EMS Annual Meeting Abstracts
Vol. 8, EMS2011-767-1, 2011
11th EMS / 10th ECAM

Forecasting the weather
- ensemble techniques
in probabilistic weather prediction

Obtaining a parameterization for the Transport Terms of Turbulent Kinetic Energy in Convective Boundary Layer

F. Puhales (1,2), U. Rizza (3), G. Degrazia (1), and O. Acevedo (1)

(1) Lab. de Física da Atmosfera, Universidade Federal de Santa Maria, RS, Brazil (fpuhales@gmail.com), (2) Instituto Federal Farroupilha, Campus Júlio de Castilhos, RS, Brazil, (3) Institute di Scienze dell'Atmosfera e Del Clima, Consiglio Nazionale delle Ricerche, Lecce, Italy

The study of planetary boundary layer (PBL) by the large eddy simulations (LES) is widespread. This computational approach shows some advantages over other techniques because gives a complete description of the vertical extension of the PBL. However, it also has its limit ations through simplifications in the equations solved and numerical approximations.

The underlying technique employed in conception of the LES model it is the use of filter to solve the flow depending on their scales. With this expected to solve these equations for large eddies, where it is believed to be most of the turbulent kinetic energy. We call this scale as resolved. The remainder of the scales, in other words, the smaller scales of the turbulent flow are approximate by a subgrid or subfilter model.

In this work employed the Moeng's LES to apprise the turbulent kinetic energy budget during the daily cycle of CLP. The results obtain ed show the satisfactory description of the terms of the turbulent kinetic energy. Moreover, parameterizations were obtained for the terms of turbulent kinetic energy transport in the convective boundary layer.