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**Convergence of a staggered Lax-Friedrichs scheme for nonlinear conservation laws on unstructured two-dimensional grids.** (English) [Zbl 1001.65102](#)

Numer. Math. 88, No. 3, 459-484 (2001).

The purpose of this paper is to study convergence of the most simple Nessyahu-Tadmor (NT) scheme, the staggered Lax-Friedrichs scheme, on unstructured two-dimensional grids. A general proof of convergence, as obtained for the original one-dimensional NT-schemes, does not exist for any of the extensions to multidimensional nonlinear problems. The authors present a proof of convergence for the first-order scheme (in case of nonlinear scalar hyperbolic conservation laws) on two-dimensional unstructured grids introduced by *P. Arminjon* and *M. C. Viallon* [C. R. Acad. Sci., Paris, Sér. I 320, No. 1, 85-88 (1995; [Zbl 0831.65091](#)); Proceedings of the 6th Int. Symposium on Comp. Fluid Dynamics, Lake Tahoe 4, 7-14 (1995)].

Reviewer: [Marek Brandner \(Plzeň\)](#)

**MSC:**

- [65M12](#) Stability and convergence of numerical methods for initial value and initial-boundary value problems involving PDEs Cited in 4 Documents
- [65M06](#) Finite difference methods for initial value and initial-boundary value problems involving PDEs
- [35L65](#) Hyperbolic conservation laws

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hyperbolic conservation laws; Lax-Friedrichs scheme; unstructured grids; convergence; Nessyahu-Tadmor scheme

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