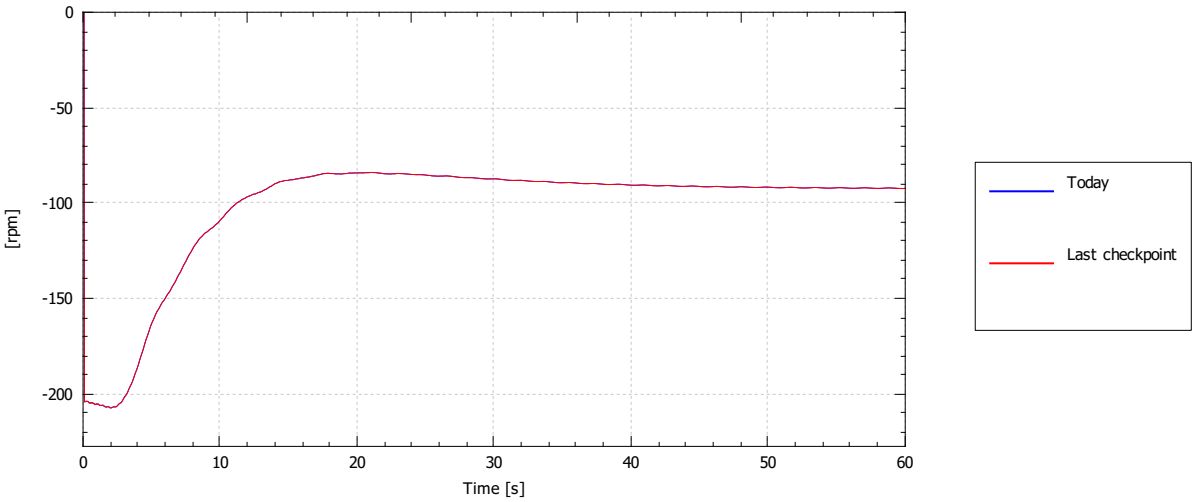

Demanded collective pitch angle rate



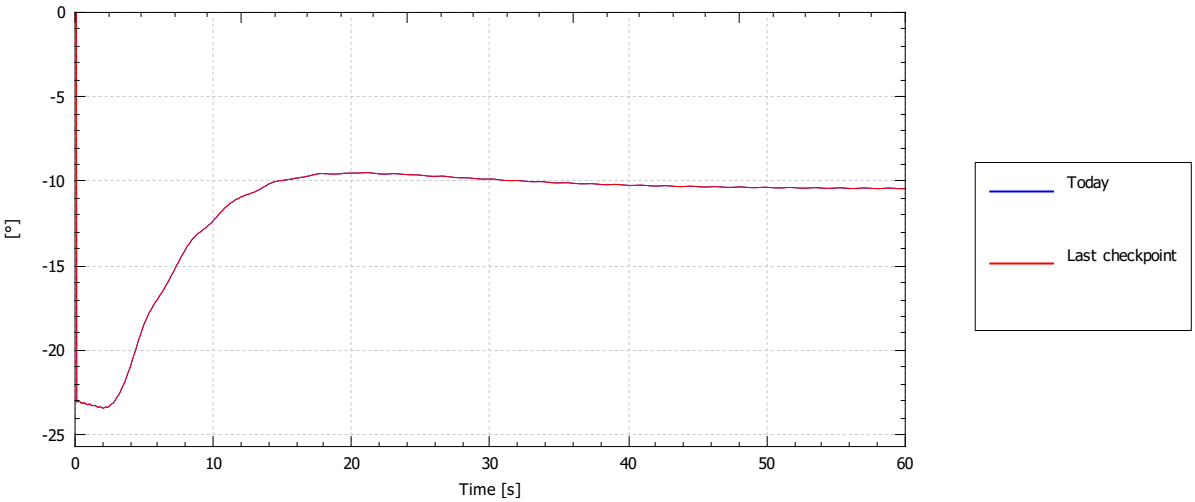
## Set point



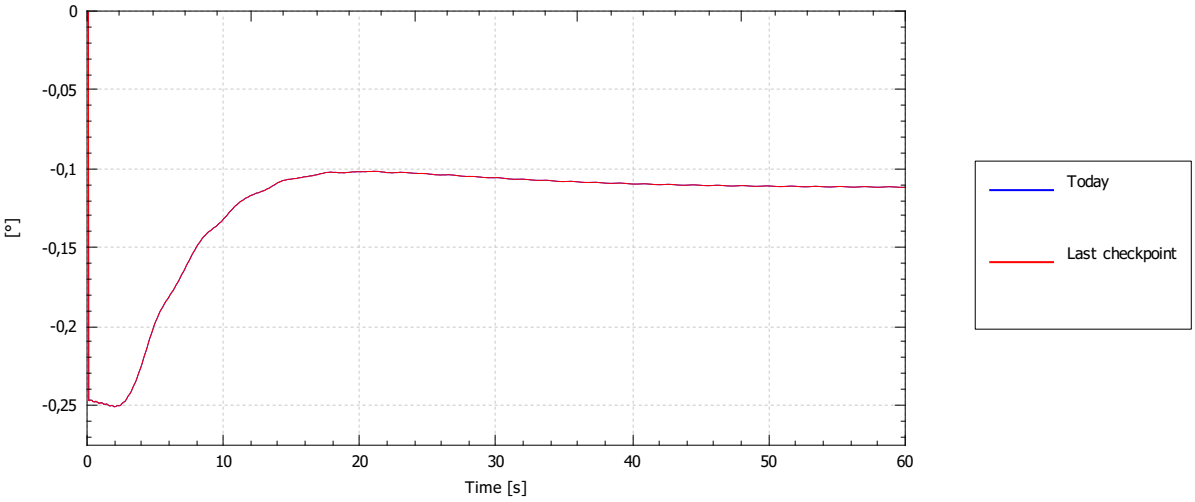

## RPM error



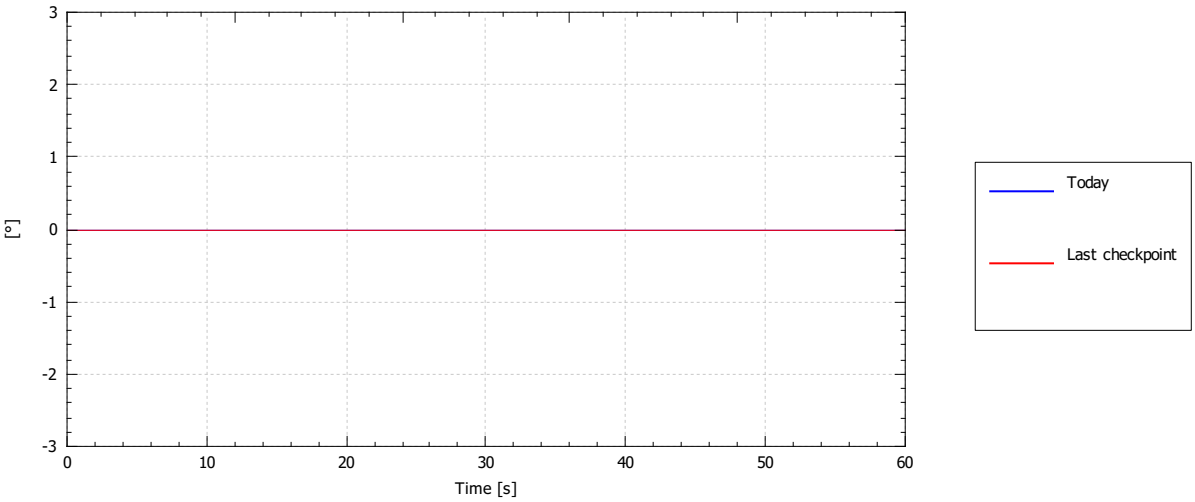

