

Relationship between Precipitation Components and Teleconnection Patterns in the Iberian Peninsula

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The study of precipitation components is of increasing interest due to the differences that involve each of the correspondent consequences. On one hand, the stratiform component, weak and light, causes regular and long-lasting precipitation. On the other hand, the convective one, stronger and intense, is associated with more local precipitation, produced in short periods of time.

In this work, the separated components of precipitation, obtained through the distribution of cumulated rain as its intensity has been analyzed for five sectors with different climate characteristic in Spain. The sectors may initially be of Atlantic or Mediterranean influence, besides having others geographical and orographic dependence. The aim of this study is to determine the influence of different teleconnection patterns over the stratiform and convective precipitation for each sector. The dataset have been a 17 years time series (1998-2014) of hourly rain data from the AEMET network (Spanish Meteorological Agency) consistent of 63 rain gauge stations that cover all the study area. Results show, in autumn-winter season, a clear influence of NAO in the stratiform precipitation for every sector except the closest to the Mediterranean sea. High correlation between EA, SCAND and EA/WR patterns with the stratiform component also it is observed. In the case of convective precipitation only the WeMO index keeps some influence in the near Mediterranean sector.