Séminaire vendredi, 11 décembre 2015 11:00 / Seminar Friday October 11th 2015 11:00h

Sujet/Subject: The Soil, Vegetation, and Snow (SVS) Scheme for Land Surface Parameterization in GEM

Langue/language : Anglais/English

Conférencier/Lecturer: Syed Zahid Husain, Nasim Alavi, Stéphane Bélair, Vincent Fortin, Marco Carrera, Shunli Zhang, Maria Abrahamowicz, and Nathalie Gauthier

Résumé/Abstract:

A new land-surface parameterization scheme, namely the Soil, Vegetation, and Snow (SVS) scheme, has recently been developed at RPN. The plan is to replace the operationally used ISBA (Interactions between Soil, Biosphere, and Atmosphere) scheme with SVS in near future. The new scheme is designed to address a number of weaknesses and limitations of ISBA that have been identified throughout the past years. Unlike ISBA, which calculates a single energy budget for the different land-surface components, SVS introduces a new tiling approach that includes separate energy budgets for bare ground, vegetation, and two different snow packs (over bare ground and low vegetation, and under high vegetation). An improved hydrology scheme that represents vertical soil water transport through the introduction of multiple soil layers is another major feature of SVS. The new scheme also includes an optional photosynthesis module to determine surface stomatal resistance.

Numerical experiments have been carried out during the past few months to evaluate the performance of SVS compared to ISBA for warm season. The relevant results will be presented at the seminar. The presentation will have two parts. The new land surface tiling approach, the multiple energy budgets, and the photosynthesis module will be briefly explained in the first part along with the pertinent screen-

level statistical scores for both SVS and ISBA. The second part of the presentation will be focused on the improved hydrology scheme introduced in SVS and its impact on hydrological prediction. The first part will be presented by Syed Zahid Husain and the second part by Nasim Alavi.