

Fast Algorithm to Determine Initial Tsunami Wave Shape at Source

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Abstract : One of the problems obstructing effective tsunami modelling is the lack of information about initial wave shape at source. The existing methods; geological, sea radars, satellite images, contain an important part of uncertainty. Therefore, direct measurement of tsunami waves obtained at the deep water bottom peruse recorders is also used. In this paper we propose a new method to reconstruct the initial sea surface displacement at tsunami source by the measured signal (marigram) approximation with the help of linear combination of synthetic marigrams from the selected set of unit sources, calculated in advance. This method has demonstrated good precision and very high performance. The mathematical model and results of numerical tests are here described.

Keywords : numerical tests, orthogonal decomposition, Tsunami Initial Sea Surface Displacement

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