



## **MOSIDEO/CIRFA Experiments on Behavior and Detection of Oil in Ice**

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Arctic operations in the presence of sea ice present a challenge to sustainable operations. In order to optimize planning and minimize impact of inadvertent oil spills, oil-in-ice experiments were performed at the Hamburgische Schiffbau-Versuchsanstalt (HSVA) in spring 2017 by participants of Norut Narvik, UiT - The Arctic University of Norway, NTNU, Norut - Northern Research Institute, Université de Rennes 1, University of Alaska Fairbanks, and Ocean Visuals. Following an under-ice spill and simulated springtime warming, investigations were performed on the microscopic movement and distribution of oil in the sea ice pore space and the detectability of oil as it approaches the surface. Combining expertise of two research projects, the experiments present a unique opportunity to link the signals of a range of surface detection techniques, including electromagnetic (radar, tomographic SAR) and optical (fluorescent, hyperspectral), to the microscopic distribution of oil in sea ice investigated by X-ray computed tomography (CT). Predicting the behavior of oil in ice based on environmental conditions will help optimize the use of methods for spill detection and response. The experiments and initial results will be presented.