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

Introduction to part I (24/11/2020 videotape on Teaching Portal: 0:00 - 11:30)

First part (with your PC, 30 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

Comments on part I (video, 11:30 - 17:30), introduction to part II (video, 17:30 - 28:00)

Second part (with your PC, 30 minutes):
- Computation of parameter confidence intervals (noise variance derived from priors)
- Plot of these confidence intervals versus the estimated approximation
- Computation of parameter confidence intervals (noise variance estimated from data)
- Plot of these confidence intervals versus the estimated approximation

Comments on part II (video, 28:00 - 37:00), introduction to part III (video, 37:00 - 43:00)

Third part (with your PC, 25 minutes):
- Problem setup for a polynomial approximation of the sensor characteristic
- Parametric estimation of polynomial models (w.r.t. data) using least squares
- Plot of the estimated approximations versus the experimental data

Comments on part III (video, 43:00 - 51:45)