

Iceberg Detection in Dual-Polarized C-Band SAR Imagery by Segmentation and non-Parametric CFAR (SnP-CFAR)

Alexandru Geciuc, Juha Karvonen, Tuomas Niskanen, Anni Montonen, Jørgen Buus-Hinkler

Here we propose an unsupervised method for iceberg detection over ice free waters of Arctic. The algorithm is based on Segmentation and a non-Parametric Constant False Alarm Rate (SnP-CFAR) approach. Unlike in parametric CFAR detection, there is no need to define a target, guard and background areas, instead we apply the detection for pixels within each detected segment. Also, by using non-parametric background PDF estimates, we eliminate the need for assumption of specific type of a background PDF. We show some of our test results and compare them with the operational Gamma-CFAR Danish Meteorological Institute (DMI) algorithm and validate them against manually identified targets by the FMI Ice Analysts.