



0.1 A New Shallow Water Model for High-resolution Global Models based on Geodesic Grids

R. Mittal , H.C. Upadhyaya and O.P.Sharma

Indian Institute of Technology Delhi, India (rasmittal@gmail.com)

A numerical method based on weak formulation for solving shallow water equations on sphere is given. The scheme utilizes advantages of most isotropic grid structure known for global models i.e. icosahedron-hexagonal grid. The advective form of model equations is solved to predict the time tendencies of prognostic variables (horizontal velocity components and height field). Numerical results for the standard shallow water test cases (Williamson et. al 1991) have been given. The scheme respects the conservation laws and in this respect plots for global invariants: mass, total energy and potential enstrophy are given. Global error norms are obtained with respect to the high resolution spectral model results available for these testcases.