CHARACTERIZING SOURCE MODEL FOR STRONG MOTION PREDICTION BASED ON ASPERITY MODEL

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An asperity model, which is composed of a high stress drop zone (asperity) and a low stress drop zone (background), was applied to characterizing source model for strong motion prediction. At first, the relationships were studied among the entire fault size, the seismic moment, the short-period level of the source spectrum, the asperity size, and the stress drop on the asperity. Then, the asperity model led to the procedure for setting the asperity size and the stress drop on the asperity of the characterized source model, when the entire fault size, the seismic moment, and the short-period level were estimated from geophysical survey. Finally, an example of characterized source models was presented for a great subduction earthquake.