EMS Annual Meeting Abstracts
Vol. 16, EMS2019-443, 2019

Some aspects of changes in number of warmer-than-normal months in climatic conditions of Slovakia

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The climate change caused by human activity is noticeably reflected in the air temperature characteristics. When analyzing the monthly mean air temperature over the period 1951 – 2018, number of warmer-than-normal (above-normal) months is increasing significantly in Slovakia. Individual values of monthly mean temperature data from 16 meteorological stations in the territory of Slovakia were compared with their normal values from the standard period 1961 – 1990. The cumulative counts of the months with above-normal, normal and below-normal temperature in each calendar year and season have proven to be a useful indicator of observed temperature trends. The intervals of above-normal, normal and below-normal monthly mean air temperature were calculated from temperature data sets at individual meteorological stations over the period 1951 – 1990 using standard statistical procedures (time series have undergone the control and homogenization procedures). The results presented in the paper show the significant changes in annual values of temperature characteristics, which vary mainly with respect to the climate temperature regime in individual regions of Slovakia. The results show that the rise in air temperature characteristics began to manifest itself significantly during the 1990s. From the regional point of view, the number of above-normal months began to rise first in the southwest and the west of Slovakia during the first half of the last decade of the 20th century. In the higher altitudes and at the boundary of the western and eastern Slovakia, the changes were mostly manifested during the second half of the last decade of the 20th century. After all, there was an increase in above-normal months in the eastern Slovakia at the end of the 20th century.