

Laboratory 2022/1 (14/11/2022): parametric estimation of a static model for a position transducer using the Set Membership approach

Introduction to part I (24/11/2020 videotape on Teaching Portal: 51:45 - 59:30)

First part (with your PC, 35 minutes):

- System description
- Problem setup for a linear approximation of the sensor characteristic
- Parametric estimation of a linear model (w.r.t. data) using least squares
- Plot of the estimated approximation versus the experimental data
- Computation of the estimate uncertainty intervals EUI in l -infinity norm
- Plot of the EUI versus the estimated approximation

Comments on part I (videotape: 59:30 – 1:05:20)

Introduction to part II (videotape: 1:05:20 – 1:16:40)

Second part (with your PC, 40 minutes):

- Computation of the parameter uncertainty intervals PUI in l -infinity norm
- Computation of the parameter central estimate in l -infinity norm
- Plot of the PUI and the central estimate versus the experimental data
- (Optional) Computation of an approximation of the feasible parameter set FPS
- (Optional) Plot of PUI and FPS approximation versus the estimated parameters

Comments on part II (videotape: 1:16:40 - 01:33:00)