## P term



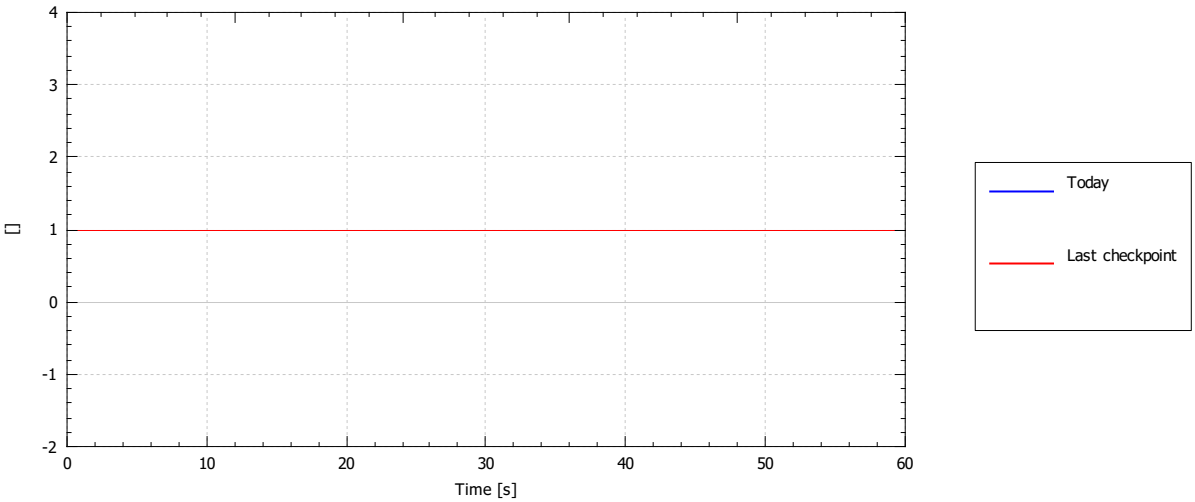
I term



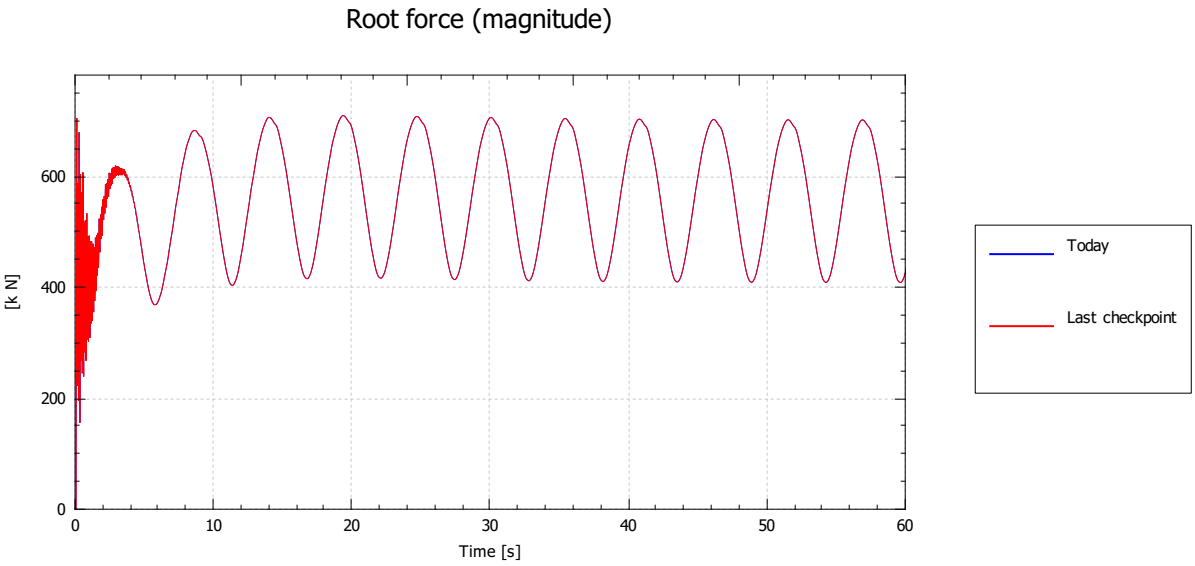

D term

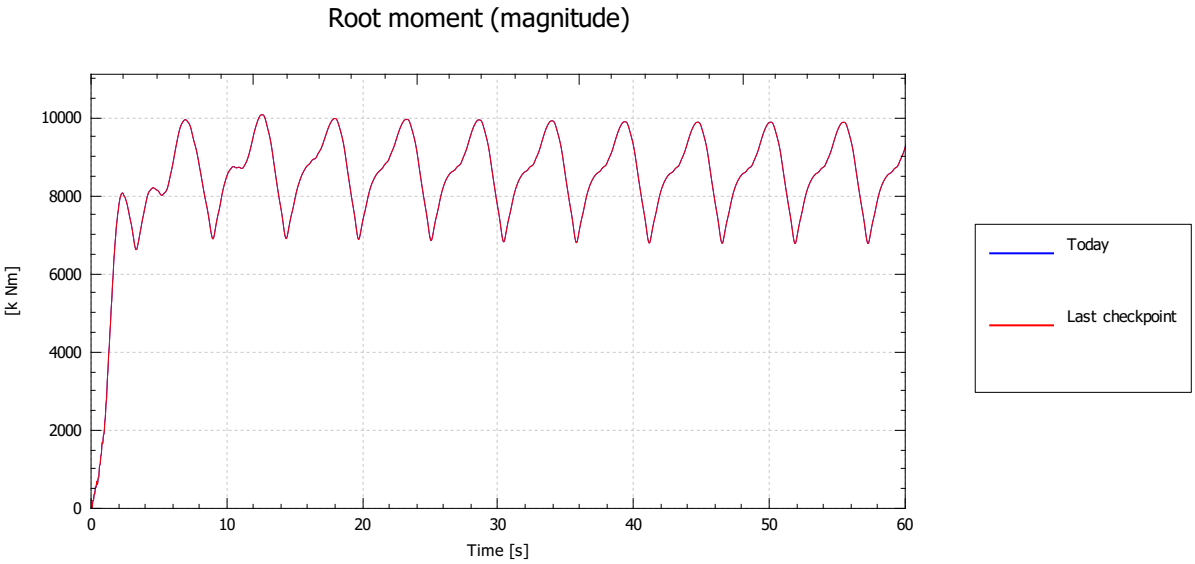


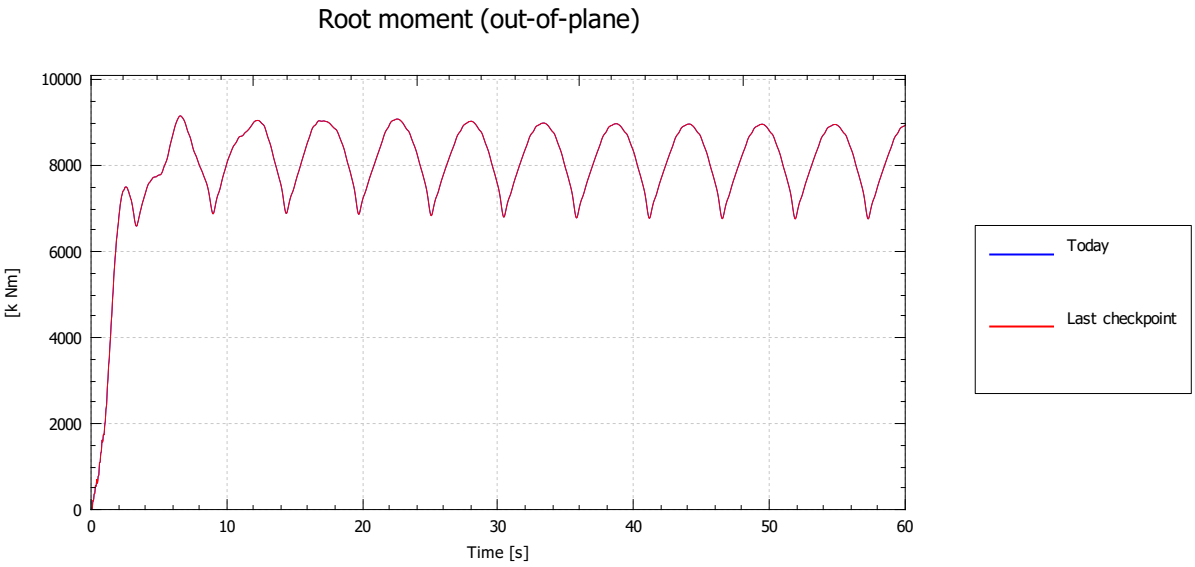

