



Spatial overlapping areas of several teleconnection indices on Spain's Mediterranean façade according to autumn rainfall

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We attempted to analyse autumn (September-October-November) rainfall variability with the use of 4 teleconnection indices (MCI, MOI, NAOI and WeMOI) on Spain's Mediterranean façade. The rainfall database consists of monthly, homogeneous and complete series from over 1100 meteorological stations (for the 1951-2000 period), throughout an area covering approximately 1/3 of the Iberian Peninsula (IP). The indices series were provided by several institutions: MCI (ISAC-CNR, Bologna), MOI and NAOI (CRU, Norwich), and WeMOI (Group of Climatology, Barcelona). The teleconnection pattern with the greatest influence on autumn rainfall throughout the study area is the MOI, this being most noteworthy in November. The 4 teleconnection indices negatively correlate with precipitation over the Eastern Iberian façade, except for those positive correlations found between the WeMOI and rainfall in the north-western area. We can clearly distinguish three regions: (1) the northwest under the MCI domain, i.e., the most inland Ebro catchment; (2) the South coast and the inland area under the MOI domain, which is the biggest area; (3) a narrow fringe on the East coast under the WeMOI domain, which is the rainfall area with the most Mediterranean variability pattern. The detection of these precipitation regions enables different subregional climatic ecotones to be defined. An attempt to relate them to the most recurrent precipitation patterns is performed too. Furthermore, monthly analysis enables some spatial shifts of these regions to be recognised. Lastly, it must be highlighted that the NAOI negatively correlates with precipitation in most of the study

area, but is always less correlated than other teleconnection indices.