



## Abstract View

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## Long Period Swell Wave Events on the Norwegian Shelf

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### ABSTRACT

Wave records obtained by Waverider and heave/pitch/roll data buoys on the Norwegian continental shelf have been analysed in order to gain information on spectral characteristics (bandwidth, peak frequency, significant wave height and direction) during severe swell events. The main source of Long period swell is the northwestern Atlantic, and extreme events are caused by intense extratropical cyclones moving rapidly in a northeasterly direction. The data show well energy at periods of 20–25 s and with a maximum significant wave height between 4 and 5 m. By using simple wind and wave models it has been possible to identify different regimes for the evolution of the bandwidth of the well spectrum which also have been confirmed by observations. The model predictions and data analysis lead to a refinement of the classical ridge line analysis in which both the origin time and duration of the storm may be estimated directly from the evolution of the spectrum. In some cases it has also been found that wave refraction and sheltering effects due to Iceland, and the Faeroe Shetland, and Orkney islands may affect the swell conditions on certain sections of the Norwegian continental shelf.

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