



Open Thesis (SA,BA,MA)

Numerical Simulations for the Proximity Moving Horizon Estimator

<p>Description:</p> <p>Online estimation in which the state of a dynamical system is reconstructed from available measurements is fundamental in many areas such as identification, learning and control. One powerful method for constrained state estimation is moving horizon estimation (MHE), which is an optimization based approach that estimates the state by solving at each time instant a suitable optimization problem. In particular, MHE uses only a fixed number of measurements from the recent past and the considered horizon of data is moved forward as a new measurement becomes available.</p> <p>In this project, we would like to evaluate the performance of the recently developed proximity MHE strategy in numerical examples. There are different directions that can be pursued. This may include implementing the developed estimator in Benchmark examples and comparing it with existing approaches as well as combining it with a suitable model predictive controller and analyzing the performance of the overall estimation-based controller.</p> <p>Prerequisites:</p> <ul style="list-style-type: none">• Courses (ideally) <i>Konzepte der Regelungstechnik</i> and <i>Optimal Control</i>• Experience in Matlab	<p>Supervisor:</p> <p>Meriem Gharbi Room 3.239</p>
	<p>Area:</p> <p>Moving Horizon Estimation Online Optimization</p>
	<p>Properties:</p> <p>Type: SA/BA/MA</p> <p>30% literature 20% theory 50% simulation</p>
	<p>Beginning:</p> <p>any time</p>

Weitere Informationen: www.ist.uni-stuttgart.de/lehre/bama

Aushang vom 17. August 2020