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Observations of episodic jumps of NO_2SCD above Stara Zagora (42N, 25E) connected with thunderstorms and lightning processes

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Since August 1999 by using spectral instrumentation of the GASCOD type, regular observations have been carried out of NO_2 and O_3 applying the method of the Differential Optical Absorption Spectrometry (DOAS) at Stara Zagora Division of STIL – BAS. In the time series of NO_2SCD quick changes (jumps) have been observed at hour scale. Almost 30% of the cases of episodic NO_2 SCD jumps in Stara Zagora station are found to be connected with thunderstorm activity directly over the station or the Balkan Peninsula on the measurement day or on the previous one. Typical cases of intensive lightning processes are shown, producing peaks in the NO_2SCD Stara Zagora time series.