Gain scheduling factor



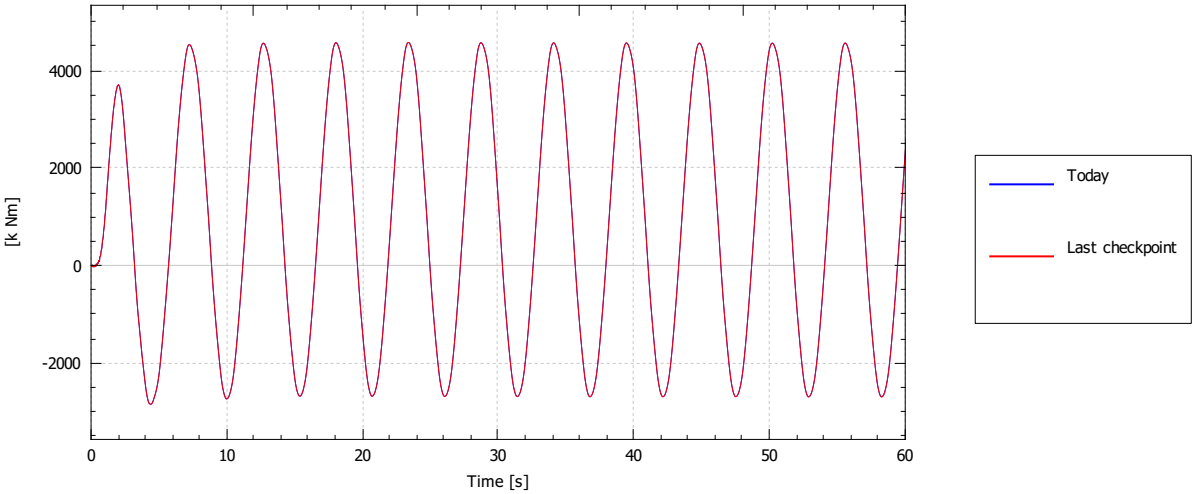
**Blade [Time] [Blade 1]**



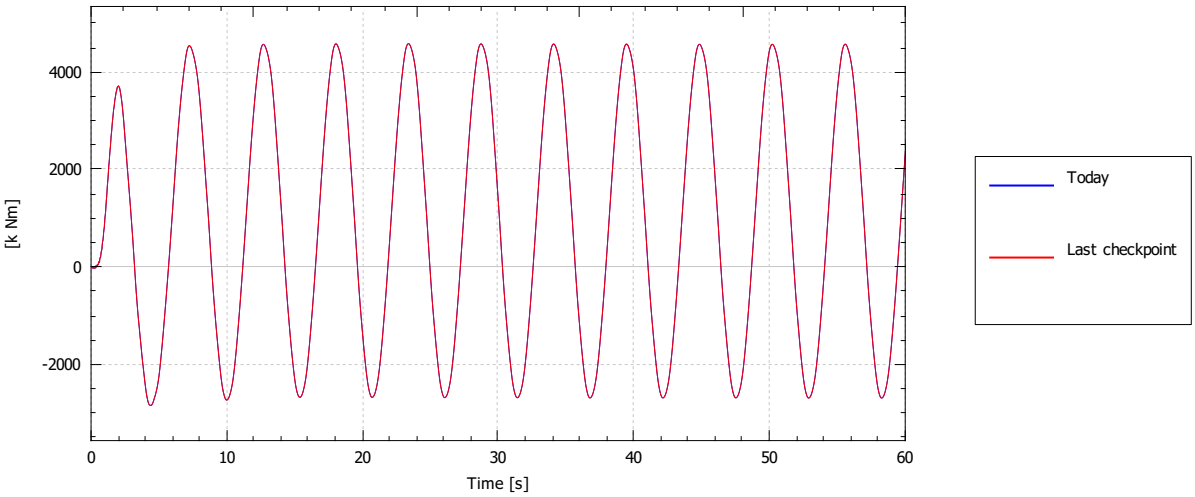



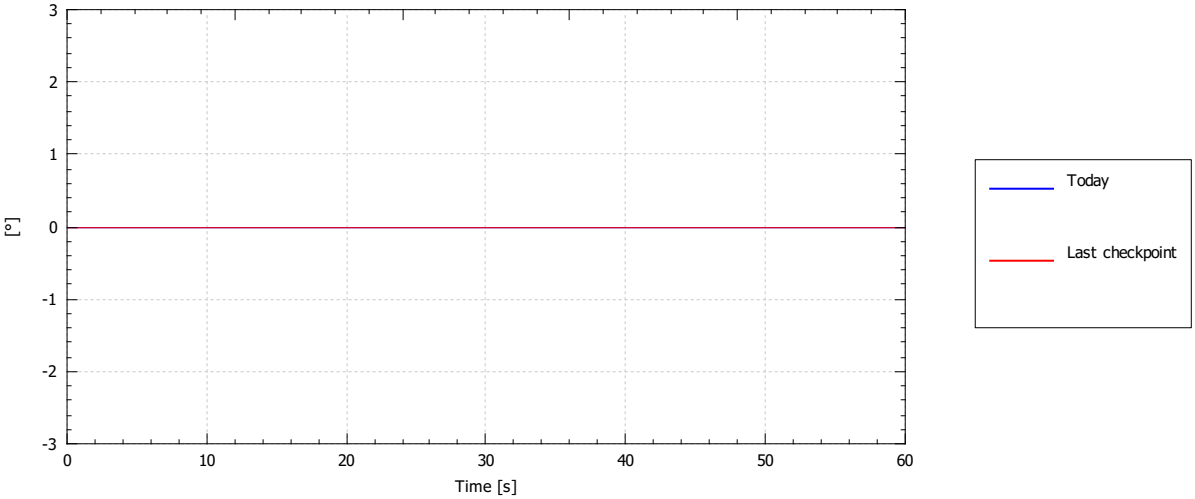
Root moment (in-plane)



