Exact Solutions and Nonlinear Instability of Reaction-Diffusion Coupled Equations with Delay

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A wide class of nonlinear reaction-diffusion systems of equations with delay is considered. We present multiparameter exact solutions involving an arbitrary number of free parameters and give an exact solution that represents a nonlinear superposition of a traveling wave with a periodic standing wave. We determine the domain of values of the parameters where any solution of the system is unstable.

Keywords: *exact solutions, reaction-diffusion systems, delay nonlinear equations, global instability, generalized separation of variables.*

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