P60 Numerical modeling of convective activity over Central Greece in the framework of the DAPHNE project

Bampzelis, Dimitrios, Ioannis Pytharoulis, Ioannis Tegoulias, Stylianos Kotsopoulos, Stergios Kartsios, and Theodore Karacostas, *Aristotle University of Thessaloniki, Greece*

The region of Thessaly is one of the main areas of agricultural production in central Greece. One serious threat over the area is posed by drought, which has prevailed for several years over the last decades. For this reason the project DAPHNE aims at tackling the problem of agricultural drought in Thessaly by means of weather modification.
In the framework of the project DAPHNE, the non hydrostatic Weather Research and Forecasting model with the Advanced Research dynamic solver (WRF-ARW ver3.5.1) is employed for the operational and the research needs of the program. The model is integrated in three domains covering Europe, Eastern Mediterranean and Central Greece using telescoping nesting with grid spacing of 15km , 5km and 1km, respectively.
This study investigates selected cases of convective activity over the region of Thessaly and their sensitivity using the topographic surface wind correction of YSU planetary boundary layer scheme. The first topographic correction for surface winds represents extra drag from sub-grid topography and enhanced flow at hill tops, while the second is a simpler terrain variance-related correction. Simulations using the two surface drag parameterization schemes and a baseline configuration (topo_wind off) are performed. The results of the high resolution (1km x 1km) WRF numerical weather prediction model are compared with surface observations and radar data.

Acknowledgments: This research work is part of DAPHNE project (11SYN_8_1088_DAPHNE) which is co-funded by the European Union (European Regional Development Fund) and Greek National Funds, through the action "COOPERATION 2011: Partnerships of Production and Research Institutions in Focused Research and Technology Sectors" in the framework of the operational programme "Competitiveness and Enterpreneurship" and Regions in Transition (OPC II, NSRF 2007-2013).