Séminaire Mercredi 17 Juin 2009 11H00 / Seminar Wed June 17th, 2009 11H00

Conférencier/Lecturer: Mohamed Zerroukat (UK Met Office)

Sujet/Subject: A mass conserving semi-implicit semi-Lagrangian scheme for the shallow water equations on the sphere

Présentation/Presentation: Anglais / English

Lieu/Room: Grande salle du premier étage CMC, 11:00

Résumé/Abstract:

A semi-implicit semi-Lagrangian inherently mass conserving shallow water model as a prototype of the next generation of the UK Met Office dynamical core is presented.

In this talk, a general stable approach of coupling a mass conserving scheme for the continuity equation to the momentum equations is presented. The approach uses a reference state of the geopotential. In general, the resulting scheme has a weak dependency on the reference profile.

Also in this talk, an alternative approach to reduce the impact of this reference state on the solution is presented. The performance of the scheme is tested on various test problems from the literature.