

Original Articles

## Modified High-order Upwing Method for Convection Diffusion Equation

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**摘要** In this paper, we study the high-order upwind finite difference method for steady convection-diffusion problems. Based on the conservative convection-diffusion equation, a high-order upwind finite difference scheme on nonuniform rectangular partition for convection-diffusion equation is proposed. The proposed scheme is in conservation form, satisfies maximum value principle and has second-order error estimates in discrete  $H^{-1}$  norm. To illustrate our conclusion, several numerical examples are given.

**关键词** [convection diffusion](#) [high-order upwind method](#)

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**Key words** [convection diffusion](#) [high-order upwind method](#)

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