

Stabilisation of Continuous-time Hybrid Stochastic Differential Equations by Discrete-time Feedback Control

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Abstract:

This talk deals with the mean-square exponential stabilisation of continuous-time hybrid stochastic differential equations (also known as stochastic differential equations with Markovian switching) by discrete-time feedback controls. Although the stabilisation by continuous-time feedback controls for such equations has been discussed by several authors, there is so far little on the stabilisation by discrete-time feedback controls and our aim here is mainly to close the gap. To make our theory more understandable as well as to avoid complicated notation, we will restrict our underlying hybrid stochastic differential equations to a relatively simple form. However our theory can certainly be developed to cope with much more general equations.