Plinius Conference Abstracts,
Vol. 11, Plinius11-20, 2009
11th Plinius Conference on Mediterranean Storms

Sensitivity of precipitation forecasts to cumulus parameterizations of the October 2007 Flash Flood in the Valencia Region (Eastern Spain).

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A torrential rain event took place on 11-12 of October 2007 in the Valencia region. The general framework of the synoptic situation is a general advection of easterly winds across the Western Mediterranean and the presence of an upper level isolated low over the East of the Iberian Peninsula. Precipitations affected the whole Valencia Region but with special impact on coastal areas to the center-south of the region, mainly focused on the first half of the 12th of October. In this rain event, some stations recorded more than 400 mm in 24 hours. The aim of this work is to analyse the effect of using different cumulus parameterizations in the precipitation forecasts of this flash flood event. To do this, a series of numerical simulations using the Regional Atmospheric Modeling System (RAMS) model have been performed. The evaluation of the model results is being made in terms of the amount of precipitation forecasted as well as spatial distribution and occurrence of the rainfall. Besides, it is also analysed the ability of the RAMS model in simulating the most important features of this flash flood event within the framework of this different cumulus parameterizations.