Chacón Rebollo, Tomás; **Domínguez Delgado, Antonio**; **Fernández Nieto, Enrique D.**
An entropy-correction free solver for non-homogeneous shallow water equations. (English)
Zbl 1033.76032
M2AN, Math. Model. Numer. Anal. 37, No. 5, 755-772 (2003).

Summary: We introduce an accurate solver for shallow water equations with source terms. This scheme does not need any kind of entropy correction to avoid instabilities near critical points. The scheme also solves the non-homogeneous case, in such a way that all equilibria are computed at least with second-order accuracy. We perform several tests for relevant flows showing the performance of our scheme.

MSC:

76M12 Finite volume methods applied to problems in fluid mechanics
76B15 Water waves, gravity waves; dispersion and scattering, nonlinear interaction

Keywords:

generalized conservation form; finite volume solvers; source terms

Software:

HLLE

Full Text: DOI Numdam EuDML

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