



Assessment of Circulation Types Responsible for Winter Severe Weather Events over South-Eastern Part of Romania, using COST733 Catalogues

Simona Andrei (1,2), Sabina Stefan (1), and Florinela Gergescu (2)

(1) University of Bucharest, Faculty of Physics, Dept. of Atmospheric Physics, Romania (email: sabina.stefan@fizica.unibuc.ro), (2) National Meteorological Administration, National Centre for Weather Forecasting, Bucharest, Romania (simona.andrei.ro@gmail.com, florinela.georgescu@meteoromania.ro)

By its geographic position, the south-eastern part of Romania is exposed to several weather events with major impact on the environment and life. The most severe weather phenomenon, specific to this area is blizzard. The complex local landscape and the proximity of Black Sea generate various synoptic patterns which favor the development of this phenomenon. Usually in south-eastern Romania, blizzard is generated by: (i) a synoptic situation involving a blocking anticyclone and a Mediterranean low, or a single low located over the Black Sea; (ii) the displacement of a Mediterranean low toward southern part of Romania, on specific meteorological conditions in upper tropospheric levels. The aim of this study was to assess the air circulation responsible for blizzard, as severe weather phenomenon. Therefore, we have used catalogues containing a higher number of circulation types, COST733 Catalogues. WLKC733 and GWT18 from COST733 project were selected to analyze the winter's blizzard events. The study has been performed on a hybrid domain, with the territory of Romania at its center. The database that we have used was built up from NCEP/NCAR reanalysis data and from Romanian National Meteorological Administration observational data for 2000-2010 periods. The results show that the simultaneously use of both circulation catalogues has provided better results regarding the correlation of air circulation with severe weather episodes especially with those triggered by the upper troposphere forcing.