Center of Excellence
ETEMPS
Telesensing of Environment and Model Prediction of Severe events

Seminario DEL GIOVEDI' CETEMPS

"Remote Sensing Applications for Improving Knowledge of Atmospheric Processes"

Dr. Pauline Martinet

Centre National de Recherches Météorologiques (France)

Giovedì 13 Aprile 2017, ore 10:30

Aula Dipartimento, Piano I, Coppito I, Via Vetoio, L'Aquila

ABSTRACT

Better understanding and modeling of boundary layer (BL) processes is essential to improve forecasts of high impact weather events like fog, convection, heavy precipitation or pollution. Ground-based microwave radiometers (MWR) enable the continuous retrievals of temperature and humidity profiles. For the last 3 years, Météo France has been working on the evaluation of a 1D-Var technique combining MWR brightness temperatures and short-term convective scale forecasts to optimally retrieve temperature profiles from MWR. Two experimental campaigns have been used to validate the methodology. This seminar discusses the potential of MWR to improve knowledge of BL processes and to feed operational data assimilation into NWP models.

In addition, an introduction to the aerosol retrievals of the future space lidar mission ADM-Aeolus will be presented. For the first time a UV Doppler lidar will be launched in space in December 2017. The main objective of the mission is to retrieve wind profiles but aerosol properties (extinction, backscatter coefficients) that can be retrieved from the high spectral resolution of the lidar will also be produced as level 2 products of the mission. The main products and evaluation of the aerosol retrievals simulating the lidar signals on some idealized scenes will be presented.

Biography: *Pauline Martinet is scientist at the Centre National de Recherches Météorologiques (CNRM), a French joint research unit (UMR 3589) between the National Center for the Scientific Research (CNRS) and Météo France. Martinet obtained her PhD on the assimilation of cloudy radiances from the infrared sounder IASI in the context of the HyMeX campaign. She is currently working on the retrievals of temperature and humidity profiles from ground-based microwave radiometers (MWR) and the maintenance of aerosol products for the future space lidar mission ADM-Aeolus. She co-chairs the MWR working group of the EU COST Action TOPROF, aiming at the assimilation of MWR into convective scale NWP models.*