



Relationship between severe weather and diurnal cycle and seasonality in Catalonia: the generation of warnings for civil protection

Tomeu Rigo

Servei Meteorologic de Catalunya

The present analysis searches to demonstrate the high relationship between severe weather occurrence and the diurnal cycle. Moreover, we have analysed the link of severe weather with the period of the year. We have used the database of warnings of the lightning jump algorithm for the period 2006-2018. Even this is a not direct evidence of severe weather occurrence we have demonstrated previously that between 80 and 90% of warnings are related directly with this type of phenomena. The results show how most of cases of severe weather occur after midday, mainly between 12 and 18 UTC. On respect the seasonally, most of cases have been produced between June and September. Both results are evidences of how the heat influences in the deep convection development. Finally, we have detected the contribution of the Mediterranean Sea in the events occurred mainly in autumn. All these results have been added to the expertise of the forecasters at the time of generating alerts in real-time for the Catalan Civil Protection. The warnings, currently in a pre-operational stage, will have a validity of 2 hours in advance.