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Stress evolution associate with seismicity in the Taiwan region during Chi-Chi postseismic period

C Chan and K Ma

Institute of Geophysics, National Central University, Chung-Li, Taiwan
(han@eqkc.earth.ncu.edu.tw / Fax: +886 3-4222044)

Previous studies had shown that the distribution of seismicity after the 1999 Chi-Chi, Taiwan earthquake might be influenced by the Coulomb stress changes of the mainshock. A few of events with thrust mechanisms occurred in the east coast and offshore area, however, could not be explained by coseismic stress triggering. Here we try to explore the occurrence of these large thrust events by further investigation on their possible association to the afterslip and viscoelastic rebound based on rheological model during postseismic period. Along the Hualien-Taitung shoreline, where the occurrence of the postseismic events cannot be explained by coseismic triggering, it shows positive postseismic stress change. In order to clarify the occurrence of larger events associated with coseismic and postseismic triggering, the shear stress changes during coseismic and postseismic period on the focal planes of the $M_W \geq 5.5$ events are calculated. On 7 of the 14 focal planes are promoted to failure imparted by the Chi-Chi mainshock, whereas 12 of them are enhanced during postseismic period. It suggests postseismic stress change is getting important to control the characters of the postseismic events. The rate-and-state dependent fault properties may suggest this phenomenon. In this study, post-seismicity pattern in the Taiwan region associate with stress evolution and rate-and-state friction will be further investigated to try to find appropriate relative parameters. Based on these results, it is possible to establish time-dependent probability of seismic hazard.