

Trends in indices of temperature extremes in Croatia, 1901-2004

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The temperature variability and changes in different climatic regions of Croatia during the 20th century as well as the changes at the beginning of the 21st century were analysed by means of trends in mean annual temperatures and trends in indices of temperature extremes on the basis of daily series. Five meteorological stations were the representatives of different climates: Osijek as a representative of lowland continental climate, Zagreb for the continental lowland climate with a weak influence of maritime climate, Gospić for the mountainous climate with maritime influence, while two stations were taken as the representatives of the maritime climate of northern (Crikvenica) and southern Eastern Adriatic coast (island Hvar). According to the mean temperature changes during the 20th century the stations at the Adriatic coast showed greater positive temperature trends than those in the continental part. At the coast the greatest contribution to positive trends in annual values give the trends in warm season, while in the continental part the warming is more pronounced in the cold season. The increase in temperatures at the beginning of the 21st century led to the increase in trends also. The trends of temperature indices, defined as the days with minimum and maximum air temperature exceeding the thresholds defined by means of percentiles, were also analyzed. The cold temperature indices showed the negative trends all over Croatia during the 20th century, and they are also more pronounced at the beginning of the 21st century. At the same time, the warm temperature indices showed mainly increasing trends, and were strengthened at the beginning of the 21st century. The warming in the capital of Croatia Zagreb, evident in mean temperatures as well as in indices might be the result of urbanization.