



Study of Mesoscale Convective Systems associated to Heavy Rains in Catalonia using the Meteorological Radar

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Mesoscale Convective Systems (MCS) are usually associated to floods that affect mid-latitudes regions, but also to other phenomena like landslides and windstorms. The general definition of a MCS is a structure that includes a more or less developed convection, which can be linearly organised or not, producing high amounts of rainfall or other severe phenomena. From the meteorological radar point of view there exist many definitions based in the duration and area thresholds. In the present study it has been considered the following one (Rigo and Llasat, 2004): a MCS is a precipitation structure that verifies that its major axis has a length equal or above 100 Km that last 3 hours or more, and a minimum of a 30% of the area covered by it in each image can be associated to convective rainfall, in the mature phase. The analysis presented here is focused on the classification of the different MCSs identified during the period 1996-2000 in Catalonia, considering different stages of their life cycles. With this aim, 43 heavy rainfall events in the region have been analysed in order to identify the type of precipitation structures. Other cases related with strong winds or other severe weather phenomena have not been included in this analysis, in spite of their possible relationship with a MCS. The objective of this work is to improve the general knowledge of those structures in the NE of the Iberian Peninsula, in order to compare them with those other presented in other regions, to determine better the life cycle of the MCSs and another climatic features.