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Stabilization of Galerkin approximations of transport equations by subgrid modeling. (English) [Zbl 0946.65112](#)

M2AN, Math. Model. Numer. Anal. 33, No. 6, 1293-1316 (1999).

Author's abstract: This paper presents a stabilization technique for approximating transport equations. The key idea consists in introducing an artificial diffusion based on a two-level decomposition of the approximation space. The technique is proved to have stability and convergence properties that are similar to that of the streamline diffusion method.

Reviewer: [Thomas Sonar \(Braunschweig\)](#)

MSC:

- [65N30](#) Finite element, Rayleigh-Ritz and Galerkin methods for boundary value problems involving PDEs
- [65N12](#) Stability and convergence of numerical methods for boundary value problems involving PDEs
- [35J25](#) Boundary value problems for second-order elliptic equations

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Keywords:

[subgrid modeling](#); [stabilization](#); [transport equations](#); [artificial diffusion](#); [stability](#); [convergence](#); [streamline diffusion method](#)

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