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Randall J LeVeque* (rjl@uw.edu), Seattle, WA 98195. *Algorithms for Probabilistic Tsunami Hazard Assessment*. Preliminary report.

Probabilistic Tsunami Hazard Assessment (PTHA) for a coastal community or harbor can be performed by running a tsunami propagation/inundation code with initial seafloor deformations sampled from some presumed probability distribution of possible earthquakes. Standard approaches use logic trees developed by consensus among seismologists, but an alternative is to generate stochastic realizations based on the expected spatial correlation of slip on a fault plane, e.g. using Karhunen-Loeve expansions. Efficient techniques are then needed to sample this high-dimensional space when each tsunami simulation can take hours of computing time. Some new approaches will be discussed along with an introduction to the finite volume method and adaptive mesh refinement used in the GeoClaw tsunami model. This software, developed by the speaker in collaboration with many others, is being used for tsunami hazard assessment projects in Washington State and beyond. (Received September 18, 2015)