

**Séminaire vendredi le 19 janvier 2018 11:00 / Seminar Friday Jan 19th 2018
11:00h**

Sujet/Subject: A terrain following coordinate system on the ellipsoidal Earth and time stepping schemes

Langue/language : Anglais/English

Conférencier/Lecturer: Janusz Pudykiewicz (RPN-A)

Résumé/Abstract:

The representation of the actual ellipsoidal shape of the planet and the implementation of time stepping schemes are arguably the most challenging problems of next generation of numerical weather prediction models. The effective method to solve them is to combine the absolute differential calculus of Levi-Civita with the exponential integration schemes. This approach has been previously tested with some success in the context of the shallow water system. The extension to a three-dimensional case and some experiments with actual meteorological data will be discussed during the seminar. The talk will also address the problems presented by diffusion terms in the terrain following coordinates through a discussion of the co-moving Lagrangian reference frame.