

Heavy seasonal rainfall for Romania and their associated large scale patterns

C. Boroneant, M. Ionita, F. Popa

National Meteorological Administration, Sos. Bucuresti-Ploiesti 97, 013686 Bucharest
Romania, e-mail: boroneant@meteo.inmh.ro

Heavy rainfall often causes floods with important damages. Specific synoptic-scale atmospheric situations are responsible for such kind of extreme precipitation events, and their frequency depends on the season. Based on daily precipitation and various thresholds depending on season, we use principal component analysis (PCA) and clustering techniques to characterize the synoptic circulation patterns associated to heavy rainfalls during winter, spring and summer for 60 stations in Romania for the period 1961-2005. We analyze the clusters obtained and their monthly frequencies for the fields of sea level pressure and 500 hPa geopotential height associated to heavy precipitation in Romania observed to produce floods.