



Examining high frequency stability conditions of the offshore vertical wind profile in the German Bight for verification of PBL parametrizations

A. Sood (1,2) , D. Heinemann (1,2), K. Suselj (1,2), A. Morales (1,3), J. Peinke (1,3)
(1) Forwind, Center for Wind Energy Research, (2) Energy Meterorology Group, (3)
Hydrodynamics Group, Energy and Semiconductor Research, CvO University Oldenburg,
Germany (Contact Email: abha.sood@forwind.de)

The optimization of wind power generation requires high resolution temporal and spatial characteristics of the wind field in the lower planetary boundary layer. The high frequency turbulence in atmospheric mesoscale models is not resolved, but since its influence is crucial for vertical mixing, it is parametrized. The stability conditions are derived from the high frequency measurements at the offshore FINO-1 mast for different heights. The basic parameters of the atmospheric boundary layer such as the mixing length which controls the vertical mixing are verified to examine their influence on the vertical wind profile in the mesoscale model simulations.