18–22 September 2017, Pula, Croatia
ECSS2017-100

Evaluation of 3 operational severe convective indexes on historical storms that have hit France.

Marie Boisserie (1), Fabienne Dupont (2), and Karine maynard (3)

(1) Toulouse, France (marie.boisserie@meteo.fr), (2) Toulouse, France (fabienne.dupont@meteo.fr), (3) Toulouse, France (karine.maynard@meteo.fr)

Significant progress has been made in identifying synoptical conditions associated with severe storms and tornado developments over the past decades. Multiple parameter indices such as the Energy Helicity Index (EHI), the Significant Tornado Parameter (STP) and the Supercell Composite Parameter (SCP) have proven to be useful in identifying favorable environmental conditions for supercell and tornado formations. Since 2009, at Météo-France, these indices are calculated in operational mode everyday at 00 UTC, 03 UTC, 06 UTC, 12 UTC et 18UTC to help forecasters anticipate violent convective events up to 2 days ahead.

In this presentation, we will evaluate the indices computed with the global ARPEGE NWP (7 km over France) model and the meso-scale and non-hydrostatic high resolution (1.3 km) AROME model and their behavior during the tornado outbreak event occuring in the southeast of France on November 28th of 2014. Other case studies will be analyzed, such as that of violent storms and flash-flooding hitting south-eastern France and killing 20 people on the 3rd of Octobre 2015.