

## The next step of the satellite remote sensing of sea ice

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Satellite remote sensing is a powerful tool for monitoring sea ice, which is difficult to observe in the field. Especially, temporal and spatial variability of large-scale sea-ice extent and ice motion have revealed mainly by using data from passive microwave sensors. However, variability of ice thickness and contribution of small-scale ice processes have not yet been understood well. Those are essential for understanding sea ice nature and predicting the future change of ice cover.

Efforts to detect the ice thickness have been carried out using the passive microwave sensors based on the relation between ice thickness and ice surface condition. Additionally laser altimetry measuring the freeboard height of sea ice is also used for the ice thickness observation. On the other hand, there already are high-resolution sensors such as AVNIR-2, which provide the data sufficient to examine the small-scale ice processes. In these observations, a major problem is low frequency of observation. Based on these considerations, we will propose the new monitoring system of sea ice.

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