

Modelling of spontaneous and periodic slow slip in the northern part of the Japan Trench

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In our previous studies, we focused the afterslip of the 2011 Tohoku-Oki earthquake, and conducted numerical simulation of earthquake generation cycles along the Japan Trench. We reflected trench-parallel remarkable difference of fault structure between the central and southern part based on marine survey and observations to spatial distribution of friction parameters of $M \sim 9$ coseismic and postseismic areas. As a result, we could explain longer duration of postseismic slip in the southern part of the Japan Trench. However, we did not modeled slips in the northern part of the Japan Trench, where large coseismic slip of the Tohoku-Oki earthquake did not propagated, and slow-slips and tsunami earthquakes occur. Here, we modeled spontaneous and periodic slow slip in the northern part of the Japan Trench by using the same method. We will discuss roles of these slow slip during interseismic periods of a massive earthquake to understand physical conditions for generating a massive earthquake.