



North Atlantic Oscillation influence on the streamflows of the Iberian Rivers

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“NORTH ATLANTIC OSCILLATION INFLUENCE ON THE STREAMFLOWS OF THE IBERIAN RIVERS”

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We analyzed the North Atlantic Oscillation (NAO) influence on the monthly river discharges of Iberian rivers from 1945 to 2005. The study covers most of the Iberian river basins, using 187 monthly discharge series. The aim of this study is to determine the role of the variability of the NAO on the Iberian river discharges.

Using the winter NAO we calculated correlations with the monthly river discharge series. We identified the positive and negative phases of the winter NAO for the period 1945-2006, and related to river discharge anomalies. Significant differences in river discharge were found between the positive and negative NAO phases with negative anomalies (dry conditions) during positive NAO periods, and positive anomalies (wet conditions) during negative NAO periods

The results show a consistent and strong control of the river discharges by the winter NAO, but some spatial differences are shown, as three different domains were defined: a region under the direct influence of the NAO (central and western part of the Iberian Peninsula), a transition zone (Ebro Valley) and region free from that influence (Eastern part of the Iberian Peninsula). The spatial differences are also identified in the annual pattern of discharge anomalies. The basin characteristics, the location of the gauging stations and the human management are the possible drivers of these differences.