

## Study on property of seismogenic activity for Chianan area

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Previous study has suggested Chianan area as the region with higher probability to generate large earthquake in next 30 years. In this study, we collect the P and S arrival data (2008/11~2015/12) determined by the Central Weather Bureau (CWB) and two local seismic networks, which were operated by National Center for Research on Earthquake Engineering (NCREE) and Integration of geodynamic research in Chiayi area (ITCH) projected by National Chung Cheng University, respectively. Through applying the 3D relocation analysis and stress inversion, we attempt to further understand the properties of seismic activity and the implication of the tectonic structures in this area.

Our results show that: (i) The faulting mechanisms do not exactly correspond with the regional tectonic stress and active faults in this area. The primary strike-slip faulting mechanism might be related to the preexisting normal fault. (ii) The lowest friction coefficient was obtained in the southwest region to the Meishan fault with a value of 0.3. This might respond to the complicated fracture system of the Meishan fault. (iii) The seismic activities in Chianan area most range between 5 to 15 km depth, and the various friction coefficients (0.3~0.5) indicate the complex fault structure and heterogeneity in this region. We hope this integrated seismic data and study result can provide some helpful information for potential seismic-hazard assessment in Chianan area.

Keywords: Chianan area, Seismic activity, Stress inversion