

# Statistical Analysis of Predicted Ground Motions for Scenario Earthquakes

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<http://www.j-map.bosai.go.jp>

In a precise evaluation of strong-motion using simulation method such as the stochastic Green's function method, we often use characterized source models. Although setting parameters for the characterized source model is standardized by 'Recipe for strong-motion evaluation', we still have some uncertainties on source parameters. It is important to estimate the influence of the uncertainties to the results of strong-motion evaluations. In this study, we have estimated the dispersions of the strong-motions due to scenario earthquakes whose outer source parameters are same but inner source parameters, such as location of asperities and the starting point of rupture, are different. We adopt the stochastic Green's function method for strong-motion evaluation.

We estimate spatial variation of dispersions in PGA, PGV and spectral accelerations. The dispersion in PGA and PGV evaluated by the stochastic Green's function method are compared with that of empirical attenuation relations. As the result of the comparisons, the dispersion of the stochastic Green's function method is smaller than that of empirical attenuation relations. We also confirm that decreasing the uncertainty of source parameters leads to smaller deviation for prediction of ground motions.

It is expected that PGA and PGV calculated probabilistically as seismic hazard analysis can be more accurate by using the prediction method mentioned above instead of conventional manners.