

Surveillance of the Damage Inflicted by the Kumamoto Earthquake Using the Airborne X-band SAR System (Pi-SAR2)

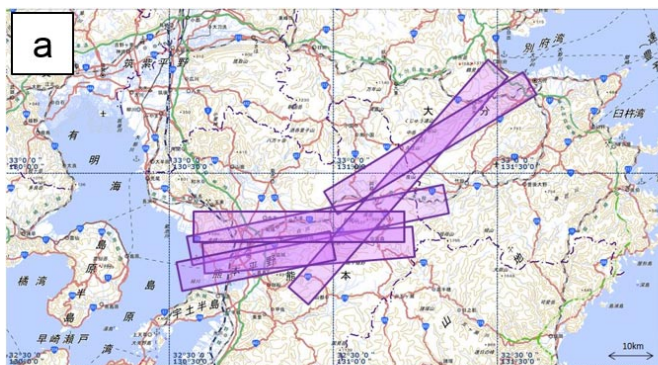
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The second generation airborne synthetic aperture radar system, called as Pi-SAR2, has been developed by NICT (National Institute of Information and Communications Technology) in 2009. The system provides high-resolution, X-band, polarimetric and interferometric data. The spatial resolution is 0.3 m in the azimuth and the slant range directions. Using this equipment, areas of over 7 km wide, flying distances of over 50 km can be observed in a single pass from an altitude of about 9,000 m.

NICT conducted urgent Pi-SAR2 observations to survey the damage inflicted by the Kumamoto earthquake the day after the earthquake of M 7.3 occurred on 16 April. The observation areas (flight-paths) and Pi-SAR2 images of the area around Aso-ohashi-bridge are shown in Figure 1. SAR images were processed in flight using the onboard processor, transmitted to NICT via satellite, distributed to headquarters for disaster control, and uploaded onto the website within 10 minutes after the observation. In this paper, we present methods of the Pi-SAR2 observation and results of analyses. We also discuss how airborne SARs should be utilized in times of disaster.

Keywords: Kumamoto Earthquake, synthetic aperture radar, SAR



- a) Pi-SAR2による熊本地震緊急観測
(2016年4月17日)のフライトパス
- b) 南阿蘇村阿蘇大橋付近の観測画像
像拡大図
- c) 同じ領域の被災前(2015年12月5
日)の観測画像

