

Séminaire vendredi le 08 mars 2019 11:00 / Seminar Friday March 8th 2019 11:00h

Sujet/Subject: Numerical Modeling of Convective Systems

Langue/language : Anglais / English

Conférenciers/Lecturers: Janusz Pudykiewicz (RPN-A)

Résumé/Abstract:

The relevant mathematical models applied in the studies of convection are based on three different but not mutually exclusive approaches. The first two are derived from the classical theory of hydrodynamic instability and topological fluid dynamics, whereas the third approach consists in numerical solution of fluid equations with Businessq or anelastic approximations.

The talk will address both theoretical and computational aspects of convection.

The main objective of the seminar is to share experiences from our work performed with the simple models in cylindrical symmetry proposed by Ogura in the early 1960s, as well as more general models based on a class of semi-Lagrangian methods.

The talk will conclude with a summary of our recent attempts to re-examine classical convection problems with unfiltered equations and exponential time-integration techniques.