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Branching of Tsunami Waves HENRI-PHILIPPE DEGUELDRE, JAKOB METZGER, RAGNAR FLEISCHMANN, THEO GEISEL, Max Planck Institute for Dynamics and Self-Organization — Branched flow is a universal phenomenon occuring in particle or wave flows propagating through weakly scattering, correlated, random media. Even for very weak disorder in the medium, it can lead to extremely strong fluctuations in the wave intensity. We show how tsunami waves are affected by branching. We model the tsunamis propagating over the ocean floor with its complex height fluctuations by the linearized shallow water wave equations with random bathymetries. We calculate the typical distance from the source at which the strongest wave fluctuations occur as a function of the statistical properties of the bathymetry.

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