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Developing of Tsunami Database System Along Thailand Andaman Coastline

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The present study investigates an application of hard and soft-computing techniques for developing a tsunami database system along Thailand Andaman coastline. This technique comprises a combination of neuron network with the genetic algorithm. Three network architectures were investigated, i.e. the Back Propagation (BP), the Time Delay Neuron Network (TDNN), and the General Regression Neuron Network (GRNN). The genetic algorithm was used to define an optimum hidden layer node for the network. The training and testing data were obtained from the far-field tsunami numerical models. It was finally found that the GRNN is the best network for this particular case study. The forecasting tsunami height were also compared with the 4 real tsunami events along the North American coast from the Northwest Pacific ocean tsunami (1958 S. Kuril, 1963 S. Kuril, 1968 N. Honshu, and 1994 S. Kuril) and the 2004 Indian Ocean Tsunami. The prediction accuracy of the GRNN is quite satisfactory. This indicates that the developed tsunami database system can be used for tsunami warning to the risk communities along the coastline