Séminaire vendredi le 25 mai 2018 11:00 / Seminar Friday May 25th 2018 11:00h

Sujet/Subject:
Introduction to the Stochastic Parametrization of Deep Convection at RPN-A and Verification Method for Limited-Area Ensemble Prediction Systems Based on Scale Decomposition

Langue/language : Anglais/English

Conférenciers/Lecturers: **Leo Separovic (RPN-A)**

Résumé/Abstract

State-of-the-art ensemble prediction systems typically use deterministic physical parameterisations (single or multiple choices) and ad hoc techniques for sampling uncertainties originating from the subgrid-scale processes, truncation in the numerical discretizations and diffusion. This may involve perturbing poorly constrained physics parameters or adding perturbations directly to the physics tendencies. While these ad hoc methods are relatively simple to apply they are rather unsatisfactory from a more fundamental perspective. In the long term, development of inherently stochastic physics appears to be a more appropriate approach to represent model errors originating from the unresolved-scale processes.
In the first part of the presentation we will introduce the ongoing work aimed at developing a stochastic parametrization of deep convection, to be tested in the Regional Ensemble Prediction System (REPS). The parametrization is based on the Plant and Craig theory of fluctuations in equilibrium convective ensembles and it will employ an entraining/detraining plume model borrowed from the Bechtold deep convection scheme.
In the second part of the presentation, we will discuss the development of a new scale-separation verification method for applications in limited-area ensemble prediction systems, such as the REPS. The method allows for studying the impact of various sources of perturbations on the spread-error relationship as a function of spatial and temporal scale and aims at quantifying the value added by the inherently stochastic parametrizations that may be developed in the future.