EMS Annual Meeting Abstracts
Vol. 14, EMS2017-33, 2017

Offshore wind field modifications over the Baltic Sea due to land-sea interaction

Nina Svensson, Hans Bergström, Erik Sahlée, and Anna Rutgersson
Uppsala university, Department of Earth Sciences, LUVAL, Uppsala, Sweden (nina.svensson@geo.uu.se)

Offshore wind power is increasing, and there is a need to better understand the atmospheric conditions that can influence wind power above sea surface. Wind farms are built mainly in coastal areas, and may be affected several types of wind field modifications, like sea breezes, low-level jets, acceleration or deceleration of winds due to the shape of the coastline and advection of land features. In this study we investigate at how long offshore distances these effects are prominent, and their yearly and diurnal variations. One year of simulations with the Weather Research and Forecasting (WRF) model, where the synoptic weather is withdrawn, is used to analyse the wind field patterns in the Baltic Sea and to classify the different phenomena of importance.