Vortragsankündigung

Seminar Regelungssysteme LV 0430L 654

Montag, 29. Oktober 2007, 16.00 Uhr
Vortragsort: EN 220

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Model based control design: application to servo-drives in automated shift transmissions

In industrial practice, controllers are conventionally designed in a heuristic way. Usually, PID-Controllers are used, calibrated by intuition or on a trial-and-error basis. In nonlinear, time varying or parameter varying systems, several operating points are defined and a separate set of parameters is specified for each operating point. This causes an enormous effort for calibration. In the automotive industry, many vehicle tests are necessary. In complex systems, this traditional method does not yield satisfactory controller performance. On this background, the trend at BOSCH is towards model based control design methods.

This talk will start with an overview on the various application areas of control systems in the business units of Robert Bosch GmbH. Subsequently, the talk presents the model based control design process as it is intended at BOSCH. The design process starting with the problem specification and leading to an implementation of the controller in the Electronic Control Unit is explained step by step. Position control of a servo actuator in an automated shift transmission serves as an illustrative example.