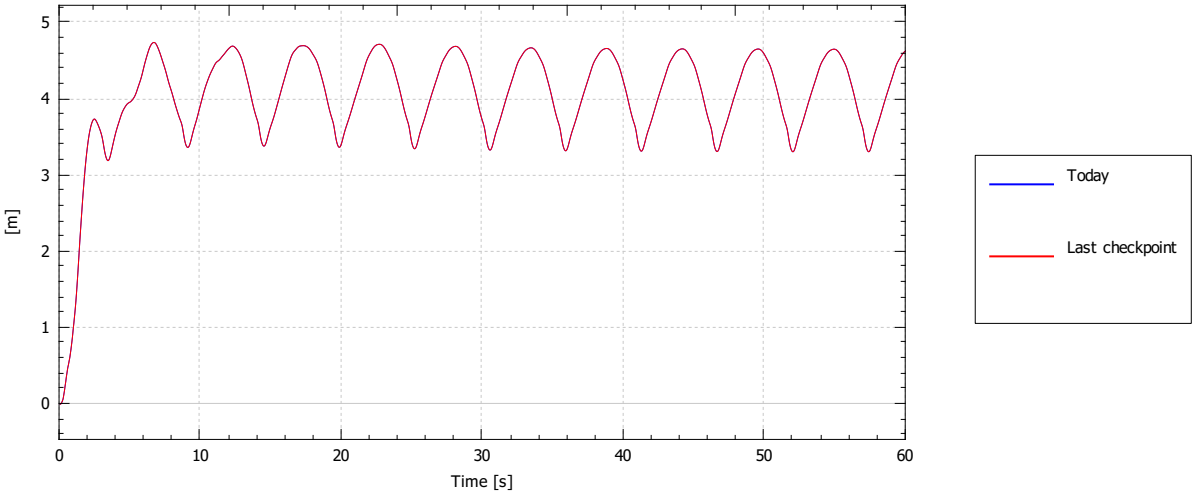

Root moment about shaft



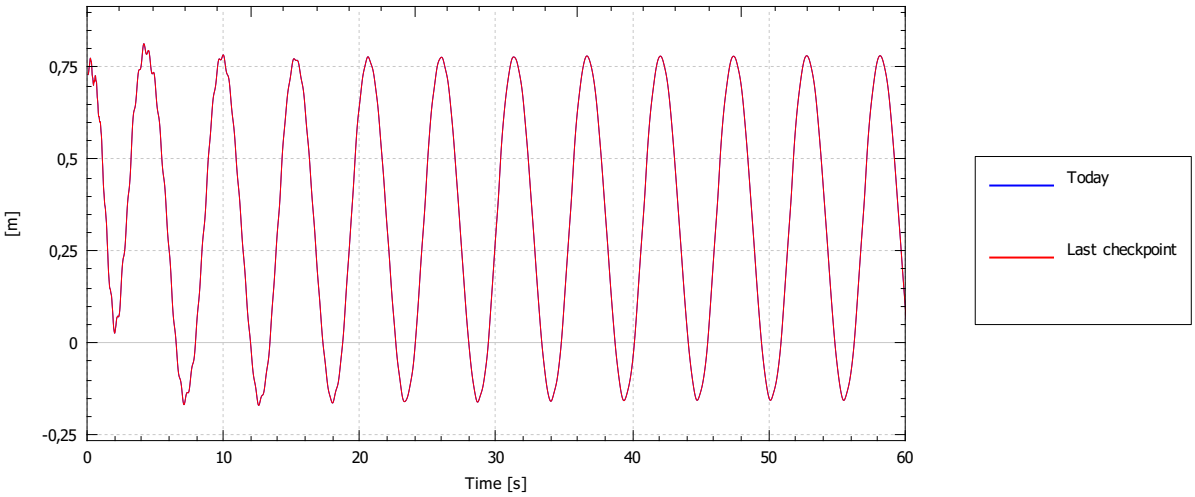

Pitch angle



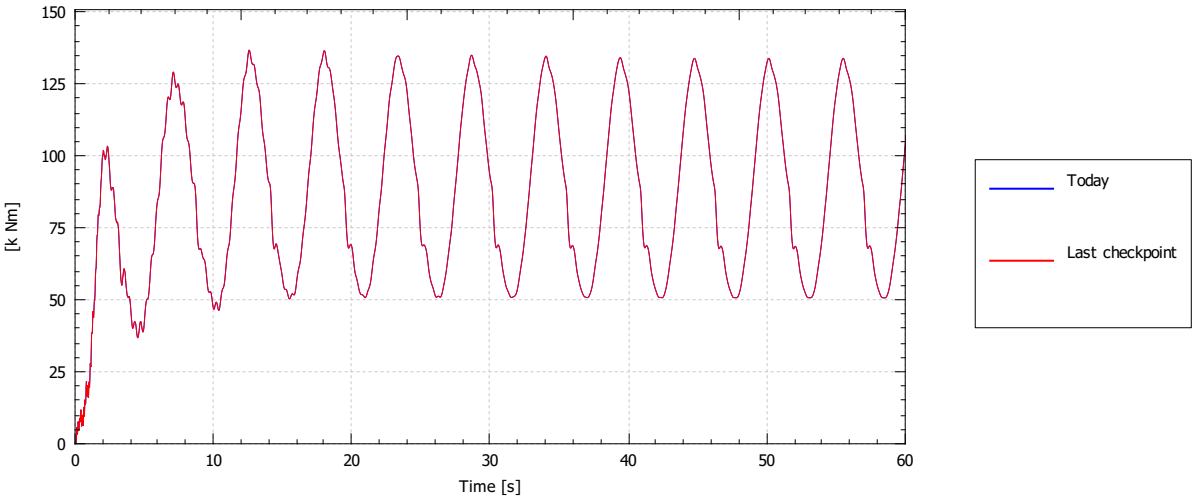
Tip deflection (out-of-plane)




Tip deflection (in-plane)

