

Variation in planktic and benthic foraminiferal oxygen isotopes in a sediment core obtained from the Okinawa Trough's the continental slope in the East China Sea.

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The Kuroshio Current is a western boundary current in the North Pacific Gyre, flowing along the continental shelf edge of the Okinawa Trough in the East China Sea. A piston core KS22-4 PC05 was obtained from the continental slope of the Okinawa Trough (PC05, 28°56.7341'N, 127°13.7761'E, 563.85 m water depth). Foraminiferal shells' oxygen isotope ($\delta^{18}\text{O}$) records seawater's ambient temperature, salinity, and $\delta^{18}\text{O}$. We measured $\delta^{18}\text{O}$ of planktic foraminifera *Globigerinoides ruber* sensu stricto (*G. ruber* ss) and benthic foraminifera *Uvigerina* spp. In addition, $\delta^{18}\text{O}$ of three *G. ruber* morphotypes (*G. ruber* ss; *G. ruber* sensu lato, *G. ruber* sl; and *G. ruber* subspecies with a small final chamber, *G. ruber* subsp) were compared to understand the $\delta^{18}\text{O}$ differences in morphotypes. In PC05, *G. ruber* ss $\delta^{18}\text{O}$ showed light values -2.02‰ and -2.97‰ at the two core top samples, whereas heavy values from -0.63‰ to -1.61 ‰ below 13.8 cm core depth. Comparing the *G. ruber* ss $\delta^{18}\text{O}$ patterns with the neighboring piston core YK12-15 PC01 with radiocarbon dates, the Holocene interval of PC05 is suggested to be less than 24 cm thick. *Uvigerina* spp. $\delta^{18}\text{O}$ in PC05 ranged from 2.66‰ to 3.84‰ but mostly between 3.2‰ and 3.6‰. At the two core top samples, *Uvigerina* spp. $\delta^{18}\text{O}$ were 3.21‰ and 3.53‰, not showing light values. Holocene and Glacial *Uvigerina* spp. $\delta^{18}\text{O}$ in Core MD01-2404 (26°38.84'N, 125°48.75'E, 1397 m water depth) were 2.5-3.0‰ and 4.0-4.5‰, respectively. We have estimated the *Uvigerina* spp. $\delta^{18}\text{O}$ offset as ~1.1‰ due to the temperature differences at PC05 (564 m) and MD01-2404 (1397 m). The PC05 core top values of *Uvigerina* spp. $\delta^{18}\text{O}$ (3.21‰ and 3.53‰) are likely equivalent to the glacial periods. $\delta^{18}\text{O}$ of three *G. ruber* morphotypes showed different values: the lightest for *G. ruber* ss and the heaviest for *G. ruber* sl. *G. ruber* subsp $\delta^{18}\text{O}$ showed intermediate values between *G. ruber* ss and *G. ruber* sl. This suggests that *G. ruber* subsp' s living depth is between the depths of habitats *Globigerinoides ruber* ss and *G. ruber* sl, or a mixture of values from the two morphotypes.

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