

Summary of 2019 JPGU session about strong ground motions anticipated at nuclear power plants in Japan

*Satoshi Kaneshima¹

1. Department of Earth and Planetary Sciences, Kyushu University

In this poster I revisit and summarize the discussions in the session about strong ground motions anticipated to hit Japanese nuclear power plants in the future, which was held at the 2019 JPGU meeting. This session was motivated by the occurrence of a strong crustal earthquake at Iburi, Hokkaido a year ago and generated unexpectedly high ground motions without clear signs of an active fault at the surface. Although it did not cause damages on a nuclear power plant nearby, we anticipated it was timely to discuss about the problem of strong motions expected at nuclear plants in Japan in general. Several geophysical and geological issues associated with this problem were discussed. Starting with a review about current estimates of the thickness of the seismogenic zone that has a potential to generate earthquakes with strong seismic ground motions at surface, the cause of strong ground motions caused by the Hokkaido-Iburi earthquake was discussed. The lack of ability to evaluate complex structures of active faults hidden under ground was elucidated, especially for the case of Kumamoto earthquake in 2016. The presentations given by the experts of each issue and the following discussions elucidated difficulty in making reliable scientific predictions that ensure accurate ground motion evaluations.

Keywords: Nuclear power plants, Strong ground motions, Large earthquake