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Interannual variability of river discharge into the Mediterranean Sea

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River discharge into the Mediterranean Sea, together with precipitation, contributes to the fresh water input into the basin. Although the annual mean runoff is a small contribution to the Mediterranean water budget, on a sub-basin scale, its seasonal and interannual variability affects the salinity of surface waters and may be responsible of some modulation in the characteristics of deep waters, thermohaline circulation and biochemical processes. In this work we analyze historical time series of observed river discharge into the Mediterranean Sea focusing on their interannual variability in relation to climate anomalies. Our results show that significant anticorrelation is found between the Artic Oscillation index and winter and fall anomalies for rivers located in North-West Africa, Central Italy, Balcans and Greece, resembling the results already obtained with the NAO index. Significant seasonal correlation between river runoff and East Atlantic-Western Russia (EA_WRUS) and Scandinavian patterns has been obtained mainly for rivers located in the Eastern Mediterranean region and for few rivers located in North-Central Europe: we found anticorrelation between the EA-WRUS pattern index and winter river runoff, and positive correlation between the Scandinavian pattern index and fall river runoff.