SCATSAT-1 Observes Surface Flooding conditions in India

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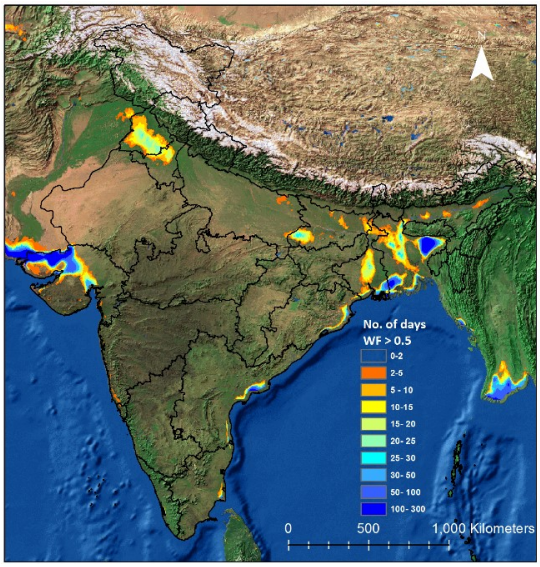
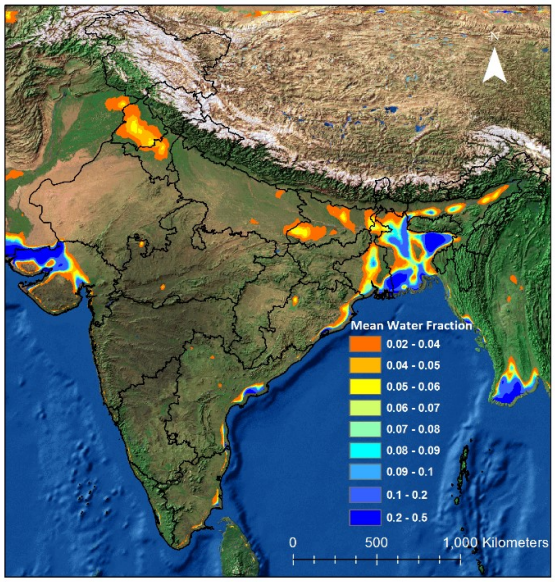
Microwave remote sensing techniques have unique advantage in which electromagnetic radiation in this wavelength region penetrate the clouds and senses the surface hydrological characteristics. SCATSAT-1 Brightness Temperature data was used for the detection and characterization of flood situations over India. Mean Water Fraction and No. of Days of persistence of surface flooding conditions were studies by analysis of more than 300 images during the year 2017.





Brightness observed by the Scatterometer is function of Land surface temperature and Emissivity of the surface. Water has very low emissivity and reduces the brightness temperature. Brightness temperature of the water inundated region ranged from 160-240 K during the year. Water fraction was calculated by linear scaling the brightness Temperature range. The no. of days of water inundation was estimated based on the criterion that pixel has water fraction > 0.5 (i.e. more than half area of the pixel is inundated).