Séminaire 20 Avril 2011 11h / Seminar April 20th 2011 11h

Conférencier/Lecturer: Janusz Pudykiewicz
Sujet/Subject: Partial differential equations on the sphere
the unifying language for weather and environmental prediction

Présentation/Presentation: Anglais / English

Lieu/Room: Salle des vents (Dorval)

wiki: https://wiki.cmc.ec.gc.ca/wiki/RPN_Seminars

iweb: http://web-mrb.cmc.ec.gc.ca/mrb/rpn/SEM/
web: http://collaboration.cmc.ec.gc.ca/science/rpn/SEM/index.php

Abstract

The prediction of complex Earth systems includes such diversified issues as weather, air quality, ocean circulation, cryopshere, and even space weather. Despite obvious differences in physics of all these problems, they share a common characteristic which is the strong reliance on solving the partial differential equations in spherical geometry. The evident tendency to create the ever increasing in complexity models of the Earth systems will have undoubtedly strong impact on numerical weather prediction in the coming years. Despite that a full description of this impact is not yet possible, I will attempt to indicate some likely future developments in this area based on the recent research performed at RPN. The discussion will be based on the analysis of different systems of the Partial Differential Equations on the sphere relevant to the problems of Numerical Weather Prediction. I will discuss various aspects of the spatial discretization for the deep atmosphere models as well as the issues related to the time integration.