

Conservative Finite Difference Schemes for Cosymmetric Systems

Bülent Karasözen¹, Vyacheslav G. Tsybulin²

¹ Mathematics Department, Middle East Technical University, Turkey
bulent@math.edu.tr

² Department of Mathematics and Mechanics, Rostov State University, Russia
tsybulin@math.rsu.ru

Abstract. We consider the application of computer algebra for the derivation of the formula for the preservation of the cosymmetry property through discretization of partial differential equations. The finite difference approximations of differential operators for both regular and staggered grids are derived and applied to the planar filtration-convection problem.