

# Application of a generic initiation method to deep convection simulations

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## Abstract

This work takes part of the general objective dedicated to the improvement of the Mediterranean storm forecasting. It focuses on the Mediterranean and mountainous region of the South-East part of France. In this contrasting region regarding to the terrain-roughness, -elevation, vegetation, rainfall occurrences are the results of a large variety of processes interacting on a wide range of scales. Due to its resulting hydrological impacts, the meteorological survey of this region has been developed considerably since 1958. In this context, severe storms are studied through mesoscale simulations using MésoNH [Ducrocq et al., 2002].

As a complementary approach to specific case studies [Ducrocq et al., 2002, Cosma et al., 2002, Anquetin et al., 2003], it has been chosen to simulate several weather regimes, initiated through generic meteorological conditions. This method avoids spin-up periods. However, it necessitates the analysis of a large data base of weather conditions to get a reliable generic state of the atmosphere.

In the current work, the studied weather regimes are selected on the mid-level wind flow and rainfall rate diagnostics on the past X years. Corresponding radio-soundings routinely performed by the French meteorological agency (Météo-France) at two nearby stations (Lyon and Nîmes) are analysed through a main component analysis algorithm. Composite radiosoundings are then elaborated and used to initiate MésoNH.

Method and feasibility will be described through a characteristic event featuring a southerly flow impinging the Cevennes mountain range with high rainfall rates.

## References

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