Linear Enhancements of the Streamline Diffusion Method for Convection-Diffusion Problems*

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Abstract

Several computationally simple modifications of the streamline diffusion finite element method are developed for linear convection-dominated convection-diffusion problems in two dimensions. Numerical experiments show that these modifications yield significantly more accurate results than are attainable from the basic streamline diffusion method.

Keywords: numerical analysis, convection-diffusion, convection-dominated, finite element method, streamline diffusion method

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