



An early severe weather warning system in the Meteorological Service of Catalonia

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Catalonia, located in the northeast of Iberian Peninsula, is frequently affected for severe weather (large hail, severe gusts wind or tornadoes). Consequently, it is important to have a good weather warning system to minimize the consequences to the population. In this way, the Meteorological Service of Catalonia (SMC) is developing an early warning system for severe weather. This new system will complement the existing hazard weather warnings of SMC and will be deployed jointly with Civil Protection in short.

The severe weather warning system is based on the of Lightning Jump methodology (LJ). This nowcasting technique issues an alert when there is a sudden increase of the lightning inside a convective system. This increase has been studied and the results show that it is associated to severe weather phenomenon that occurs between 30 minutes and 2 hours later after being detected the LJ. For this reason, an specific software has been developed. In it the LJ alerts are displayed, as well as a cone of probability where the severe weather would effect in the next 2 hours. This cone is obtained using the storm tracking methodology, an operational nowcasting tool of the SMC.

The SMC did a test of these warnings last year to evaluate them. This year will be carried out a pilot test with Civil Protection with the aim to be operational in the near future.