

USE OF TIME-SERIES SAR DATA TO RESOLVE ICE TYPE AMBIGUITIES IN NEWLY-OPENED LEADS

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The backscatter signature of sea ice in newly-opened leads frequently overlaps with that of older and thicker ice types. This phenomenon limits the accuracy of ice type classification in single date SAR images. Here, we use ice motion data derived from successive SAR data to identify areas where there are recent openings in the winter sea ice cover. With the assumption that the backscatter of the new lead adds to a nominally invariant backscatter histogram, we can calculate the area of new ice which has been created and record the temporal evolution of backscatter of the new ice. This temporal signature is related to atmospheric conditions during the rapid growth phase of the new ice. We illustrate the use of time series information with ERS-1 SAR data from the Alaska SAR Facility.