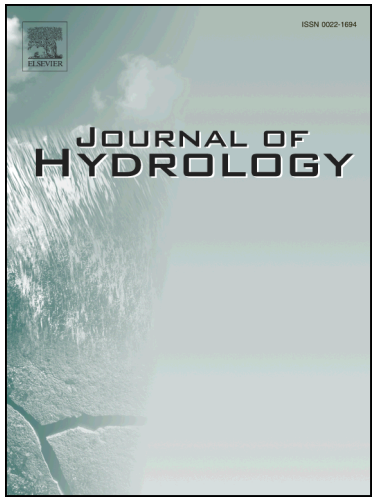

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Control of dry and wet Januaries and winters in the Mediterranean Basin by large-scale atmospheric moisture flux and its convergence

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ABSTRACT

The associations between the seasonal moisture budget (precipitation minus evaporation) and atmospheric and oceanic teleconnections related with dry and wet conditions in the greater Mediterranean Basin are investigated. The driest and wettest Mediterranean winters are selected according to the Standardized Precipitation Index (SPI), and the differences in the moisture budget among them and average conditions (i.e. climatology) are investigated. The analysis focuses on the role of major teleconnection indices for the conditions of the driest/wettest winters. According to the results, the Arctic Oscillation (AO) index is the best indicator of variability in the driest/wettest conditions, which are conventionally associated with the North Atlantic Oscillation (NAO). Large-scale climate variability over the Mediterranean Basin is strongly linked with significant changes of the moisture fluxes in the Gulf of Mexico region and partially in the east coast region of the United States (US), especially for wet years in the