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Very-High-Resolution Image Acquisition Over Arctic Sea Ice

Using Multiple Remote Sensing Platforms

Chang-Uk Hyun[1], Hyun-cheol Kim[1]
[1] Korea Polar Research Institute, Incheon 21990, Republic of Korea

ABSTRACT

Remote sensing of arctic sea ice provides useful information on the status of sea ice such as concentration, extent, motion and surface composition. Very-high-resolution (VHR) imaging acquiring the images with a spatial resolution from few meters to few centimeters has become available from various remote sensing platforms. In this study VHR image acquisition over arctic sea ice using multiple remote sensing platforms, and image processing protocols for extracting information from the acquired images are demonstrated. The VHR images and products from the images can be applicable to validate sea ice concentration and motion data from coarse resolution remote sensing data, and can be used as an alternative reference data decreasing requirements for in-situ measurements. Furthermore, the VHR images can support safe research activities using icebreaker research vessel by providing the sea ice condition around the vessel.

KEY WORDS: Sea ice, Remote sensing, Very-high-resolution, Satellite image, Arctic ocean