



SEASONAL ANALYSIS OF COMBINED CLIMATE INDICES IN SERBIA

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Joint distributions of two weather variables, such as temperature and precipitation, better reflect the weather conditions than temperature or precipitation statistics taken separately (Beniston 2010). Hence, the seasonal analysis of combined climate indices in Serbia is presented using Warm/Dry (WD), Warm/Wet (WW), Cold/Dry (CD) and Cold/Wet (CW) days. The present study is based on the collection of the daily mean temperatures and precipitation at seven stations from the observational network of the Serbian Meteorological Service during the period 1961 – 2010. Day is conceived as warm (cold) if the daily mean temperature is greater (less) than the 75th (25th) percentile. Day is considered as dry (wet) if the daily precipitation sums are below the 25th percentile (higher than the 75th percentile). Temperature percentiles were calculated for each day in a year, while precipitation percentiles were calculated for each season.

It is obtained that the number of WW days is small for all seasons. An increasing tendency of WD and decreasing tendencies of CD and CW are observed. Correlation between the combined climatic indices and the North Atlantic Oscillation (NAO) are examined. It was found that the connection existed between the NAO index and CW and WD during the winter, CD during the autumn and WD during the summer. Our results are in accordance with previous results of Beniston (2009), who revealed a systematic change at nine European cities in the course of the 20th century with significant declines in the frequency of occurrence of the “cold” modes and a sharp rise in that of the “warm” modes.

Beniston, M., 2009: Trends in joint quantiles of temperature and precipitation in Europe since 1901 and projected for 2100. *Geophysical Research Letters*, 36, L07707

Beniston, M., 2010: Impacts of climatic change on water and associated economic activities in the Swiss Alps. *Journal of Hydrology*, doi:10.1016/j.jhydrol.2010.06.046