

A cyclone activity trend analysis in Romania

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

(1)University of Bucharest, Faculty of Physics, Dept. of Atmospheric Physics, P.O.BOX MG-11, Bucharest, ROMANIA, (2)National Service of Meteorology, Bucharest, ROMANIA, (sabina_stefan@yahoo.com, fax: +40 21 457 4521)

Assessment of changes in severe weather phenomena such as those associated with cyclone activity is extremely important to Romanian socio-ecosystem, as the last years experience has already demonstrated. The aim of this paper is the study of the trend of cyclone activity in Romania in the last five years (2000-2005), using mainly the occurrence frequency of cyclone deepening events and deepening rates, which were derived from daily mean sea level pressure data. The analyses were carried out for each of the four seasons separately, with December-February (DJF), March-May (MAM), June-August (JJA), and September-November (SON) being defined as winter, spring, summer, and autumn, respectively. The chosen area was: 15°-35° E longitude and 35°-50° N latitude. The results of trend analysis show that, among the four seasons, winter and spring cyclone activity has shown the most significant trends, especially in the southern part of Romania. In the future we will check the veracity of changes in cyclone activity in Romania for a longer period, in order to characterize the relationships between cyclone activity and major circulation regimes that are known to be well associated with weather and climate in Romania. The conclusion of the study would be helpful for cyclone activity forecast and also for understanding the observed changes. Finally, the weather-related risk management could be improved using the results of these first steps made to bring into being a climatology of cyclones activity in Romania.