

Flood Monitoring Using Active Microwave Remote Sensed Synthetic Aperture Radar Data

Authors : Bikramjit Goswami, Manoranjan Kalita

Abstract : Active microwave remote sensing is useful in remote sensing applications in cloud-covered regions in the world. Because of high spatial resolution, the spatial variations of land cover can be monitored in greater detail using synthetic aperture radar (SAR). Inundation is studied using the SAR images obtained from Sentinel-1A in both VH and VV polarizations in the present experimental study. The temporal variation of the SAR scattering coefficient values for the area gives a good indication of flood and its boundary. The study area is the district of Morigaon in the state of Assam in India. The period of flood monitoring study is the monsoon season of the year 2017, during which high flood occurred in the state of Assam. The variation of microwave scattering value shows a distinctive indication of flood from the non-flooded period. Frequent monitoring of flood in a large area (10 km x 10 km) using passive microwave sensing and pin-pointing the actual flooded portions (5 m x 5 m) within the flooded area using active microwave sensing, can be a highly useful combination, as revealed by the present experimental results.

Keywords : active remote sensing, flood monitoring, microwave remote sensing, synthetic aperture radar

Conference Title : ICRS 2019 : International Conference on Remote Sensing

Conference Location : Tokyo, Japan

Conference Dates : October 07-08, 2019