

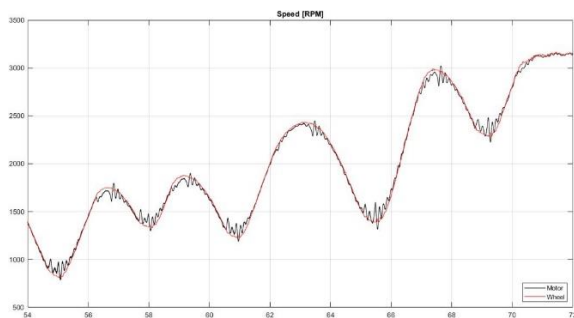
Model-Based Control of Driveline Oscillations in an EV

Background

BorgWarner is an automotive supplier developing clean and efficient technology solutions for hybrid, electric and combustion vehicles.

At the site in Landskrona, driveline and propulsion systems are developed and produced for manufacturers around the world.

The fast torque response achievable with electric machines has enabled active-damping torque control to reduce drive-line speed oscillations (jerk). With this type of control, oscillations in the frequency range that would create discomfort for the driver can be reduced greatly.



Example of driveline oscillations in a vehicle.

BorgWarner is an automotive supplier developing clean and efficient technology solutions for hybrid, electric and combustion vehicles.

Thesis Assignments

- Develop a drive-line model suitable for controller design.
- Compare a mode-based state-feedback controller design with conventional PID control.
- Design a controller to be robust against model uncertainties and system delays.
- Integrate the controller into existing inverter software using TargetLink for real-timtesting and verification in test vehicle.

Results

The master thesis shall be reported as a written report and an oral presentation at BorgWarner in Landskrona.

Contacts

Gabriel Turesson
ETC, PDS Controls
gturesson@borgwarner.com
+46 728898544