

Synchronization of Coupled Reaction–Diffusion Systems

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In this poster, we present an iterative approach to establish the synchronization of complex systems of coupled partial differential equations. Under our approach, individual subsystems are governed by reaction–diffusion equations, and the coupling configuration is rather general. The coupling terms can be non-diffusive, nonlinear, asymmetric, and with time delays. With an iteration scheme, the problem of synchronization is transformed into solving a corresponding linear system of algebraic equations. Subsequently, the criterion for global synchronization can be established. Several numerical examples are given to illustrate the effectiveness of our synchronization theory.

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