

Characteristics of water in the southern Okinawa Trough.

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The Okinawa Trough is a basin within the East China Sea, where maximum depth reaches 2300 m. There are two characteristic water masses in the Okinawa Trough. One is the high salinity water in the sub-surface layer shallower than 300 m and the other is the low salinity water in the intermediate layer from 400 m to 700 m. According to the previous studies, the former water is occupied by the South China Sea Tropical Water (SCSTW) and the Kuroshio Tropical Water (KTW), and the latter is dominated by modified water masses of the North Pacific Intermediate Water (NPIW) and the South China Sea Intermediate Water (SCSIW). However, in the previous studies, the southern part of the Okinawa Trough remains to be observed, and it should be confirmed whether the previous results can apply to the southern part.

In this study, water mass properties in the southern part of the Okinawa Trough are investigated in detail. We mainly used CTD data from T/V Kagoshima-maru cruises in June from 2013 to 2018. The high salinity waters in the sub-surface layer were classified into three groups: SCSTW, KTW and the tropical waters in the east of Ryukyu Islands chain. The low salinity water in the intermediate layer had a complicated distribution in which the low salinity water from the east of Taiwan and that from the Kerama Gap.

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