Response of passive microwave sea ice concentration algorithms to thin ice

The influence of sea ice thickness brightness temperatures and ice concentrations retrieved from passive microwave observations is quantified, using horizontally homogeneous sea ice thickness retrievals from ESA's SMOS sensor observations at high incidence angles. Brightness temperatures are influenced by thickness below 18 cm (89GHz) and 50 cm (1.4 GHz). Ice concentration retrievals reduced by ice thickness below 0.17 m and 0.33 m, with higher frequency algorithms being less influenced.

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