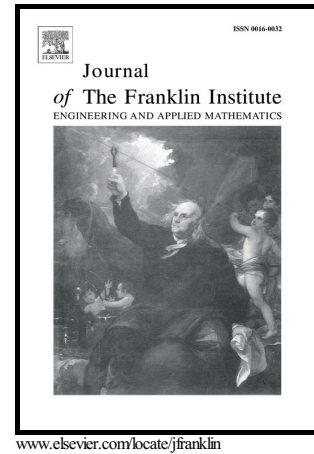


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Decentralized risk-sensitive design for large-scale stochastic interconnected systems with time-varying delays*

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Abstract

In this paper, the problem of risk-sensitivity for a class of large-scale interconnected stochastic nonlinear systems with unbounded time-varying delays is investigated. The design procedure is dedicated to designing a decentralized controller by using only local measurements in each subsystems, and the designed controller can guarantee any desired achievable level of long-term average cost for a given risk-sensitivity parameter μ . Under some suitable conditions, we prove the globally asymptotic stability in probability by applying the design procedure. Finally, two examples are presented to illustrate our results.

Key Words: Risk-sensitive control; unbounded time-varying delay; stochastic nonlinear system; large-scale interconnected system; globally asymptotic stability.

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