

Sequential data assimilation approach for correction of bottom topography on a tsunami simulation model

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A tsunami simulation model is used to clarify physical things about a tsunami. A sea bottom topography is included in the model as the boundary condition. However, the bottom topography data sets have errors which cause inaccurate simulation results. Therefore, we should modify the bottom topography in the model to obtain more precise results. To correct the topography, we have introduced a data assimilation framework in which a tsunami simulation model and tide gauge records are combined. We will demonstrate the framework and present the result applied to the Okushiri Tsunami, which occurred in the Japan Sea in 1993. The particle filter is used in this estimation. The result indicates that an area in the Japan Sea might be shallower than the average of the topography data sets.