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High resolution schemes for hyperbolic conservation laws. (English) Zbl 0565.65050
J. Comput. Phys. 49, 357-393 (1983).

A class of new explicit second order accurate finite difference schemes for the computation of weak solutions of hyperbolic conservation laws is presented. These highly nonlinear schemes are obtained by applying a nonoscillatory first order accurate scheme to an appropriately modified flux function. The so-derived second order accurate schemes achieve high resolution while preserving the robustness of the original nonoscillatory first order accurate scheme. Numerical experiments are presented to demonstrate the performance of these new schemes.

MSC:

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

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Keywords:

[second order](#); [weak solutions](#); [nonlinear schemes](#); [nonoscillatory](#); [flux function](#); [Numerical experiments](#)

Software:

[HLLE](#)

Full Text: [DOI](#)

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