

## **General tectonics along the plate convergence from the Ryukyus, Taiwan, to the Philippines**

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The plate convergence between the Philippine Sea Plate and the Eurasian Plate along the Ryukyu Islands, Taiwan and the Philippines displays diverse tectonics. Both the plate subduction and the plate collision can be observed. The Philippine Sea Plate has subducted northward beneath the Ryukyu Islands. However, the northern portion of the linear Luzon-Okinawa fracture zone of the Philippine Sea Plate has displayed its reluctant subduction parallel to the northern Ryukyu Trench. In the middle of the Ryukyu Trench, a high gravity zone and forearc extensional faults show that the plate coupling is strong, and a mega-splay fault exists beneath the forearc region to the south of Miyako Island. In the westernmost of the Ryukyu subduction zone, the plate convergence is considerably oblique. The Southern Okinawa Trough back-arc basin has been rifting intensively from the former convergent (Taiwan) orogen since ~2 Ma. In northern Taiwan, the Philippine Sea Plate has split a subducting part in the north and a colliding part in the south. The famous spot of Ching-Shui Cliff in northeast Taiwan may mark the separation of the different plate convergences. The convergence between the Eurasian and the Philippine Sea plates has been colliding in the middle and southern Taiwan. The plate convergence of the Eurasian and the Philippine Sea plates in the Philippine regions is very complicated. The Manila Trench occurs in the west, while the Philippine Trench occurs in the east. In between, the Philippine Fault cut across the whole Philippine archipelago. Large earthquakes have occurred frequently along the Philippine Fault. In the middle of the Philippines, a plate collision occurred at Mindoro Island, where the Manila Trench vanished. The collision probably changed the motion of the middle and southern Philippine mobile belts, which have rotated anti-clockwise against the Eurasian Plate. The southern branch of the Philippine Fault generally follows a small circle of rotation. Some branches of the Philippine Fault have extended westwards and connect to the Manila Trench. The Philippine Fault segmentation is possible because the subducted South China Sea oceanic crust (slab) contains different ages separated by fracture zones.

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