



Advantages of a Laplace transform filtering integration scheme over semi-implicit methods in a global shallow water model

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A filtering numerical time-integration scheme is being developed. Using a modified inversion to the Laplace Transform (LT), the scheme is designed to remove spurious noise while faithfully simulating low frequency atmospheric modes. The method has been compared with traditional semi-implicit schemes in a shallow water framework and shows a number of advantages. In particular we are investigating the behaviour of a semi-Lagrangian formulation of the LT scheme in the presence of orography. We will also discuss its effects on the energy spectra of atmospheric simulations.