

## Lessons from recent inland earthquakes in the Japan Islands

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Large earthquakes occurring inland are highly disastrous compared with their magnitude. In Japan, the 1995 Kobe Earthquake demonstrated how much tremendous damage such earthquakes could cause. Following this disaster, the Japanese government established the Headquarters for Earthquake Research Promotion (HERP) to promote investigation of earthquake research, including extensive investigation of active faults, for the purpose of better understand potential seismic hazard throughout the country. The achievements of HERP is summarized as the “Seismic hazard maps for Japan”, first published in 2005 and has been updated almost every year. In spite of such an effort, however, recent large earthquakes indicate that our knowledge about seismic hazard is still limited and thus our preparation is never complete. On 6 September 2018, a  $M_w$  6.6 earthquake occurred in the Iburi district of Hokkaido, named as the 2018 Eastern Iburi earthquake. The focal depth of this earthquake was 37 km. The largest intensity was JMA intensity VII and the observed largest acceleration was 1505 gal. 41 people were killed mainly due to landslides and liquefaction occurred over a wide area including a part of Tomakomai and Sapporo. Considering the earthquake magnitude and its focal depth, there was no surface rupture and active fault investigation is of no use to identify the potential of this earthquake. It is important to point out that even an earthquake of this size with the focal depth of 37 km can still cause such strong shaking. Evaluation of seismic potential and its possible disastrous consequences should be considered in the light of new seismic observations.

Keywords: seismic hazard, Japan islands, inland earthquakes