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NEW INSIGHTS INTO BLOW-UP AND BOUNDEDNESS IN REACTION-DIFFUSION SYSTEMS WITH DIRICHLET BOUNDARY CONDITIONS

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Abstract. In this paper, we investigate the blow-up and boundedness behavior of solutions to a reaction-diffusion system within a bounded domain, with particular emphasis on Dirichlet boundary conditions. Our analysis employs energy estimates, and comparison principles, using functional analysis techniques to examine the behavior of the solutions. Furthermore, as a practical application, we apply the results of this study to two real-world models.

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