

Mass movements triggered by the 2008 Iwate-Miyagi nairiku earthquake around the Aratosawa Dam.

Takashi Saito[1]; Koji Matsunami[2]

[1] DPRI, Kyoto Univ.; [2] Earthquake Disast., Disast. Prev. Res. Inst., Kyoto Univ

The Iwate-Miyagi nairiku Earthquake in 2008 (JMA: 39.03N, 140.88E; Mj=7.2, 02:43 on 14 June, 2008 UTC) had triggered the huge landslides in Aratosawa Dam upper reach. The initiation of these landslides are closely related to the first strong ground motion with the high frequency of 3 Hz, the geological setting of valley-filled volcanic ash, and the great rise-up of the groundwater after the dam construction. These particular conditions results in the chain of instabilities of mass in the watershed. The initiation of the rapid removal of the valley were the liquefaction and lateral flows of the valleys which resulted in the prompt removals or disappearances of valleys and following instabilities of the slopes that had triggered the huge landslides in the dam watershed. The Aratosawa Dam was constructed and filled up in the year 1998, this earthquake was the first tribble shaking of foot of the slopes with the 20 meters of groundwater rise-up.