Geophysical Research Abstracts
Vol. 16, EGU2014-3904, 2014
EGU General Assembly 2014

Soil processes parameterization in meteorological model.

Andrzej Mazur and Grzegorz Duniec
Institute Of Meteorology and Water Management - National Research Institute, Warsaw, Poland (andrzej.mazur@imgw.pl)

In August 2012 Polish Institute Meteorology and Water Management – National Research Institute (IMWM-NRI) started a collaboration with the Institute of Agrophysics - Polish Academy of Science (IA-PAS) in order to improve soil processes parameterization in COSMO meteorological model of high resolution (horizontal grid size equal to 2,8 km). This cooperation turned into a project named "New approach to parameterization of physical processes in soil in numerical model".
The new set of soil processes parameterizations is being developed considering many physical and microphysical processes in soil. Currently, main effort is focused on description of bare soil evaporation, soil water transport and the runoff from soil layers. The preliminary results from new mathematical formulation of bare soil evaporation implemented in COSMO model will be presented. Moreover, during the Conference authors (realizing a constant need for further improvement) would like to show future plans and topics for further studies. It is planned to combine the mentioned new approach with TILE and MOSAIC parameterizations, previously investigated as a part of TERRA-MultiLevel module of COSMO model, and to use measurements data received from IA-PAS and from Satellite Remote Sensing Center in soil-related COSMO model numerical experiments.