

A discussion of causes of succeeding small and moderate-sized earthquake in a short time -A case study of earthquakes east off the Osumi Peninsula-

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In a part of east off the Osumi Peninsula, earthquakes occur successively in a very short period. In order to reveal the mechanism, we analyzed digital seismogram data recorded from January 2001 to March 2019 by calculating cross-correlation coefficients. We detected three groups comprised of repeating earthquakes in the region. However no temporal periodicity of the earthquake occurrence was observed in each group, the earthquakes to belong to one of three groups were included in almost all cases which earthquakes occurred successively in a short period. By accurate hypocenter determination, it is revealed that earthquakes belonging to any group of the three groups are distributed approximately in one place. It may suggest that sources of repeating earthquakes of the each groups are neighboring in the region and when an earthquake occurs at one source, another earthquake successively occurs at another adjacent source by subjecting to stress change accompanying the earthquake. These results indicate that it is useful for assessing the potential of occurrence of earthquakes in the immediate future to grasp adjacent source of repeating earthquakes and check the similarity with the wave form of the earthquake in real time and the past.

Keywords: occurrence of earthquake successively, repeating earthquake, east off the Osumi Peninsula