



## **Fold-Thrust Patterns in the Vicinity of Deformation Front Area**

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The collision of Philippine Sea plate and Eurasian Plate formed Taiwan orogen and caused development of fold-thrust belt. At this tectonic setting, it attracted researchers to study the tectonic patterns and mechanisms in this area. Thus, there are lots of prior studies in terms of tectonic structure in western and southwestern Taiwan deformation front area; however, few studies can display shallow seated structures in the deformation front area especially when they extend offshore the coastal area.

In Taichung offshore area, a nearshore topographical plateau extending tens of kilometers along the coastline was found, and there are a series of thrust fault formed in the plateau shown in reflection seismic profiles. Roots of these thrust faults developed nearly upon a detached surface layer. Theoretically, along this surface, high pore pressure had been induced in the way such that the overlying strata were unable to accumulate stress for generating greater earthquake. Previous records collected by the Taiwan Central Weather Bureau, therefore indicates there was only one earthquake event with magnitude greater than 4 occurred in this neighborhood.

In this study, several sparker reflection profiles were used, by analyzing focal mechanism of seismic data, the patterns of shallow situated fold-thrust structure are clearly revealed.