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Detailed hypocenter distribution of the 2013 swarm activity in Hakone volcano

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Hakone volcano is located at the northern part of the Izu-Mariana volcanic arc in central Japan. Within the caldera of Hakone volcano, fumarolic activity has been observed around the Owakidani area. Many intense earthquake swarms have been reported. Recently, remarkable earthquake swarms were observed in 2001, 2006 and 2008-2009. Accompanying the 2001 activity, crustal deformation was detected by the tiltmeters and GNSS stations net-work (Daita et al., 2009). After the swarm activity in 2001, new fumarolic area emerged at the northern slope of the Owakidani area (Tanada, 2005). Since January 2013, the seismicity in Hakone volcano has been again activated. Synchronizing with the seismic activity, crustal deformation has been detected by the tiltmeters and GNSS stations net-work. To determine highly resolved hypocenter distribution is important to discuss mechanism of swarm earthquakes, and to clarify relationship between the swarm activity and the crustal deformation. We applied the Double-Difference method (Waldhauser and Ellsworth, 2000) to relocate the hypocenters of the swarm earthquakes using the data of the differential arrival time obtained by both manual picking and waveform cross-correlation analysis. We will present detailed characteristics of hypocenter distribution in this currently developing swarm activity.

Keywords: Swarm earthquake, Hakone volcano, Hypocenter distribution