

Precursory Strain and Tilt Variations of Earthquake Swarm Occurring in Izu Peninsula in March 1997 and Occurrence of M5.5 Earthquake.

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Izu Peninsula is located at about 100km southwest of Tokyo. Earthquake swarms occurred in 1995, 1996, 1997 and 1998. We analyzed data observed by multi-component borehole instrument installed at swarm occurring area. The instrument equipped with strain meters, tilt meters, seismometers, magnetometers and a thermometer. Preliminary analyses were already reported. This time we investigated earthquake swarm occurring in 1997. Earthquake swarm started about 10:30 3/3 1997. Some results obtained are as follows:

1. Depth of hypocenters became shallower with about rate of 200m/hour after swarm occurred.
 2. Descending vectors of tilt indicate that after March 2nd vectors show abnormal variations and after the occurrence of swarms variation accelerated and M5.5 earthquake occurred.
 3. Principal strain variation recorded abnormal variations after the swarm occurred and variation accelerated and M5.5 earthquake occurred.
 4. Variations of tilt and strain become clarified from the beginning of occurrence to the end.
- We also discuss relationship between earthquakes and tilt/strain variations.

Keywords: Precursory Phenomena, Earthquake Swarm in Izu Peninsula, Multi-component Borehole Instrument for Crustal Activity Observation, Strain Variation, Tilt Variation