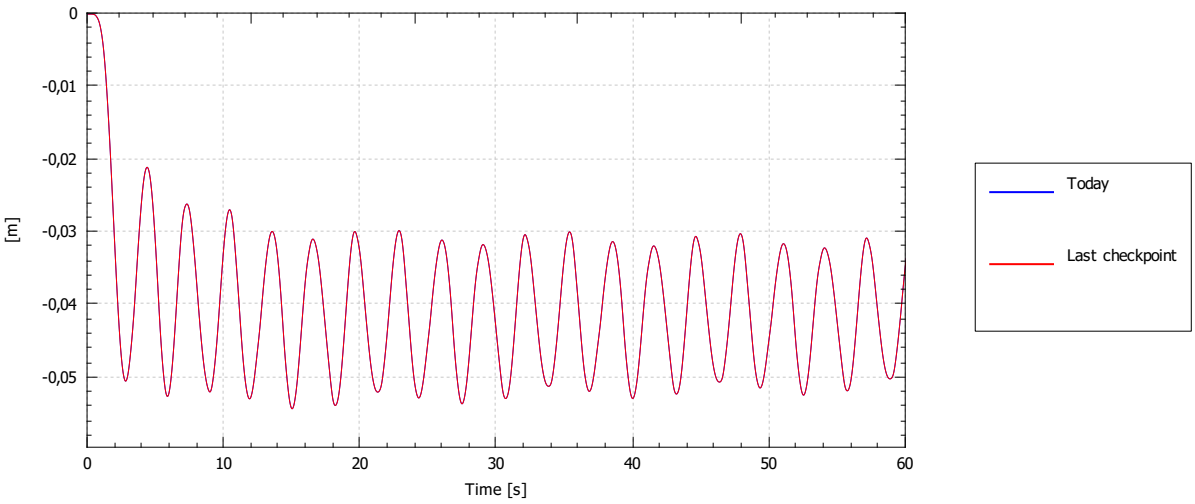



Root torque

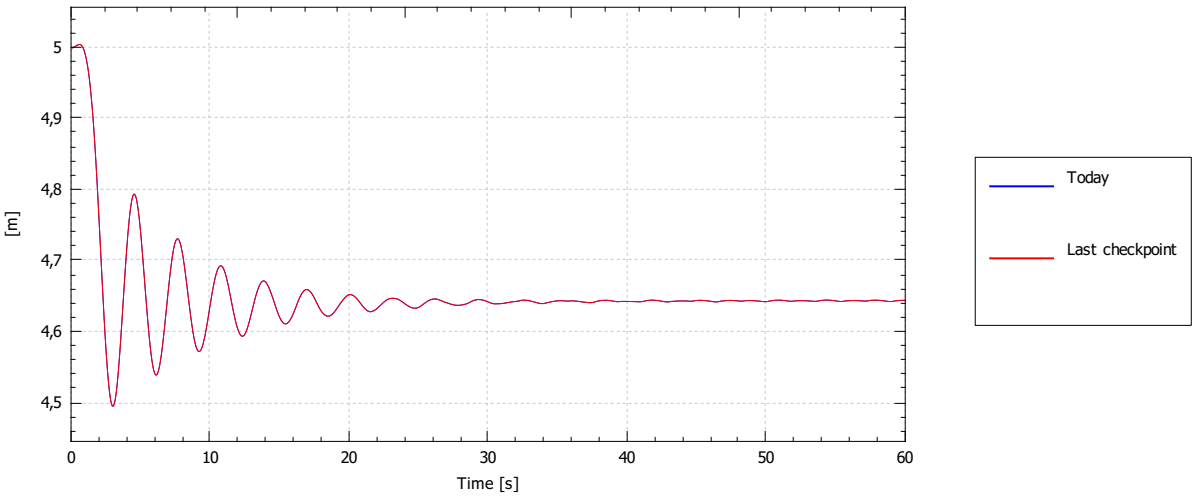


**Node [Node Hub | Hub]**

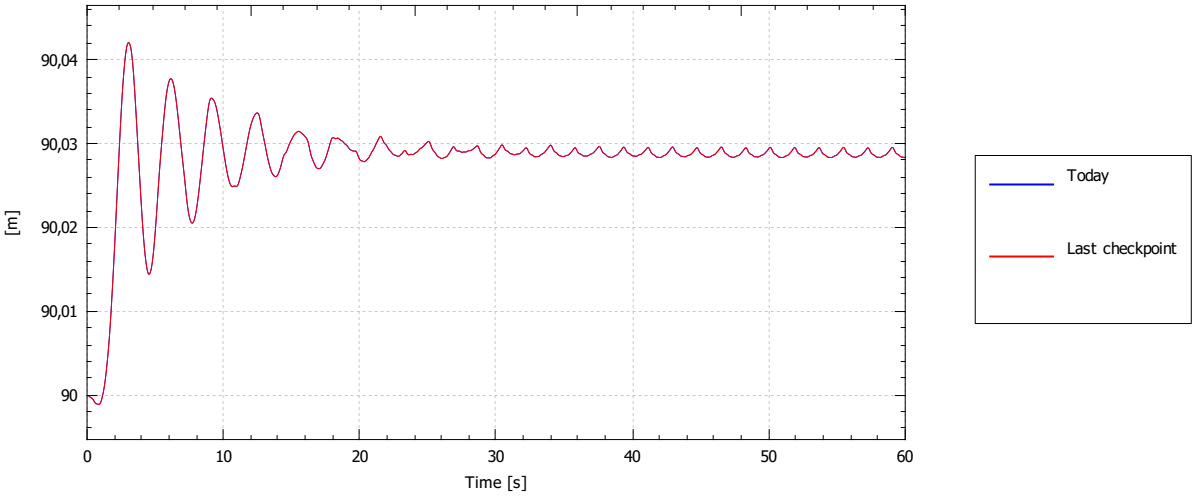
Position (x)



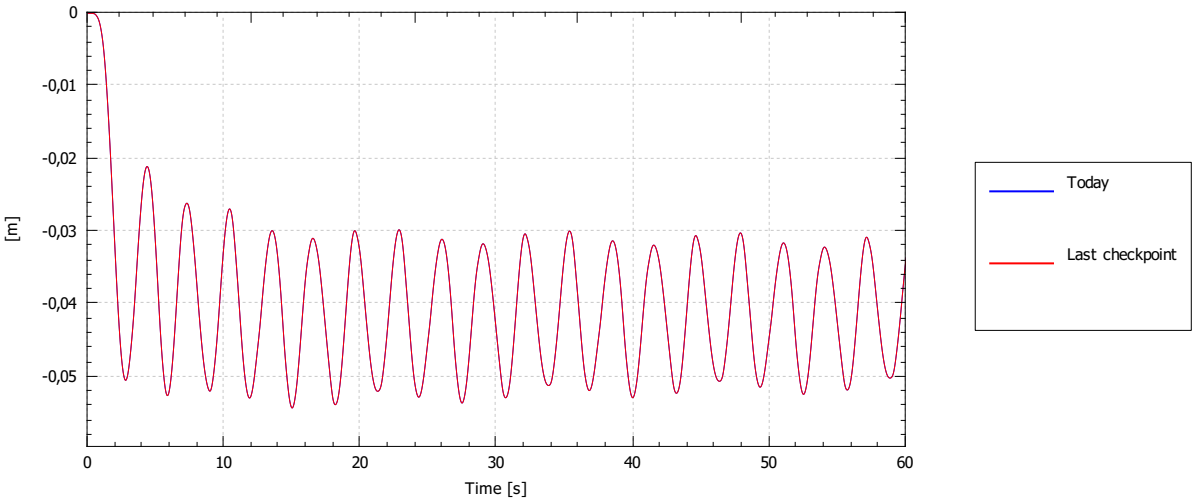

Position (y)



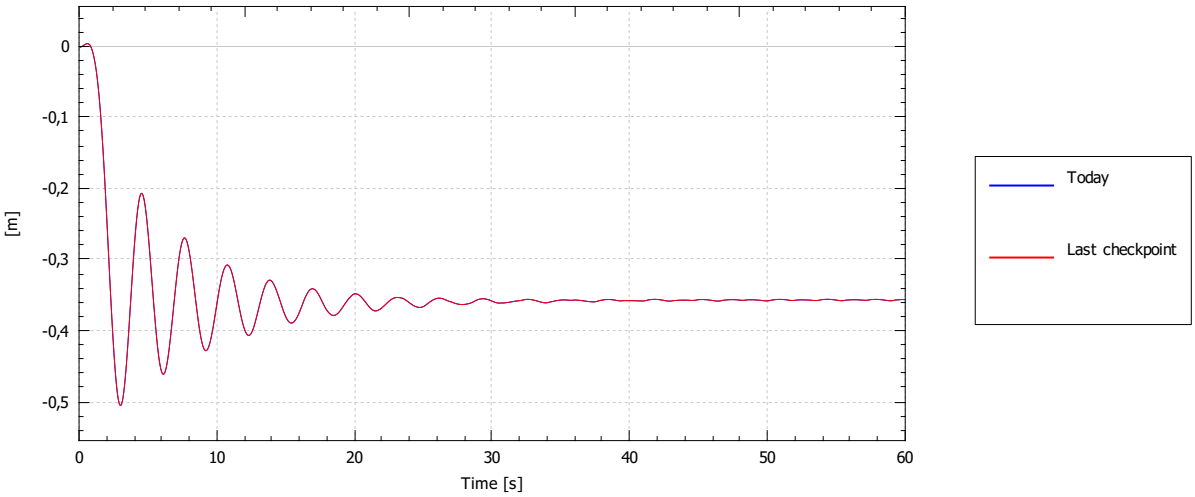

Position (z)



