

## **Abstract**

The subject matter of my thesis is the regime of thunderstorm occurrence in Slovakia. In the theoretic part of my work, I deal with thunderstorm categorization, condition of its creation and development and with side-effect phenomena. I also mention continentality of climate, which is linked with disintegration and occurrence of days of thunderstorms and thunderstorms.

In the practical part, I focus on statistic analysis of number of days of thunderstorms and thunderstorms at the Irish meteorological station Valentia, which represents ocean climate and at 5 Slovak meteorological stations with continental climate in the period of 1961 – 2006 or 2007. I study the trend during years, months, seasons and number of thunderstorm phenomena at the stations, while comparing principles of oceanic and continental climate in the context of thunderstorms and days of thunderstorms occurrence.

The main object of my thesis it to define thunderstorm season at each station by method of cumulative series designed by I. Sládek. Conventionally specified seasons do not always match reality. By this method, it is able to determine the natural beginning, end and duration of seasons according to selected climatological parameter.

The thunderstorm season at Slovak meteorological stations usually begins at 3<sup>rd</sup> of May, ends at 31<sup>st</sup> of August and lasts 121 or 122 days, which is equal to 4 months and closely corresponds with summer season. There are approximately 31 days of thunderstorm during the year in Slovakia, but only 4 or 5 days at Irish station.

Results vary due to different geographic position, climatic conditions and mostly due to quality of observation and data record at each station. In general, the influence of the continentality has been confirmed in the meaning of significant higher number of thunderstorms and days of thunderstorms in the continental climate compare to oceanic one. Definition and specification of thunderstorm season is a climatological characteristic, which may help us better understand the main principles and phenomena of climate.