Sea Surface Height Determination In The Arctic Using Cryosat-2 SAR Data From Primary Peak Empirical Retrackers - DTU Orbit (17/01/2019)

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SAR waveforms from Cryosat-2 are processed using primary peak empirical retrackers to determine the sea surface height in the Arctic. The empirical retrackers investigated are based on the combination of the traditional OCOG (Offset Center of Gravity) and threshold methods with primary peak extraction. The primary peak retrackers involve the application of retracking algorithms on just the primary peak of the waveform instead of the complete reflected waveform. These primary peak empirical retrackers are developed for Cryosat-2 SAR data. This is the first time SAR data in the Arctic are processed using such primary peak retrackers. The sea surface heights determined are compared with the sea surface heights generated by the ESA Retracker as available in the Cryosat-2 Level-2 dataset from 2012. Performance of the primary peak retrackers is also compared with the traditional OCOG, threshold and five parameter beta retrackers. In the case of SAR-lead data, it is concluded that the proposed primary peak retrackers work better as compared with the traditional retrackers (OCOG, threshold, five parameter beta) as well as the ESA Retracker.

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