

## Dense GPS observation around the Atotsugawa Fault System (1)

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The Atotsugawa Fault System (Atotsugawa, Mozumi-Sukenobu, and Ushikubi Faults) is a 70 km long group of right-lateral faults, trending in the ENE-WSW direction, and located at the Gifu-Toyama prefectural border. The Atotsugawa Fault System forms a part of the Niigata-Kobe Tectonic Zone, an inland strain concentration zone detected by GPS measurements. It is considered to be a typical seismogenic active fault, and there occurred the 1858 Hietsu Earthquake (M7.0) along the Atotsugawa Fault. The Atotsugawa Fault is also known to be the only active fault where a surface creep is reported.

An integrated observation has been being conducted around the Atotsugawa Fault System in order to investigate the generation and preparation processes of inland earthquake as a part of the New Observation and Research Plan for Earthquake Prediction (2nd term). GPS observation to reveal detailed crustal deformation pattern, and modeling of crustal deformation constitute an important part of this integrated research. We expect to investigate heterogeneity in the fault friction, postseismic deformation of the 1858 Hietsu Earthquake, and healing as well as tectonic loading process at depth.

The GPS observation network is taken over from the Earthquake Frontier Research project and reinforced with 13 additional continuous sites. The upgraded network covers the whole Atotsugawa Fault System, and we can discuss lateral heterogeneity along the fault strike. The new GPS sites are established at the roofs of RC buildings, on the concrete pillar mounted on the ground. The new GPS sites are continuous but off-line, and data are collected twice a year onsite.

We will present the overview of our research plan and the GPS network, initial analysis results, and a future perspective.