



## **Links between circulation weather types and teleconnection patterns and their influence on the precipitation regime in Galicia (NW Spain)**

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Interannual variability of rainfall in Galicia, located in the northwestern corner of the Iberian Peninsula, is related to variations in the atmospheric configuration in the north hemisphere. Thus, the storm track in this area depends strongly on the NAO (North Atlantic Oscillation) state. However, with this location, in the middle latitudes, near the region where the NAO influences changes from positive to negative values, although the NAO explains a substantial portion of the low-frequency climate variability, it is necessary to consider other teleconnection indices such as Scandinavian Index (SCA), Eastern Atlantic (EA) or Eastern Atlantic/Western Russia (EA-WR) indices (Taboada and Lorenzo, 2006).

The aim of this work is to continue the study of rainfall variability in Galicia by means of an automated classification scheme of the synoptic weather situations. For this purpose, we have used an automated version of the Lamb weather type classification scheme (Trigo and Da Camara, 2000; Goodess and Jones, 2002). This classification shows that in this area anticyclone weather types are the most frequent in any part of the year. W and SW situations have also a significant frequency of appearance in autumn and winter. The correlation between circulation weather types and teleconnection patterns has shown that NAO index has significant correlations only in winter, while other patterns such as EA has significant correlations in the other seasons. This makes EA a more relevant pattern than NAO to describe Galician climate along the year.

We have also calculated the tendencies for both the atmospheric circulation patterns

and teleconnection indices. Those tendencies shown that in spring, summer and autumn it appears more W and SW situations and less anticyclone ones, related to the tendency to a positive EA in the last decade. This means that those seasons are more humid in the period 1990-2005 than in the period 1960-1977. In winter this tendency is balanced with the tendency of NAO to be in its positive state in the last two decades, meaning a greater appearance of anticyclone situations and lesser appearance of cyclonic ones, diminishing the quantity of rain in this season.

[1] Goodess C.M. and Jones P.D. 2002. Links between circulation and changes in the characteristics of Iberian rainfall. *International journal of Climatology*, 22, 1593-1615.

[2] Lorenzo M.N. and Taboada J.J. 2006. Influences of atmospheric variability on freshwater input in Galician Rias in winter. *Journal of Atmosphere and Ocean Sciences*. 10 to appear.

[3] Trigo R.M. and Da Camara C.C. 2000. Circulation weather types and their influence on the precipitation regime in Portugal. *International journal of Climatology*, 20, 1559-1581.