



# COMPARISONS BETWEEN DAMAGES AND MOTION PARAMETERS CAUSED BY THE 2008 IWAT-MIYAGI NAIRIKU EARTHQUAKE

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**ABSTRACT:** The 2008 Iwate-Miyagi-Nairiku Earthquake, which hit Iwate, Miyagi and Akita Prefectures in Japan with a JMA magnitude of 7.2 on June 14, 2008, caused various kinds of geotechnical damages in the epicentral area. This paper describes the relations between the permanent displacements of ground and damages of soils mainly including slope failure caused by the earthquake. The permanent displacements of ground were obtained using both the position data of the GEONET system operated with aid of GPS and the displacement records numerically estimated from strong ground motions. It is concluded that the permanent displacement of ground can explain well the geotechnical damages occurred during the earthquake rather than strong motion data such as acceleration amplitude and seismic intensity scale.

**Key Words:** Earthquake, Permanent Displacement, GPS, Strong Motion Records, Slope damage