Geophysical Research Abstracts,
Vol. 11, EGU2009-7407-1, 2009
EGU General Assembly 2009

A Study of Two Heavy Precipitation Events in the North-Eastern Romania

C. Oprea, Gh Stancalie, G Tiron, and S Tascu

National Meteorological Administration, meteorology, Bucharest, Romania (carolina.oprea@meteoromania.ro)

Two heavy precipitation events that affected the north-eastern part of Romania are here described in terms of meteorological analysis. Synoptic and mesoscale conditions associated with these events are representative of a class of phenomena that produce important effects on the urban and extra-urban areas from this part of the country as a consequence of floods and flash floods. Analyses of these regional meteorological processes that generate flash floods are one of the objectives of the HYDRATE project. Romanian territory is affected by the presence of the Mediterranean Lows that transport moist and warm air from Mediterranean Sea basin. In certain meteorological conditions the Mediterranean Lows moving to East of Europe, get a retrograde movement on the Black Sea and in this way they contribute to the moisture increasing content of the forming convective systems. The retrograded Mediterranean Lows affect primary the north-eastern part of the Romania. Additionally, different mesoscale forcing mechanisms acts to continuously generate convective cells and focus the deep convection over the same region during several hours incrising in this way the flash flood potential. Heavy precipitation events selected for analyses occurred, first of it, on 18-19 August 2005, and the second on the 23-26 July 2008, and resulted in floods and flash floods conducive to human fatalities and important economic and social damages. ECMWF model analysis was used to investigate dynamical forcing and mesoscale numerical simulation using ALADIN model was performed to investigate the mechanism responsible for the convection development. Data from conventional weather station, radar and satellite imagery were used to assess the magnitude of the rain events and to investigate the role of the different mode of convective system organization to the flash floods generation.