



Long-term changes in the frequency and intensity of thunderstorms in Latvia: analysis based on observations from 14 surface weather stations

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Thunderstorms are the most hazardous meteorological phenomena in Latvia in the summer season, as the impacts caused can be very local and severe. However, so far not much has been known about the climatic characteristics of thunderstorm distribution and intensity in Latvia, and how these have changed under the conditions of recent climate changes. Therefore, the aim of this study is to analyse the spatial and temporal distribution of thunderstorms in Latvia over the period 1960 to 2015 by using surface observation data from 14 major weather stations. In order to assess the severity and possible impacts of thunderstorms in Latvia over the period of interest, the frequency and distribution of thunderstorm intensities according to the national warning and hazard criteria was analysed. The results of this analysis suggest that even though the frequency of thunderstorms in Latvia has been decreasing since the middle of the past century, a significant increase in thunderstorms accompanied by strong wind gusts has been observed. The increasing tendency is observed both for the mean and maximum wind speed and also the frequency of wind gusts of 15-24 m/s during thunderstorm days.