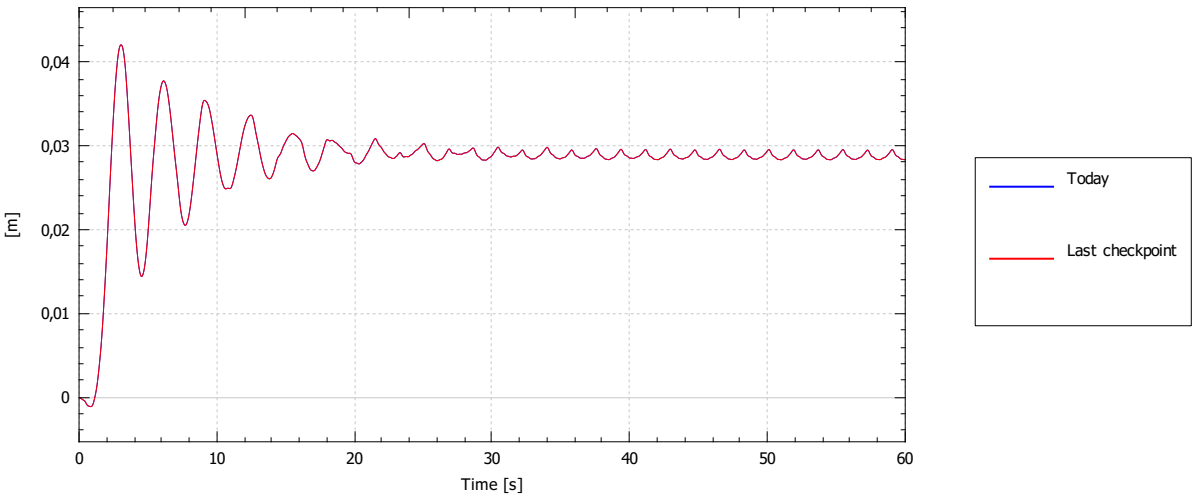
Displacement (u)



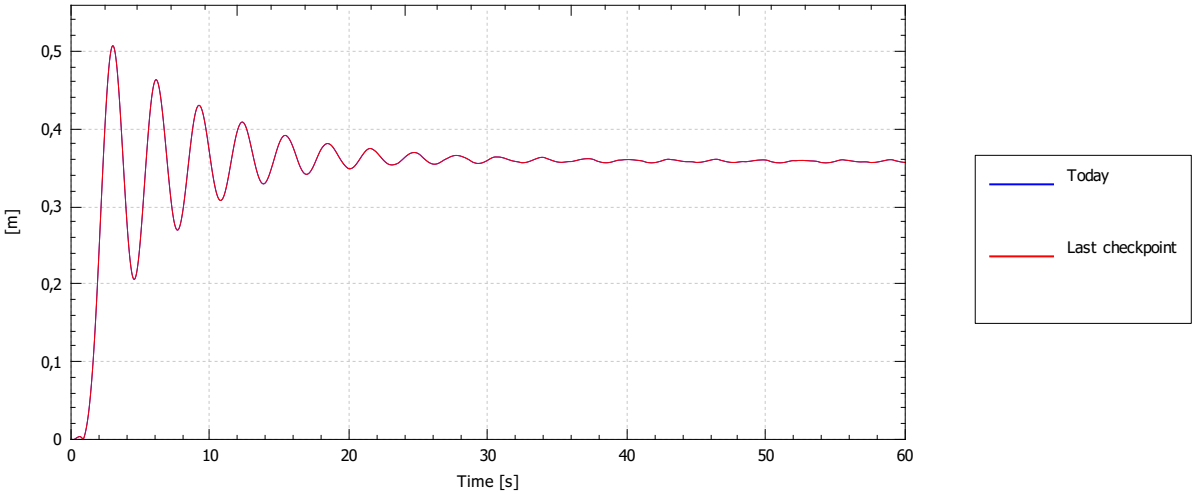

Displacement (v)



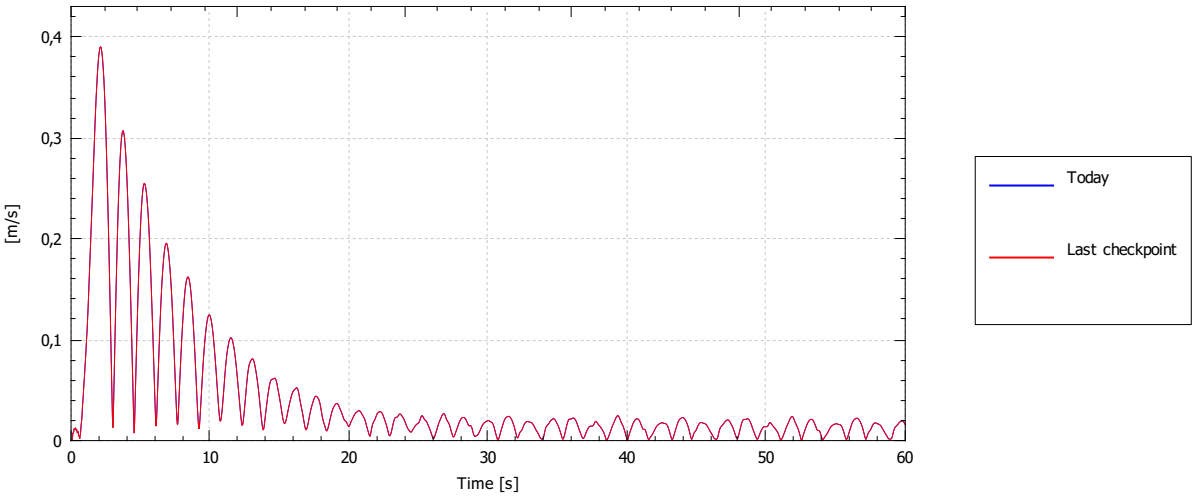

Displacement (w)



