

A historic record of sea ice extent and backscatter from scatterometry

Maria Belmonte Rivas, Ines Otosaka, Anton Verhoef, and Ad Stoffelen

Royal Netherlands Meteorology Institute, Satellite Observations, De Bilt, Netherlands (belmonte@knmi.nl)

We present a first version of a consistent long-term record of sea ice extent and backscatter from satellite scatterometry (ERS, Quikscat and ASCAT) dating back from 1991 to present day. The sea ice extents from scatterometers show good agreement with the passive microwave products during the winter months, but present differences during the summer months, scatterometers being more inclusive regarding lower concentration and melting ice. The scatterometer record also monitors the evolution in sea ice backscatter, which is typically used to separate multiyear from first year ice, and reveals interesting changes in the physical characteristics of the most dominant ice types.

This contribution presents the algorithm behind the creation of the scatterometer sea ice record, centered on an empirical model of the sea ice backscattering cross-section as a function of ice type, our first results, and a preliminary taste of the potential of the scatterometer record to articulate new research questions.