**Tectonic Structures in Northeast Taiwan from Earthquake mechanisms and Seismic Tomography analyses**

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**Abstrast**

The northward subduction system of Philippine Sea Plate (PSP) beneath the Eurasia Plate (EP) offshore northeast Taiwan is orthogonal with the eastward subduction system where the EP subducts beneath the PSP in southeast Taiwan. Since most structures in the area north of$ 23°N $are in the marine domain and general field investigations are not allowed to realize the tectonic structures. Here, we intend to understand the tectonic characteristics in the northeast Taiwan by performing a detailed analysis of local seismicity and the source parameter of 62 earthquakes with $5.5\leq m\_{b}\leq 6.6$. Besides, more comprehensive velocity images of our research area are shown in the light of a new 3D local seismic tomography. On the basis of the distribution of hypocenters and characteristics of fault plane solutions, five major seismogenic structures are delineated: the Collision Seismic Zone (CSZ), the Interface Seismic Zone (ISZ), the Wadati-Benioff Seismic Zone (WBSZ), the Lateral Compressional Seismic Zone (LCSZ), and the Okinawa Seismic Zone (OSZ). In addition, based on the new seismic tomographic result, the Mohos of the converging plates as well as the subduction interface are mapped with good resolution. To summary, the precise geometry of the plate boundaries and the characteristic of seismic clusters are better known.

**Reference**

Kao, H., Shen, S. S. J., & Ma, K. F. (1998). **Transition from oblique subduction to collision: Earthquakes in the southernmost Ryukyu arc‐Taiwan region.** *Journal of Geophysical Research*, 103(B4), 7211-7229.

Lallemand, S., Theunissen, T., Schnürle, P., Lee, C. S., Liu, C. S., & Font, Y. (2013). **Indentation of the Philippine Sea plate by the Eurasia plate in Taiwan: Details from recent marine seismological experiments.** *Tectonophysics*, 594, 60-79.