

عنوان مقاله:

Boundary controller design for stabilization of stochastic nonlinear reaction-diffusion systems with time-varying delays

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خلاصه مقاله:

This paper is focused on studying the stabilization problems of stochastic nonlinear reaction-diffusion systems (SNRDSs) with time-varying delays via boundary control. Firstly, the boundary controller was designed to stabilization for SNRDSs. By utilizing the Lyapunov functional method, Ito's differential formula, Wirtinger's inequality, Gronwall inequality, and LMIs, sufficient conditions are derived to guarantee the finite-time stability (FTS) of proposed systems. Secondly, the basic expressions of the control gain matrices are designed for the boundary controller. Finally, numerical examples are presented to verify the efficiency and superiority of the proposed stabilization criterion.

کلمات کلیدی:

Stochastic nonlinear systems, reaction-diffusion terms, boundary control, Time-varying delays

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