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Nowcasting and forecasting of lightning activity: the Talos project.

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Thunder And Lightning Observing System (TALOS) is a research program funded by the Greek Ministry of Education with the aim to promote excellence in the field of lightning meteorology. The study focuses on exploring the real-time observations provided by the ZEUS lightning detection system, operated by the National Observatory of Athens since 2005, as well as the 10-year long database of the same system. More precisely the main research issues explored are:

- lightning climatology over the Mediterranean focusing on lightning spatial and temporal distribution, on the relation of lightning with topographical features and instability and on the importance of aerosols in lightning initiation and enhancement.
- nowcasting of lightning activity over Greece, with emphasis on the operational aspects of this endeavour. The nowcasting tool is based on the use of lightning data complemented by high-time resolution METEOSAT imagery.
- forecasting of lightning activity over Greece based on the use of WRF numerical weather prediction model.
- assimilation of lightning with the aim to improve the model precipitation forecast skill.

In the frame of this presentation the main findings of each of the aforementioned issues are highlighted.