



Variability of wind parameters at the entrance of the Gulf of Finland

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Long-term, seasonal, and diurnal variations of the wind speed are analysed for a wind data set during 1969-1992 from Pakri (Estonian coast), Naissaar (Estonian island) and Hanko (Finnish coast) located in the western part of the Gulf of Finland, the Baltic Sea. Inter-annual variations of the monthly mean wind speed are mostly ± 1 m/s from the overall monthly averages in January and about ± 0.5 m/s in July. Annual amplitude (November-December minus July) of the monthly mean wind speed is 3.1 m/s at Hanko, 2.6 m/s at Naissaar and 2.1 m/s at Pakri. Daily cycle of average wind speed is described by the ratio of average daily amplitude to the mean wind speed. This ratio is less than 5% in winter, but noticeable in summer, reaching 13% at Hanko and 17% at Naissaar. Daily cycle is well developed at Pakri, reaching 34% in July and 26% in April. This refers to strong influence of mainland on the wind regime on the southern coast of the gulf. Wind speed frequency distributions vary during the year showing the largest seasonal differences for W and NW winds on the southern coast and for the whole range of directions from SE over S to NW on the northern coast of the gulf.