

Compiling descriptions on tsunami accompanied with the 1914 Sakurajima earthquake and inferred causes

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During the 1914 eruption of Sakurajima volcano, a large earthquake (M7.1) occurred at 18:30, January 12 (e.g., Imamura 1920; Omori 1922; Abe 1981). The hypocenter was estimated by previous studies and most of them are located from west to south of Sakurajima. The surface faults have not been found, and the distribution of aftershock hypocenters has also not been estimated. We thus have no information of the source fault.

Tsunami was observed after this earthquake. In general, most tsunamis are caused by uplift and subsidence of seafloor due to fault motion associated with a large earthquake. Thus this tsunami might provide us with the information of the source fault of the earthquake. Kobayashi (2019, Seismological Society of Japan Fall Meeting 2019) compiled descriptions about this tsunami in several reports and papers and inferred its cause.

In this study, further we have added descriptions of the tsunami in scientific reports and in local chronicles of towns and villages along Kagoshima bay. We have also checked the Kagoshima Newspaper published after the eruption, but we have not found news articles about tsunami. The compilation of reports shows that the areas where the tsunami was observed are only coasts of Kagoshima city and Aira town. According to Hasegawa (1914) and Omori (1918), the tsunami arrived 20 minutes or 1 hour after the earthquake. The areas and times of the tsunami arrivals suggest that the tsunami may not occur due to fault motion associated with the earthquake. The cause might be landslide of the seafloor or the coast. Omori (1918) inferred the subsidence of the seafloor.

This research was partly performed as a part of the Science Club for students of Faculty of Science, Kagoshima University.

Keywords: the 1914 Sakurajima earthquake, tsunami, eruption