



Spin-up of the Nordic Seas ocean circulation by an applied wind stress

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The variability of the large scale atmospheric circulation in the Nordic Seas is dominated by the prevailing westerlies consisting of individual lows that propagate north-eastward and alter the local wind stress curl field during their passage on time scales of days. According to theory, the response of the ocean will be a fast barotropic adjustment process through surface Ekman transports.

Several studies have already related the long-term variations in flow strength with the large-scale wind forcing. By tracking single low pressure systems the response of the ocean to the change in the wind field will be explored by means of observed current data in the Faroe-Shetland channel and in the Svinøy section off the west coast of Norway, as well as modelled current data and sea surface height. Short-term variations in the flow strength will be explored in terms of the local wind field and adjustment processes, and the spin-up time of the ocean will be investigated.