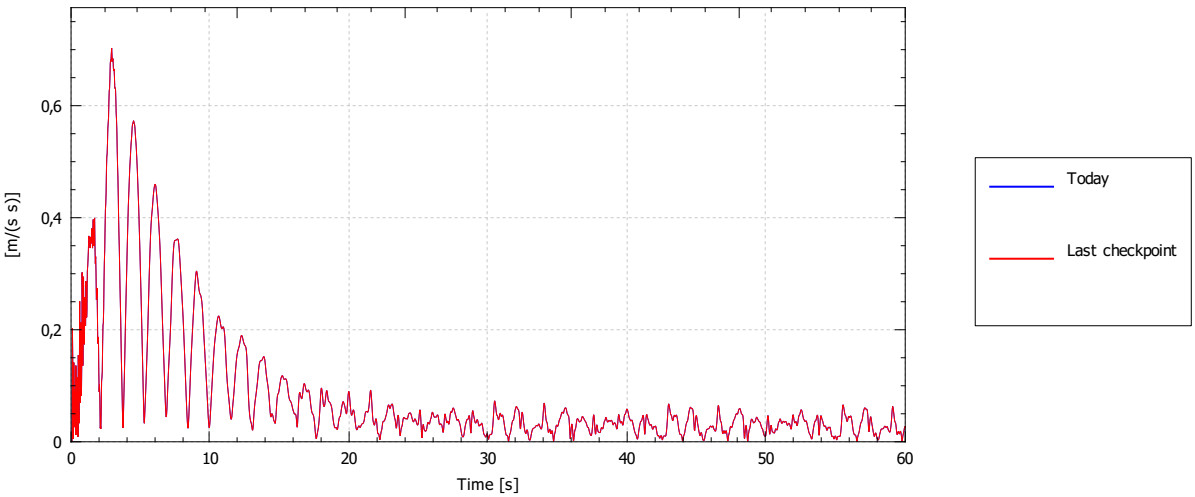
Displacement magnitude



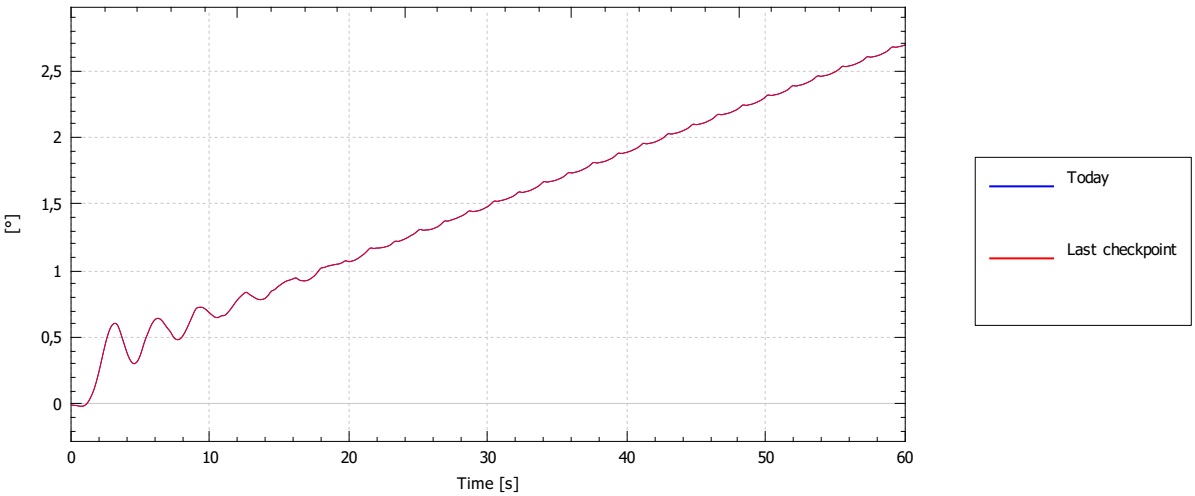

Speed



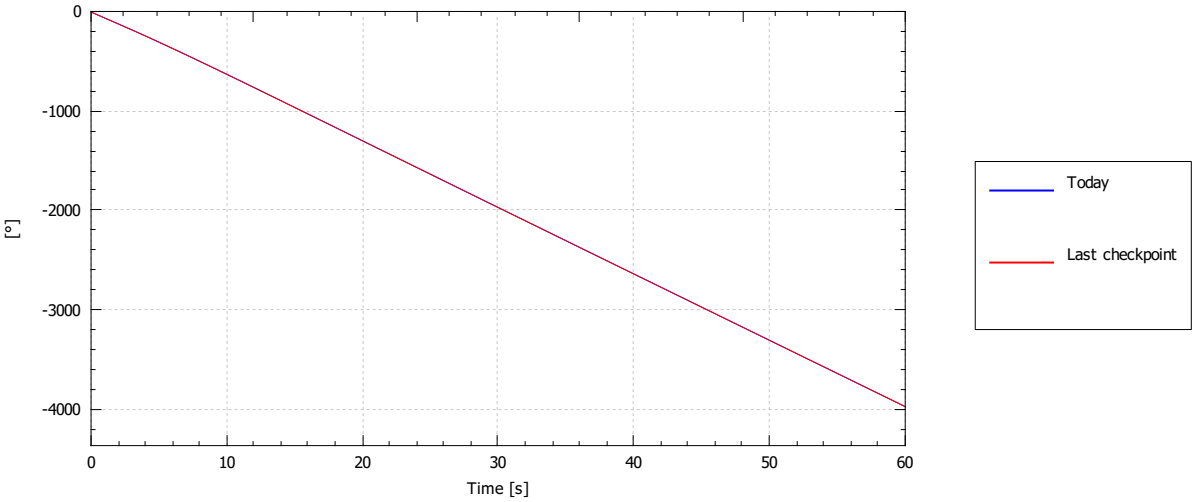

Acceleration, magnitude



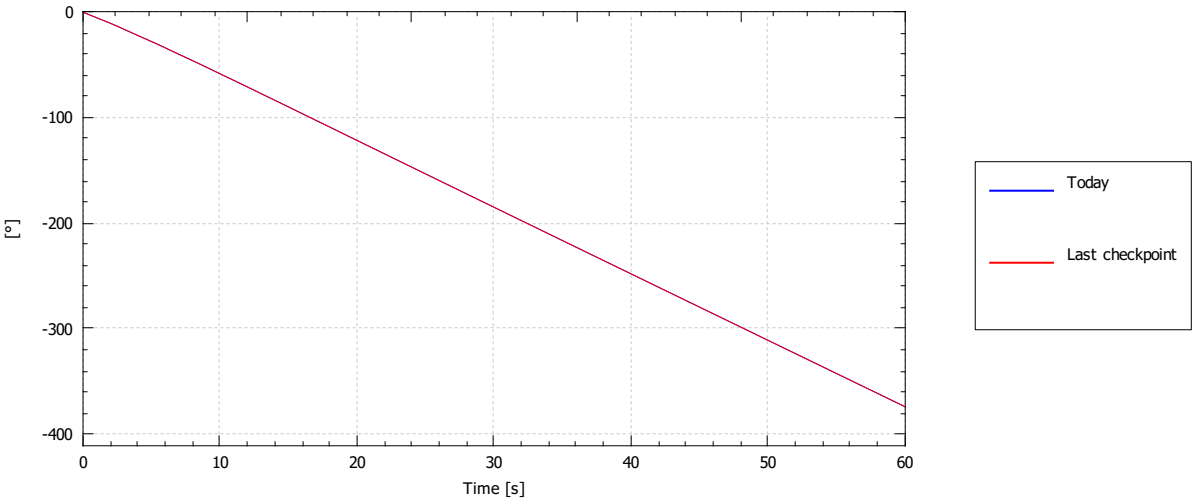
Rotational displacement (ru)



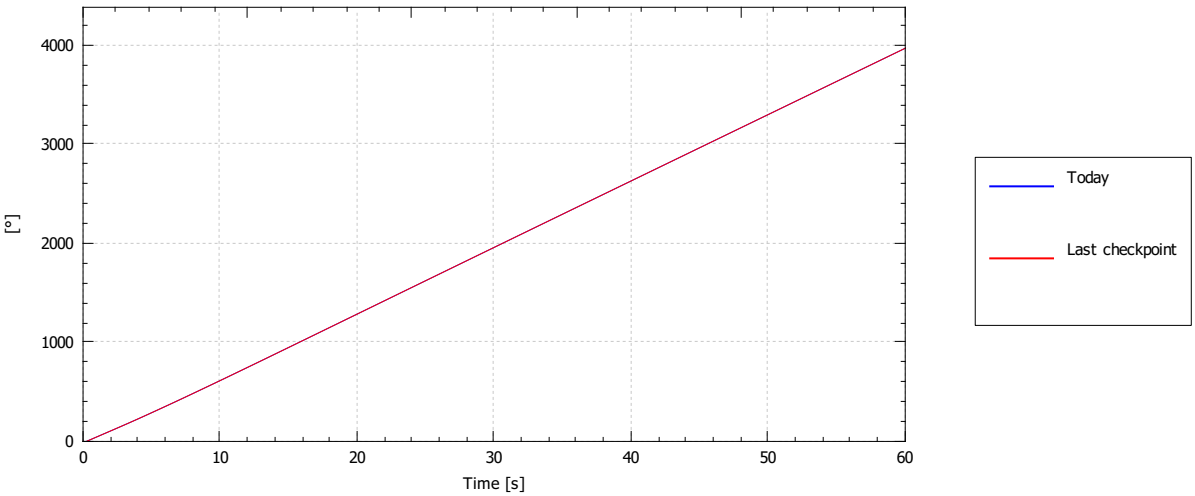

Rotational displacement (rv)



