

Geodetic data inversion for interplate slip motion with viscoelastic response functions (2)

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We developed a new method of geodetic data inversion with a viscoelastic slip response function for estimating slip history at plate interfaces. By applying this inversion method to levelling data for 1893-1983 in Shikoku, southwestern Japan, we reconstructed the pattern of spatiotemporal variation in slip motion at the interface between the Eurasian plate and the Philippine Sea plate. In the deep portion ($40 \text{ km} < d$) of the interface steady slip proceeds at a plate convergence rate (4 mm/yr) through the entire earthquake cycle. In the intermediate depth range ($10 \text{ km} < d < 40 \text{ km}$), on the other hand, instantaneous slip of about 4 m on average occurs at the time of the Nankaido earthquake. After that, this portion keeps in stationary contact until the occurrence of the next large earthquake.