

Modified relation between the coupling and tremor rates around the Shikoku region

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In Ochi and Takeda (2018, EPS), I examined the relation between the interplate coupling velocity and the number of deep low-frequency tremors in the same place around the Shikoku region, southwest Japan. I found that there were some spot-like points where the coupling and the tremor count were well correlated, and that the regression line required the coupling rate to be the plate convergence rate in this region under conditions of zero tremor count rate. One of the problems to be resolved is the interpretation of the first matter 'spot-like points' mentioned above. According to the pairs of time series of the coupling rate and tremor count rate, some pairs show a time delay, and the others show a small fluctuation in the tremor count rate that seems to be independent of the coupling rate. It is interesting that whether the an ill-correlation just comes from an oversimple model of the linear regression I used in the previous study, or really reflects some physical background. In order to answer this question, I construct the model which allows the fluctuation in the tremor count rate that is independent from the coupling rate and observe the fitness of the model. At this time, some trial models that allow the shorter period fluctuation in the tremor count rate than in the coupling rate and temporal change in the period achieve clear correlations. In the presentation, I will show the results of the various trials.

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