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Use of METEOSAT data for the investigation of pre-convective conditions of warm season thunderstorms over the Southeastern Europe.

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The objective of this study is to explore the relationship between the rate of change of brightness temperature values at meteosat channels 5 (water vapor - 6.2 μm) and 9 (infrared - 10.8 μm) with collocated lightning activity. The lightning data were provided by the long-range lightning detection network ZEUS operated by the National Observatory of Athens. The selected cases refer to events associated with important lightning activity during the summer of 2009 and 2010 over the continental areas of Southeastern Europe. The study focuses on the depression of brightness temperature values at both channels, and their temporal evolution at specific time periods before the occurrence of the first lightning flash. Furthermore, the relation of the lightning activity with the temporal evolution of the difference between the brightness temperatures from the aforementioned channels is examined, for the same time periods.