Geophysical Research Abstracts, Vol. 8, 01114, 2006
SRef-ID: 1607-7962/gra/EGU06-A-01114

Influence of the North Atlantic Oscillation on winter daily climate variables in Spain from 1951 to 2002

F.S. Rodrigo
Department of Applied Physics, University of Almería, Spain (frodrigo@ual.es)

The influence of the North Atlantic Oscillation (NAO) on winter daily climate variables in 15 Spanish localities from 1951 to 2002 is investigated. The selected variables are the following: total amount of rainfall (P), number of rainy days (N), amount of rain per rainy day (I), daily maximum temperature (Tmax), daily minimum temperature (Tmin) and daily temperature range (DTR). The correlation coefficient between the NAO index and these variables is calculated for each station and mapped to explore the spatial distribution of the relationships. In addition to the known relationship between total rainfall and NAO in the Iberian Peninsula, it has detected a negative correlation between NAO and N in the whole country, except the north coast stations. The influence on the intensity rainfall is limited to central and western area of the country. In addition, there is a positive correlation between NAO and Tmax in four central stations, a negative correlation with Tmin in southern stations, and a positive correlation with DTR in the whole country. Physical reasons for these results (predominance of anticyclonic (cyclonic) situations during positive (negative) NAO phase, radiation balance during these events) are discussed.