Changes in the seawater quality caused by the suspension of the bottom sediment in Osaka Bay due to the tsunami.

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Huge tsunami will be caused by the Nankai Trough Earthquake, will attack Osaka Bay. Nakada *et al.* (2015) simulated the tsunami caused by the Nankai Trough Earthquake. Osaka Bay was divided into a 50 m grid horizontally in the model with one vertical dimension. And the flow speed and height of the tsunami was calculated for every 0.5 seconds from the earthquake occurrence to 600 minutes. Then the non-dimensional bed shear stress was estimated (Hayashi *et al.*, 2015). It means that the rolling up of the bottom sediment will not occur (negative) or happen (positive). The result shows that the bottom sediments are suspended in the inner part of Osaka Bay. It means that the various materials contained in the sediment are also released to the water column. Nakayama (2011) concluded that the nutrient supply from the sea floor cannot be omitted when evaluating the low trophic level ecosystem and natural environment of the Seto Inland Sea. The densities of cadmium and mercury in the marine sediment of Osaka Bay are higher about 2 times of it in Sendai Bay, and are the high level same as Tokyo Bay (Shimizu *et a*l., 2008). Therefore, the possibility of quality changes in the seawater caused by the suspension of the bottom sediment in the inner part of Osaka Bay due to the tsunami caused by the Nankai Trough Earthquake is shown and discussed. The concentrations of materials in the water column after the suspension by tsunami were standardized by the environmental standard of seawater. The suspend sediments will remain in the eastern part of the Osaka Bay during the tsunami. The standardized concentrations in the water column of Zn, Pb, TP and TN are high in the wide area of the inner part of Osaka Bay. It is necessary to estimate the influence on the primary production considering both the nutrient and SS concentrations because the photoenvironment in the seawater will change according to SS. The correlations of the standardized concentrations in the water column and the concentrations in the sediment are linear.

Keywords: tsunami, bottom sediment, suspention, nutrient, heavy metal, environmental standard