



## **Analysis of wind and wave events at the MIZ based on TerraSAR-X satellite images**

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The seasonal opening-up of large expanses of open water in the Beaufort/Chukchi Sea is a phenomenon observed in recent years. The diameter of the open-water area is on the order of 1000 km around the sea ice minimum in summer. Thus, wind events in the area are accompanied by the build-up of sea waves. Significant wave heights of few to several meters may be reached.

Under low to moderate winds, the morphology of the MIZ is governed by oceanic forcing. As a result, the MIZ resembles ocean circulation features such as eddies, meanders, etc.. In the case of strong wind events, however, the wind forcing may gain control.

We analyse effects related to wind and wave events at the MIZ using TerraSAR-X satellite imagery. Methods such as the retrieval of sea state and wind data by empirical algorithms and automatic sea ice classification are applied. This is facilitated by a series of TerraSAR-X images acquired in support of a cruise of the research vessel R/V Sikuliaq in the Beaufort/Chukchi Sea in autumn 2015. For selected images, the results are presented and compared to numerical model forecasts which were as well part of the cruise support.