



Trends in the frequency of extreme and hazardous weather events in Latvia

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Worldwide a significant increase in the mean temperature near the surface of the Earth has been reported indicating that the climate is changing. However, climate change is not only characterized by changes in the mean values, but also by changes in occurrence of extreme and hazardous weather events. This study investigated the long-term variability of extreme climate event indicators and hazardous weather events such as fog, glaze, rime, thunder and hail in Latvia. To assess the trends in the frequency of extreme climate events, 20 extreme climate indices, such as the number of extremely hot days, the number of frost days or the number of days with heavy precipitation, were calculated and compared with other indices characterizing the mean climate. Trend analysis of long-term changes in the frequency of extreme climate events demonstrated a significant increase in the number of meteorological events associated with an increased summer temperature (for example, the number of summer days and tropical nights) and a decrease in the number of events associated with extreme temperature events in winter (the number of ice days and frost days). There were also increases in the number of days with heavy precipitation and in the intensity of heavy precipitation. Trends in the frequency of hazardous weather events showed a statistically significant trend in the annual number of days with fog, rime and thunder, but the number of days with hail showed a significantly increasing trend in most of the weather stations, that could possibly be an indicator of an increase in the intensity of thunderstorms.