**Explore shallow and deep structure in southernmost Ryukyu system by hypocentral determinations of earthquakes, reflection seismic data and 3D tomography**

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Abstract

Absolute earthquake hypocenter locations have been determined in the area offshore eastern Taiwan, at the Southernmost Ryukyu subduction zone. The study focuses on the most active seismic cluster in the Taiwan region that occurs in the forearc domain offshore eastern Taiwan. Earthquakes distribute mainly along 2 active planes. The first one aligns along the subduction interface and the second one, shallower affects the overriding margin. Focal mechanisms within the shallow group indicate that nodal planes are either compatible with high-angle back-thrusts or low-angle thrusts. The active seismic deformation exclusively indicates reverse faulting revealing that the forearc basement undergoes trench-perpendicular strong compression.

The other paper document colliding island arcs. Those arc systems and proximal ‘‘back-arcs’’ have similar seismic characteristics attesting either for the presence of a middle crust with continental velocities and/or serpentinized uppermost mantle that facilitate crustal shortening/slivering and subsequent decoupling from the rest of the subducting plate.

References

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