

# Convergence zones in the central area of Catalonia

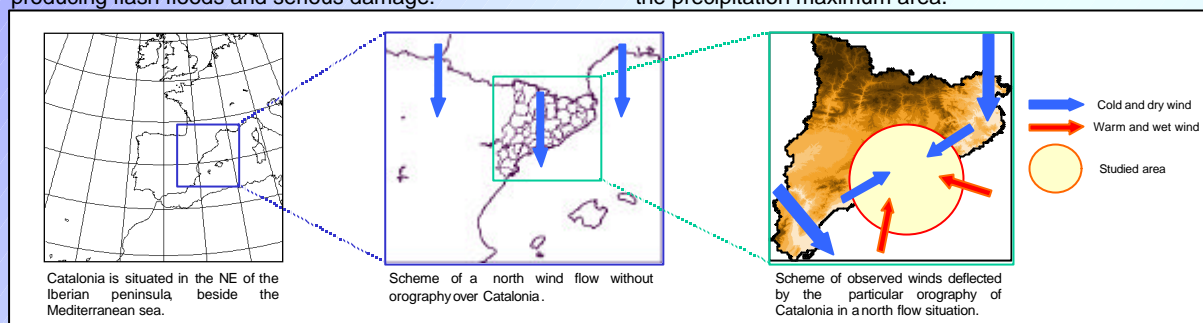
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## INTRODUCTION

Under certain synoptic conditions precipitation areas appear more frequently in a particular zone, sometimes producing flash floods and serious damage.

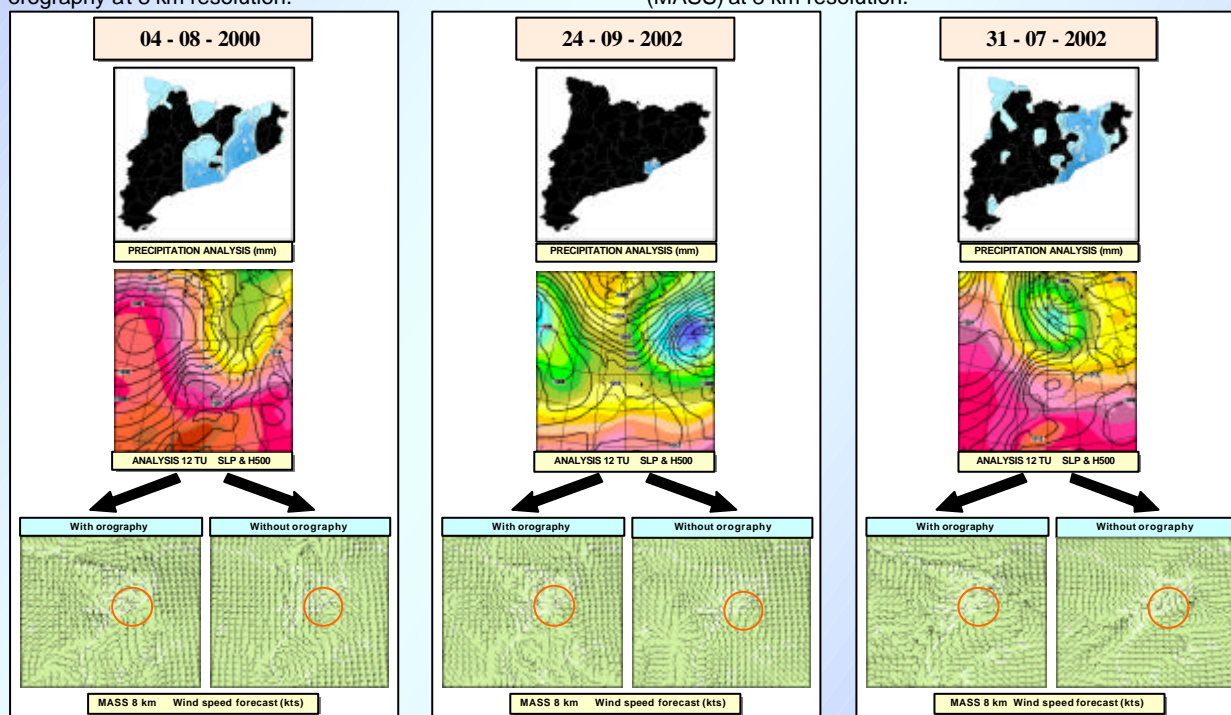
In most of these situations similar wind flows are observed and frequently a low-level convergence zone appears near the precipitation maximum area.



## OBJECTIVES AND METHODOLOGY

The study is focused in the ability of the model to forecast those low-level convergence zones and their sensitivity to the orography at 8 km resolution.

Several events (three of them are shown below), with both low-level convergence and precipitation maximum in this area, are studied using the operational mesoscale model (MASS) at 8 km resolution.



## RESULTS AND DISCUSSION

•Forecasted surface winds at 8 km resolution are usually in good agreement with observations. However, in some cases these low-level convergence zones also appear at 30 and 55 km resolution (not shown).

•Sometimes simulations without orography also show low-level convergence in the studied area. Possibly this is due to another dynamic features.

•Almost all the events with these observed features are originated by a north flow blocked by Pyrenees causing lower pressures in the studied area.

•A good forecast of surface winds does not imply a correct precipitation forecast by the model. However, it helps to determine potential areas with heavy rainfall, if other favorable conditions exist to produce them.



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