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Reviewer: Bradji, Abdallah

Reviewer number: 59471

Address:

Boite Postale 398 RP
Annaba 23000
ALGERIA
bradji@karlin.mff.cuni.cz,bradji@cmi.univ-mrs.fr,bradji@latp.univ-mrs.fr

Author: Colella, P.; Dorr, M. R.; Hittinger, J. A. F.; Martin, D. F.

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The aim of this article is to provide a new approach to get higher order finite volume approximations. Among the main ideas of the article is to replace the integrands which appears after integration of the divergence flux on the control volumes by Taylor expansions about the center of faces and then replacing the derivatives by finite-difference approximations of a suitable order that are smooth functions of their inputs. This approach has been used for elliptic and hyperbolic equation when the physical domain is mapped into a cube. Numerical examples are presented to justify the theoretical results.