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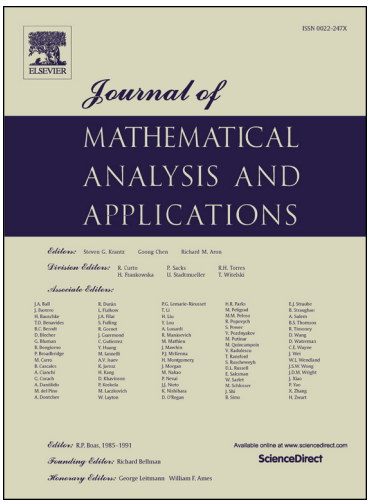

Asymptotic behavior of solutions to chemical reaction–diffusion systems

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Asymptotic behavior of solutions to chemical reaction-diffusion systems

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Abstract

This paper concerns the study of the asymptotic behavior of solutions to reaction-diffusion systems modeling multi-components reversible chemistry with spatial diffusion. By solution, we understand any limit of adequate approximate solutions. It is proved in any space dimension that, as time tends to infinity, the solution converges exponentially to the unique homogeneous stationary solution. We adapt and extend to any number of components, the entropy decay estimates which have been exploited for some particular 3×3 and 4×4 systems.

Keywords: reaction-diffusion equation, chemical reaction, asymptotic behavior, entropy method, renormalized solution

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