



## **Wave-ice interaction, observed and modelled**

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The need for wide-spread, up-to-date sea state predictions and observations in the emerging ice-free Arctic will further increase as the region will open up to marine operations. Wave models for arctic regions have to capture the additional wave physics associated with wave-ice interactions, and different prediction schemes have to be tested against observations. Here we present examples of spatial wave field parameters obtained from TerraSAR-X StripMap swaths in the southern Beaufort Sea taken as part of the “Arctic Sea State and Boundary Layer DRI”. Fetch evolution of the significant wave height and length in open waters, and dominant wave lengths and the high frequency cut-off of the wave spectrum in ice are readily extracted from the SAR (synthetic aperture radar) data. A surprising result is that wave evolution in off-ice wind conditions is more rapidly than the fetch evolution in off-land cases, suggesting seeding of the wave field within the ice-covered region.