

This is a review submitted to Mathematical Reviews/MathSciNet.

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Author: Kuznetsov, Yu. A.

Title: Approximations with piece-wise constant fluxes for diffusion equations.

MR Number: MR2887692

Primary classification: 65N30

Secondary classification(s): 35J25; 65N15

Review text:

The author considers a new approach introduced recently to the discretization of diffusion equations on arbitrary polygonal (2D) and polyhedral (3D) meshes. This new approach is based on a special approximation of inner products of vector functions by using piece-wise constant approximations. A mixed and an hybrid formulation for the diffusion problem is considered. An error estimate for the flux in special cases using the stated approach is stated and proved.