

## Pi-SAR2 observation of the disaster areas affected by volcanic eruption and earthquake

\*Jyunpei Uemoto<sup>1</sup>, Akitsugu Nadai<sup>1</sup>, Shoichiro Kojima<sup>1</sup>, Toshihiko Umehara<sup>1</sup>, Tatsuharu Kobayashi<sup>1</sup>, Minoru Kubota<sup>1</sup>, Seiho Uratsuka<sup>1</sup>, Takeshi Matsuoka<sup>1</sup>

1. National Institute of Information and Communications Technology

Japan is an area where earthquakes often occur and volcanic activities are active. The sudden eruption of Mt. Ontake in 2014 and the 2016 Kumamoto earthquake are still fresh in our minds. For the estimation of damage scale and the preparation of restoration activities, it is important to quickly grasp the damage situation in disaster areas. However, the direct access to such areas is often difficult due to traffic situation, risk of secondary disaster, and so on. In this context, one of the effective means is the remote sensing from airplane and/or satellite, which allow us to widely observe disaster areas without direct access. Among the remote sensing instruments, the synthetic aperture radar (SAR) is especially interesting due to its capability for operating in day-and-night and all-weather conditions. NICT has developed the airborne SAR named Pi-SAR2 since 2006. Pi-SAR2 can perform full-polarimetric observations of the ground with the spatial resolution of 0.3 m. At the same time, height measurements and/or moving target detection can be performed owing to the interferometric SAR function of Pi-SAR2. Moreover, the onboard SAR processor enable us to send quick look images from the airplane via the commercial satellite network connection within approximately 10 min after the observation. In this presentation, we introduce the Pi-SAR2 observations performed for volcanos and disaster areas affected by earthquakes and discuss the differences between the satellite and airborne SAR measurements.

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