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Retrieval of Sea Ice Emissivity and Integrated Retrieval Atmospheric Parameters Over the Arctic from AMSR-E

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Abstract

There is a lack of data on the state of the atmosphere and the surfac because of too few direct observations, which makes remote sensin important in these regions. We present two new methods for retriev atmospheric parameters over the Arctic from radiances measured b Microwave Scanning Radiometer for EOS) on the satellite Aqua. T the emissivities of sea ice at AMSR-E frequencies from AMSR-E r

meteorological reanalysis data. This is valuable since the sea ice emi
not well known. Mean emissivities thus retrieved for two representa
ice and multiyear ice) are needed by the second method which simu
atmospheric and surface parameters from AMSR-E radiances. The
water vapor, cloud liquid water path, surface wind speed, surface t
and ocean, sea ice concentration, and multiyear ice fraction. Both m
results.

Keywords: Microwave radiometry, polar regions, sea ice, emissivi
retrieval