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Source Modeling for the 2018 Lombok Earthquake Sequence Estimated from the Empirical Green's Function Method

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In 2018 a series of large damaging earthquakes in Lombok-Indonesia occurred close together, causing many casualties and property damage. Therefore, we conducted source models composed of asperities for the 2018 Lombok Earthquake sequence using strong motion data and estimated by the empirical Green's function method. We simulated the target event with a smaller event in the surrounding area. Then, the source model parameters were determined by comparing the synthesized to observed broadband ground motions. We obtained the best fit of the size and rupture starting point of the strong motion generation area (SMGA) by doing a grid search calculation. We found that the pulse waveforms extend radially toward the bottom right-hand direction due to the forward directivity effect. Furthermore, there is a relationship among the foreshock, the mainshock, and the largest aftershock that may have triggered each other and have similar source characteristics with rupture directions.

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Promotional text

Conducting source modeling using empirical Green's Function can be used to capture the rupture and aftershock direction.

Oral preference format

in-person

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