H_∞ Control for a Class of Nonlinear Stochastic Time-Delay Systems

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Abstract: This paper mainly deals with H_∞ Controller design for a class of nonlinear stochastic time-delay systems with state and control-dependent noise. Some locally (globally) robust H_∞ Controllable conditions are given in terms of matrix inequalities independent of delay length. As applications, some sufficient conditions for the existence of the static state feedback H_∞ control law are presented for linear and special nonlinear stochastic time-delay systems via linear matrix inequalities, respectively.

Keywords: *Stochastic systems; linear matrix inequality; H_∞ control; time-delay systems.*

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