

## Comparison of the rupture processes of the repeating earthquake sequences off-Iwate that occurred after the 2011 Tohoku oki earthquake

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After the 2011 Tohoku Oki earthquake, both temporal and spatial change of repeating earthquake activity was observed in the off-Iwate area where the large after slip observed. We examined the slip distribution of those various sequences of repeating earthquakes to understand what controls their spatiotemporal changes of the rupture process. We estimated the slip distributions using empirical Green's function waveform inversion method and compared those results. The results show that, in the same sequence, although the size of rupture area and slip value varies with the magnitude, the main rupture area is overlapped. However, in case of the new sequence appears nearby, the rupture area is reduced so that two rupture areas can be isolated each other. We also compared the peak and average value of the slip for various sequences. In the past study, it was found that average slip value is proportional to the size of earthquake in the wide range (e.g. Chen et. al., 2016). However, in this study, we found that both peak and average slip value is smaller for earthquakes which occurred early stage of the postseismic periods. As time went on, the relationship between the average slip and magnitude becomes comparable with other study. It indicates that the loading rate is one of the factor to control the average slip value and also size of rupture area.

Keywords: repeating earthquake, earthquake rupture process, earthquake slip distribution