



Influence of large scale atmospheric circulation on European sea level: results based on the wavelet transform method

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We examine relationships between the variability in long- term time series of European sea level and the large- scale atmospheric circulation represented by the North Atlantic Oscillation (NAO) and Arctic Oscillation (AO) indices using the wavelet transform (WT). Results demonstrate that between 10 and 35% of the variance in winter mean sea level may be explained by the atmospheric circulation influence. However, the relationship between atmospheric circulation and sea level shows remarkable changes over time, especially between the earlier part of the 20th century and the 1990s. Four dominant signals with periods 2.2, 3.5, 5.2 and 7.8 years are detected and analysed by WT using time series of sea level typically 150 years long together with the NAO/AO indices. Crosswavelet power and wavelet coherence confirm the linkages between the two parameters for selective time periods.