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Characteristics of repeating earthquake activirt in Hyuga-nada and east off the northern part of Nansei-shoto, Japan

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Earthquake family composed of more than 4 repeating earthquakes in Hyuga-nada and east off the northern part of Nansei-shoto, Japan is classified into three types by its activity. First is R-type; the event occurs regularly over a long period of time. Second is C-type; the events occur closely in a short period. Third is O-type: the family belongs to not only R-type but C-type. In the middle of Hyuga-nada and east off Tanegashima, almost all earthquake families are O-type. On the other hand, east off Toi-misaki and Tokara islands, the R-type families occur predominantly. The shallow large earthquakes more than M7.0 from 1923 (according to JMA) occurred only in the O-type predominant regions. It may suggest that the existence of asperity of large earthquake controls the type of earthquake family. East off Amami-ooshima is also the O-type predominant region, where earthquakes more than M7.0 did not occur from 1923. However, it is noticeable that the large earthquake of M8.0 occurred in this region in 1911 (a common opinion of depth of this event being 100km).

Keywords: repeating earthquake, earthquake family, asperity, plate boundary, Hyuga-nada, Nansei-shoto