

Mechanical processes of preparation for large scale events

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In order to forecast the occurrence of large events in the Earth's crust, we need to understand their preparation process. Although some precursory phenomena have been proposed as preparation process for large events, most of their mechanical background is not clear. To understand the mechanical processes before large scale events, we examine numerical experiments in which multi-scale events spontaneously occur using discrete element method. The results show that before the occurrence of large events, the deviation of the direction of principal stress axes becomes small in a surrounding area of the large events. This represents a kind of homogenization of the stress field before a large event. After the large event, the stress distribution becomes scattered where only small events can occur.