Abstract View

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Transient Long-Wave Response for a Multiple-Island System

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ABSTRACT

An interpretation of the tsunami response at the Hawaiian island of Kauai has been carried out utilizing simple geometric representations which include the three-island system of Kauai, Niihau and Oahu. The response has been investigated in terms of constant-depth models with the islands represented as cylinders and with a model which have geometric approximations of the underwater topography. The constant-depth models have indicated the portion of the response at Kauai related to interactions of the scattered and incident waves while the topographic model additionally contains response modes associated with the transient trapping of long-wave energy by the island system. The enhancement of the computed response in the topographic model is studied both in terms of the local Kauai topography alone and for a complete geometric representation of the Kauai, Niihau and Oahu topography.