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Basic study on downscaling of a slip distribution by using multifractal

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We are planning to apply multifractal model for downscaling of a slip distribution. First, we tried to confirm whether or not slip distributions are (mono or multi) fractal fields, by using spectral analysis. However, we cannot distinguish multifractal field (measure) and monofractal field (geometry) by the spectral analysis alone. Then we used DTM (double trace moment) method proposed by Lavallee(1991). Data analyzed are 10 models of KyogoKen-Nanbu Earthquake. Results show that slip distributions are multifractal fields and suggest that we can downscale slip distributions by using multifractal simulations.

Keywords: slip distributution, multifractal, scaling, double trace moment, spectral analysis, downscaling