Design of Predictive LQ Controller.

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Abstract: A single variable controller is developed in the predictive control framework based upon minimisation of the LQ criterion with infinite output and control horizons. The infinite version of the predictive cost function results in better stability properties of the controller and still enables to incorporate constraints into the control design. The constrained controller consists of two parts: time-invariant nominal LQ controller and time-variant part given by Youla–Kučera parametrisation of all stabilising controllers.

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