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Analysis of the correlation of the indices of the North Atlantic Oscillation and the Western Mediterranean Oscillation, with peak flows in Spain

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The flow rates in the Spanish peninsula are characterized by large inter-annual variability, especially in the south of Spain. One way to identify this variation with climatic indices, that can have an impact on the study area. Were selected the two climate indices that have greater influence on the Spanish pensinsula. This article discusses the possible influence of the levels of the North Atlantic Oscillation (NAO) which has been shown in various studies presented a domain in climate regimes in the region and Western Mediterranean Oscillation (WeMO) in the caudal maximum instantaneous and maximum daily average in several basins of Spain. To study the information was taken from 67 monitoring stations for flow in natural regime and 34 stations in altered regimen. The results show that there is a strong correlation (-0.3 to -0.6) between peak events that occur in winter (December to March) with the negative phase of NAO index which is significant to the basins of southern and western Spain, while there are correlations significant for the eastern basin (Mediterranean) and the northern basins. In the case of WEMO index showed significant correlations with the Mediterranean basin and north, which were obtained as for the NAO index for winter. There is a strong impact of the NAO index and WEMO in winter peak flows, and it has an impact almost zero for the periods presented in events outside of winter.