



A year-round sea ice detection algorithm for QUIKSCAT

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In 2007, the summer extent of Arctic sea ice observed by the passive SSM/I sensor reached its lowest extent on record. Our contribution evaluates the agreement between daily estimates of sea ice extent derived from the active QUIKSCAT and the passive AMSR sensors across the four yearly seasons preceding the 2007 minimum. Although sea ice extent estimates from both sensors agree reasonably well during the winter months, the summer extent observed by the AMSR sensor shows a negative bias relative to that observed by QUIKSCAT, which we attribute to a greater sensitivity of sea ice thermal emissions to surface melt effects.

Given the prominent role that scatterometers may play in the monitoring of melting sea ice, we propose an improved sea ice detection algorithm for QUIKSCAT that is based on probabilistic distances to empirical Ku-Band ocean wind and sea ice model functions, and compare its performance against the current NOAA/BYU (Brigham Young University) sea ice algorithm. The improved algorithm is developed for inclusion in the EUMETSAT/KNMI (Royal Dutch Meteorological Institute) Seawinds Data Processor and products.