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Numerical simulation of tsunami in Suruga Bay by debris avalanche of Mt. Fuji

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After the 2011 Tohoku tsunami, the risk of the tsunami with mega-earthquake along the Nankai trough is examined. After a mega-earthquake occurs, it is said that volcanic activity becomes active near the plate boundary. The tsunami by a debris avalanche can be considered as influence of volcanic activity and mega-earthquake. When considering the disaster measures of the local area, it is necessary to also consider the danger of the tsunami by a debris avalanche.

In this study, the numerical simulation of tsunami is conducted by debris avalanche from Mt. Fuji. The inflow of debris avalanche is set around Port of Tagonoura and Kano River. The inflow length of debris avalanche is set 3.6 and 7.2km along shoreline. The total volume of debris avalanche is set 0.1 and 1.0 km3. The tsunami height in Suruga Bay is calculated based on these settings of debris avalanche. From the results of simulation, tsunami by debris avalanche is spread and goes toward the outside of Suruga Bay. This feature is the effect by Suruga trough with 2,500m depth. And the tsunami height becomes high 3m more over in Yaizu and Omaezaki. A shoal is located in the offing in Yaizu or Omaezaki and it is affected to propagation of tsunami. On the Izu Peninsula west side, it did not become high tsunami. There is no shoal in the bottom topography of Izu Peninsula of the Suruga Bay. It is thought that tsunami near Izu Peninsula was spread out of Suruga Bay.

Keywords: Tsunami simulation, debris avalanche, Suruga Bay, Mt. Fuji