

# **Tectonic features in convergent margin basin and distribution of the deformation front offshore southwestern Taiwan**

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## **Abstract**

Using marine reflection seismic profile and bathymetric data to reveals tectonic characteristics and discuss the distribution of the deformation front offshore southwest Taiwan. Offshore southwestern Taiwan is considered by a progressively northward transition from oceanic subduction along Manila Trench to the incipient collision zone, where the continental crust of the Eurasian Plate subducts beneath the Philippine Sea Plate.

Offshore southwestern Taiwan covers the passive Chinese margin and active Taiwan margin. Seismic characteristics of passive Chinese margin is continuous, parallel and divergent reflectors dipping eastward, while on the active Taiwan margin is discontinuous and sub-parallel reflectors by canyon, mud diapir and folds.

The deformation front begins from the northern Manila Trench near  $21^{\circ}\text{N}$  and continues northward along the course of the Penghu Submarine Canyon in a nearly N-S direction north of  $21^{\circ}\text{N}$  until it reaches the upper reaches of Penghu Canyon at about  $22^{\circ}40'\text{N}$ , and then changes direction sharply to the northeast. Folds, mud diapiric intrusion and thrust faults are commonly associated with the deformation front. The deformation front is the surface trace separating the submerged Taiwan orogenic wedge and Chinese passive continental margin, not a surface trace of plate boundary between the Eurasian and Philippine Sea plates.

## **Reference**

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2. Yu, H.S., Huang Z.Y., 2009. Morphotectonics and sedimentation in convergent margin basins: An example from juxtaposed marginal sea basin and foreland basin, Northern South China Sea.