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THE SINC-GALERKIN METHOD FOR SOLVING SINGULARLY-PERTURBED REACTION-DIFFUSION PROBLEM*

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Abstract. One of the new techniques used in solving boundary-value problems involving partial differential equations is the Sinc-Galerkin method. In this paper we solve the singularly-perturbed reaction-diffusion problem using the Sinc-Galerkin method. The scheme is tested on four problems and a comparison with finite element methods and the method of reduction of order is made. It is show that the Sinc-Galerkin method yields better results.

Key words. Sinc function, Sinc-Galerkin, singularly perturbed, reaction-diffusion, numerical solutions.

AMS subject classifications. 65N30,65T60, 35K05, 42C40

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