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Changes in frequency of weather types and their relationship with precipitation patterns over South-East of the Iberian Peninsula.

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South-Eastern part of the Iberian Peninsula has experienced a rapid population, agricultural and economic growth during the last decades. This, added to the dry climate (300mm/year) of this area, leads this region to be under an high hydric stress.Therefore any change in precipitation amounts or temporal and spatial distribution could cause important damages.

Although the study area is relative small (150x150km) its complex orography produces a highly spatial variability in precipitation, existing areas of quite different temporal variability and very different precipitation spatial patterns.

In this work an analysis of weather types (WTs) and its relation with regional precipitation patterns is presented. Weather types classification has been obtained by a non hierarchical cluster procedure applied to Sea Level Presusure and Geopotential heigh at 500mb extracted from the ECMWF ERA 40 reanalysis and analysis for the period 1958-2007. The cluster procedure has been applied to seasonal daily series. This permits us to obtain a more realistic WTs classification.

Main results indicate that some WTs related to regional precipitation patterns have experienced important changes in the appearance frequency, specially during spring, leading to a modification of precipitation regimes over our region of interest.