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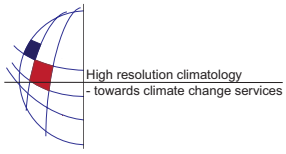

Analysis of thunder and lightning frequency in the Belgrade area in Serbia in the period 1975 - 2009

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The analysis included observations (non-instrumental data) about the thunder and lightning (TL) on Belgrade Meteorological Observatory (latitude 44°48′N, longitude 20°28′E, h=132 m) in the period 1975-2009. The data about the duration (in minutes) by dates were analyzed. The results confirmed already known fact that the TL are most frequent in June. There is a slight increasing trend of TL duration since the mid-eighties. The results of the daily distribution confirmed the basic finding that the TL frequency is higher in the afternoon and the evening hours when two distinctive peak noticed: first of about 17 hours and second about 21 and 22 hours (UTC +1), with the minimum in the morning hours. The annual number of days with TL has the similar distribution in the reporting period as like the annual sum of the duration in minutes. There is a slight increasing trend of days with TL from the mid-eighties. The month with the extreme number of days with TL is June. The most interesting result of analysis is the distribution of the number of days with TL by calendar days. Maximum is in late June and early July, the central date is June 28. In addition to the primary maximum, there are several maximum more in the form of group of several days. Such periods we might call quasi-singularities. In addition to the main period June 27 - July 01, the most important periods and dates (quasi-singularities) are April 24, April 30 - May 2, May 16 - May 22, June 7 - June 17, July 7, July 12-July 14, August 4, August 8 - August 11 and August 28 - September 1. The most notable long period with low frequency of days with TL is second half of July. It is evident that the number of days with TL rapidly increases after April 23 and rapidly reduced after September 2.