

EARTH OBSERVATION SYMPOSIUM (B1)
Enhancing Earth Observations Through Space Radar (6)

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BENEFITS OF SATELLITE SYNTHETIC APERTURE RADARS FOR EARTH OBSERVATIONS IN
THE NORTH LATITUDES

Abstract

High resolution observations of north latitude, in all weather conditions are extremely important for ship navigation, hydrology, cartography, coastal zone, oil spills detection, sea ice, weather prediction, flood and disaster monitoring. An advanced system for processing RADARSAT and SAR/ERS and ENVISAT/ data has been developed with wide applications in coastal zone, sea ice, flood and disaster monitoring. Sea ice properties (ice concentration, type, thermodynamic characteristics), disasters, flood and tides are retrieved from radar images in all weather conditions. Results of sea ice concentration, flood and tides distribution are presented, obtained from RADARSAT and SAR in the north latitudes. Applications of RADARSAT and SAR in hydrology, coastal zone, oil detection, wind profile and land use are discussed and supported with results. The advantages and benefit of Synthetic Aperture Radars for Earth observations, particular in Polar region in all weather conditions, even darkness, is demonstrated with number of results and comparison the applicability of the latest radar and optical space observation in the north latitudes. The developed methodology for interpretation of radar images and retrieval of surface physical properties can find wide applications in the Global Earth Observation System, involving new radar observation instruments.