

The surface deformations based on the ground coordinate data due to the Iwate-Miyagi Nairiku Earthquake

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The coordinate data of control points such as GPS-based control station and the data of the airborne laser scanner survey before and after the Iwate-Miyagi Nairiku Earthquake were compared, and grasp of the surface deformation of the landslide area of the upriver of the Aratozawa Dam was tried. The following five are the data we used, 1. GEONET data, 2. GPS data operated by Tohoku Univ., 3. the coordinate data of datum point of the Aratozawa Dam, 4. the coordinate data of triangulation station, 5. airborne laser scanner data.

And these following points are understood.

1. The northwestern points of the survey area slipped horizontally 1.5 to 2 meters in southeast and rised 1.5 to 2 meters or more. And the southeastern points of the survey area slipped horizontally about 0.5 m from west to northwest. As for the rising, the western side has the tendency of rising, and the eastern side settlement.

2. According to the data of the airborne laser scanner survey, in the northern area of the ENE-WSW element of the earthquake fault in the north of the Aratozawa Dam, which was surveyed by AIST (Toda et al., 2008), the shear of the contour line was found. However, in the southern area it was not found.

3. The boundary of the northwest ground and the southeast ground, whose tectonic tendencies are different, is corresponding to the ENE-WSW element of earthquake fault in the north of the Aratozawa Dam.

4. The deformation at the right side shore of the dam is thought to be the local one in the southeast side ground.