SSY281 - Model Predictive Control
Micro-Assignment MA12 - Explicit MPC

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Question 1 *In explicit MPC the optimization problem underlying the MPC controller is solved as a parametric program. What is the parameter?*

The parameter of the explicit MPC optimization problem is the state vector x.

Question 2 *In explicit MPC, the control law is find in an offline-procedure as function of the current state. How does the control law look like?*

The control law found in an offline-procedure will be piecewise affine, and the value function $V^0(x)$ will be piecewise quadratic.

Question 3 *What does the on-line phase consists of in an explicit MPC controller?*

The online phase consists of the following steps:

- for the measured state x, identify the region to which x belongs
- look up the controller parameters for the found region
- compute the next control signal