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Structural features offshore northern Taiwan

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The area offshore northern Taiwan is the place where East China Sea Shelf extends into the Southern Okinawa Trough, and where pre-Pleistocene arc-continental collision had occurred. Comparison between fault distribution in the area with previously published results suggests that the fault distribution and regional structural framework are still controversial. Using marine multichannel seismic reflection data collected in 3 marine geophysical survey cruises, we remapped the fault distribution in the northern offshore area of Taiwan. By analyzing all the seismic profiles using the KINGDOM suite (a seismic interpretation software), a new fault distribution map is presented, and a subsurface unconformity PRSB (Pliocene reflection sequence boundary) is identified. Six major NE-SW trending high-angle normal faults cut the PRSB can be traced to the fault systems on land northernmost Taiwan. These normal faults are located between the Southern Okinawa Trough and the East China Sea continental shelf basin, and have been suggested to be reactivated from pre-existing reverse faults. The offsets of fault ramps in PRSB increase toward southeast. The isopach map of the study area compiled shows that sediment strata overlying PRSB thin toward northwest.