

## Application of JERS IPTA at Izu-Oshima Volcano and Its Recent Deformation as Viewed from ALOS/PALSAR InSAR

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The Izu-Oshima volcano is a basaltic stratovolcano island on the northern edge of the Philippine Sea Plate, about 100 km south-south-west of Tokyo, Japan. Recent eruptive activity extends back to November 1986. In the early 1990s, it was confirmed through precise crustal deformation measurements by EDM and GPS that the ground surface was exhibiting a tumescence. The swelling has been explained as due to an inflation source [Mogi, 1958], and has been interpreted as representing a refill of the deeper magma chamber with newer magma, indicating the possibility of future eruptions [Watanabe, 1995]. It is important, therefore, to continue precise ground deformation monitoring with high spatial and temporal resolution. Several high precision geodetic monitoring systems are already deployed (e.g., GPS, tiltmeters, and EDM). Besides the forementioned long-term extension, GPS data have revealed short-term temporal fluctuation as well [e.g., Murakami, 2003; Morita, 2004]. Meanwhile, satellite radar interferometry data complement those ground-based measurements in terms of its spatial resolution and coverage. Using Japanese Earth Resource Satellite (JERS) InSAR data, Murakami *et al* [1998] and Okuyama *et al* [2002] detected localized subsiding signals around the summit caldera. Furuya [2005] also detected the same signal using ERS1/2 InSAR data, and interpreted them as due to thermoelastic contraction of formerly intruded magma at shallow depth. It remains uncertain, however, how those subsiding signals were temporally evolving. Are there similar temporal fluctuations to those in GPS data even inside the caldera? To answer this question, I apply Interferometric Point Target Analysis (IPTA) technique developed by Werner *et al* [2003] to Izu-Oshima volcano, using JERS SAR data from 1992 to 1998; IPTA is conceptually similar to the Permanent Scatterer technique by Ferretti *et al* [2000; 2001]. I will discuss results of JERS IPTA applied at Izu-Oshima, and show some preliminary results based on ALOS/PALSAR interferometry.