Geophysical Research Abstracts, Vol. 9, 05259, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-05259

Study of the Severe Weather Episodes in Romania by using Potential Vorticity

F.Popa(1), S. Stefan (2), D. Banciu (1)

(1) National Administration of Meteorology, Bucharest, Romania, E-mail: florinela.popa@meteo.inmh.ro, doina.banciu@meteo.inmh.ro

The aim of the paper is to explain two severe weather episodes in Romania, using Potential Vorticity (PV) anomalies. In the both situations, the cyclonic activity generated heavy precipitations. All the meteorological conditions and associated phenomena suggested that the forcing from high troposphere enhanced the low troposphere cyclonic activity. In order to explain the re-enforced cyclonic processes in lower troposphere, the PV requires knowledge of the wind field distribution. Consequently, we used both the outputs of the global numerical models and the ALADIN limited area numerical model and the observational data for all the interested fields. We have also used the satellite imagery, due to the important relationships between the satellite images, the tropopause height at mid-latitudes, and the upper level PV anomalies. The results of the study confirm the energetic impact of the higher troposphere and the importance of the PV for these types of severe weather phenomena.