



Circulation Type Classification and Cyclonic Activity Over Romania

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Assessment of changes in severe weather phenomena such as those associated with cyclonic activity is extremely important to the Romanian socio-ecosystem, as the last years experience has already demonstrated. The aim of this paper is to establish a correlation between the cyclone frequency into a domain considered to be representative for Romania and the circulation types conform to "COST733 Catalogue of Circulation Types". Taking into account the origin of cyclones traveling towards Romania in wide proportion, we have chosen a domain lying within 10° and 35° longitude E and within 35° and 55° latitude N. Thus, cyclonic formations of Mediterranean origin, reaching the considered domain from the south-west can be accounted for, then the cyclones of Icelandic origin taking north-west to south-east tracks towards the domain, sometimes reactivated in Central Europe through cold penetrations in the upper troposphere. A peculiar category is that of cyclones moving along retrograde tracks.. This area is similar to Domain 10 from COST733Catalogue.

Using daily NCEP/NCAR reanalysis data for the sea level pressure, a subjective analysis of cyclone frequency has been performed for the period between 1996-2002 years. All close nuclei were counted with a pressure equal to or lower than 1015 hPa in the sea-level pressure field. The 1015 hPa value was chosen keeping into account the authors' experience in synoptic meteorology. A good correlation between the cyclone presence frequency over Romania and the circulation types, of LWT2 (James, 2007), for Domain 10 was observed. In addition, the weather characteristics associated to cyclone and circulation types, were similar. A few analyzed cases confirmed the good correlation especially for SW and WSW LWT2 circulations.