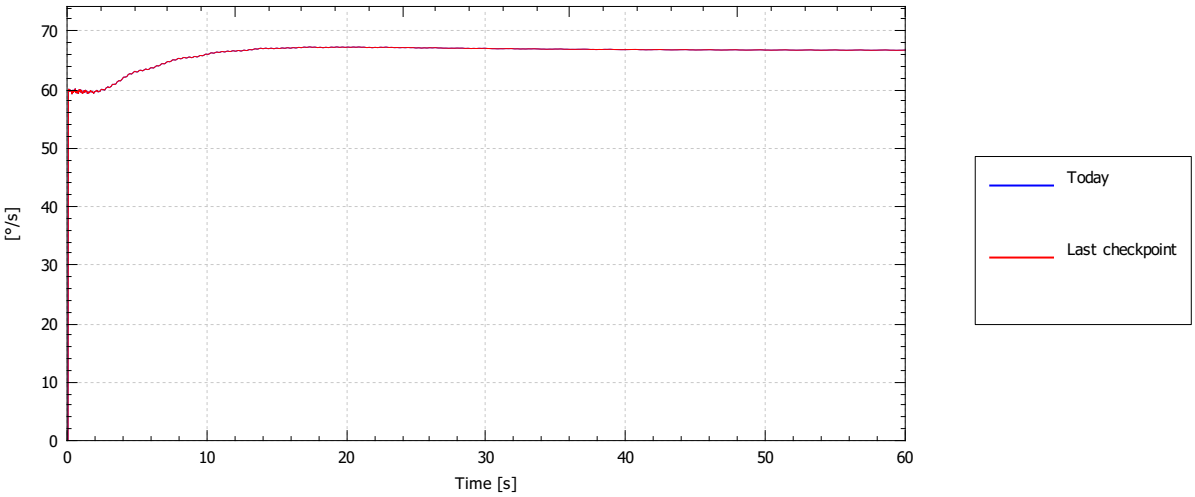

Rotational displacement (rw)



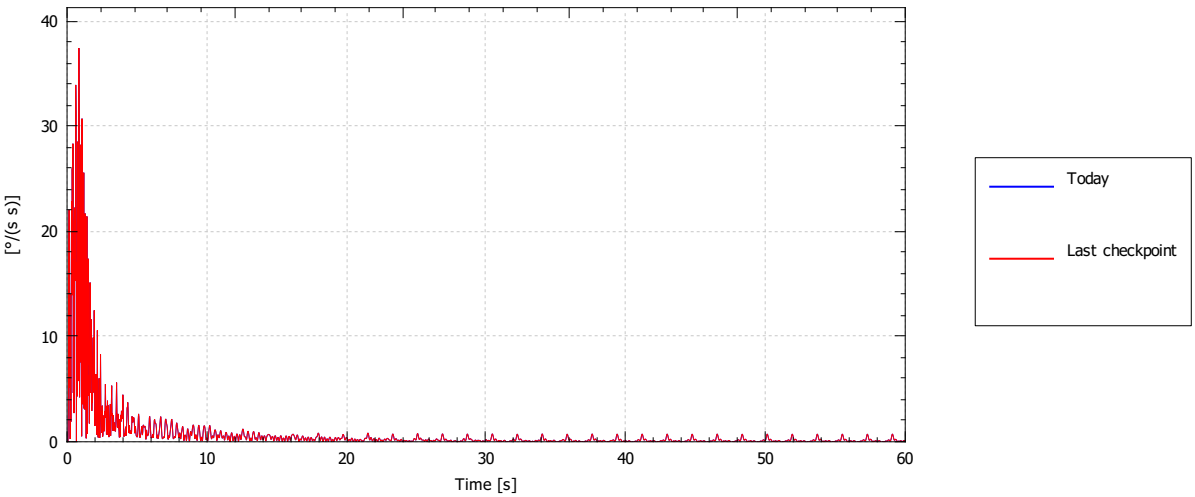
Rotational displacement magnitude



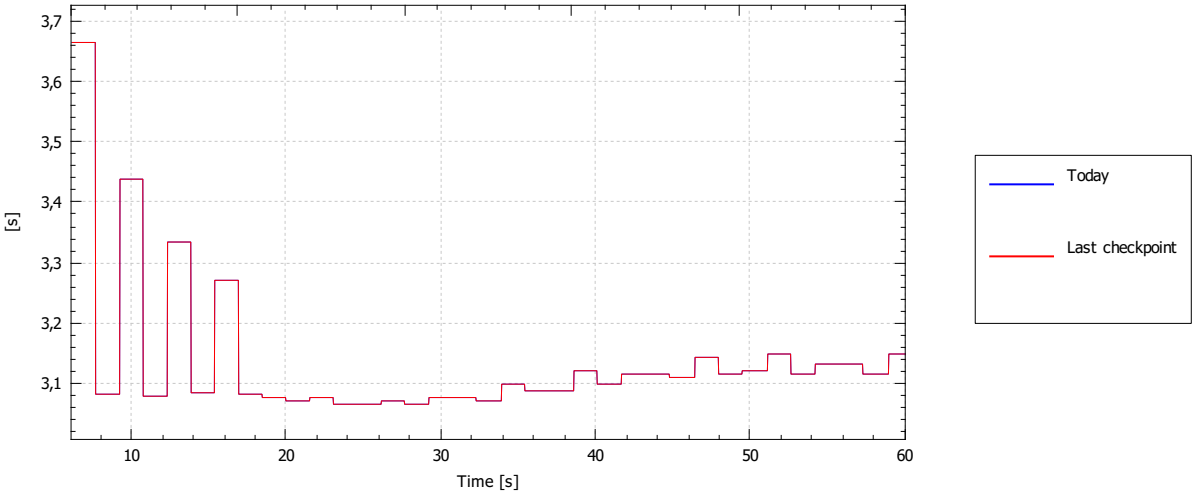

Rotational speed



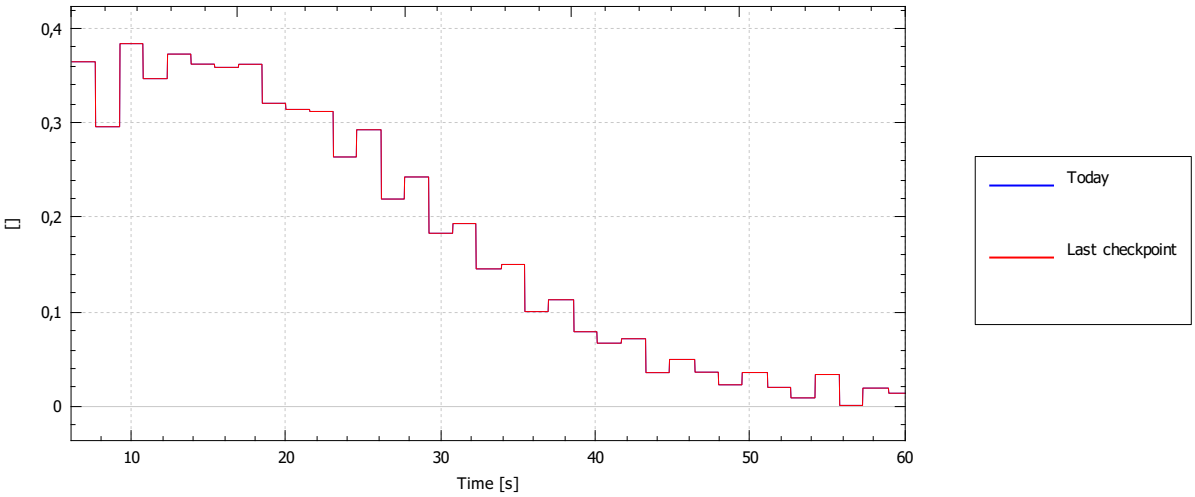

Rotational acceleration mag



## Displacement period




## Displacement logarithmic decrement




## Displacement damping ratio