



## **Predictability study of a severe weather event**

**D. Santos-Muñoz(1)**, A. Morata (1), M.L. Martín(2), M.G. Sotillo (3), F. Valero(4), Y.Luna (1)

(1) Instituto Nacional de Meteorología , Spain, ([dsantos@inm.es](mailto:dsantos@inm.es)), (2) Universidad de Valladolid, Spain, (3) Puertos del Estado, Spain, (4) Universidad Complutense de Madrid, Spain.

The Western Mediterranean is particularly characterised by floodings during the late summer and autumn and dry periods lasting up to several years. On autumn 2001, between 8<sup>th</sup> and 12<sup>th</sup> November, a severe flash flood event occurred affecting northern Africa and the Balearic Islands. Rain gauges registered a maximum cumulative precipitation of 400 mm over Algeria and more than 200 mm over the Balearics. The present work is focused on the generation of a short-range ensemble prediction system, based on mesoscale models using different subgrid-scale physics representations of atmospheric processes, in order to provide flow-dependent probabilistic forecasts by means of predictive probability distributions over the Western Mediterranean flash floods of November 2001. On that score, different model physical process parameterization schemes allow to construct several versions of the non-hydrostatic mesoscale MM5 model, starting from the identical model initial conditions, and to produce an ensemble of simulations of the 2001 flash floods.