Seasonal variability of the air temperature at Mlyňany

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Abstract: Air temperature is one of the most frequent meteorological elements in the study of the climate changes. Regional climate changes can differ from the global changes in certain time periods. Therefore it is sensible to study climate changes in the same time period in various geographical regions, and to investigate their interaction with the global climatic changes.

Mean hourly, monthly and annual values of the air temperature at Mlyňany during the 1962-2002 period were used to study daily and seasonal variability of the air temperature, to estimate its long-term tendency, as well as to find the observed secular trends of the air temperature changes. The course of the air temperature anomalies was smoothed by eleven-year running averages.

The obtained results have shown, that the air temperature trend at Mlyňany has an increasing tendency. The mean annual air temperature increased by about 1.4 °C during the investigated period, i.e., approximately by 0.34 °C per decade. Some inhomogeneity was confirmed by Craddock's test of relative homogeneity until 1968 in this time series.

Key words: air temperature, linear trend, seasonal variability, test homogeneity, Craddock's test, regression analysis, annual and daily course, harmonic analysis, method of least squares

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