

Receding-Horizon Control of Constrained Uncertain Linear Systems with Disturbances.

Luigi Chisci; Paola Falugi; Giovanni Zappa

Abstract: The paper addresses receding-horizon (predictive) control for polytopic discrete-time systems subject to input/state constraints and unknown but bounded disturbances. The objective is to optimize nominal performance while guaranteeing robust stability and constraint satisfaction. The latter goal is achieved by exploiting robust invariant sets under linear and nonlinear control laws. Tradeoffs between maximizing the initial feasibility region and guaranteeing ultimate boundedness in the smallest invariant region are investigated.

Keywords:

AMS Subject Classification: 93C;