in presence of weak local wind conditions, where the roughness of the sea surface is low, and the backscattering mechanisms are weak.

In both platforms, the radar antenna is located about 30 m over the mean sea level. In the geographic area of each platform, additional oceanographic and meteorological instrumentation has been deployed. For wave analysis, a DataWell WaveRider buoy is moored in the vicinity of each platform. The buoys and the WaMoS II systems record wave elevation series and radar images sequences, respectively, being synchronized. From these wave elevation records, the buoys provide standard sea state parameters, such as $H_s$, wave periods, etc., which complement the sea state information derived from the WaMoS II data. Fig. 2 shows the temporal evolution of $H_s$ derived from each buoy at their respective locations (e.g. Ekofisk and FINO 1). These temporal evolutions are taken as reference in the experiments described in this paper.