



## Temperature Distribution of Kuroshio in East China Sea

KANG Jian-cheng, REN Hui-ru, WANG Tian-tian, AN Yan

Urban Ecology and Environment Research Center, Shanghai Normal University, Shanghai 200234, China

The temperature distribution for the Kuroshio in the East China Sea (ECS) is analyzed using the data from World Ocean Atlas 2005. It is found, the yearly temperature difference at surface layer (0-50m) gets the largest in the May and least in the August, from the entrance of ECS-Kuroshio, section 24.5°N near east of Taiwan island, to the exit of ECS-Kuroshio, section 130°E near the Tokara Strait. It implies that the heat exchange of Kuroshio in ECS gets to the biggest in May at surface layer. Along ECS-Kuroshio current, the values of yearly-temperature-difference and monthly-temperature-difference become largest around section 128°E. It implies that the region around 128°E is area with largest heat exchange for ECS-Kuroshio. At middle segment of ESC-Kuroshio between sections 124°E and 129°E, there are “low temperature wedges (LTW)” appearing in the depth 100m~250m at the vertical sections, the LTW positions are corresponding to the steps on ECS continental shelf, which reflects the colder bottom water on the ECS continental shelf. At some vertical sections, the colder bottom water wedge inserts Kuroshio. From the entrance to the exit of ECS-Kuroshio, there is temperature transformational layer (TTL) at the depth 200m~250m. Up the TTL, the temperature is decreasing with ECS-Kuroshio current for the same depth, but the temperature is increasing below the TTL. This characteristic is most remarkably in February. The process should be when Kuroshio enters ECS, the upper water outspread toward area of ECS continental shelf, and the water layer below the TTL expand toward the bottom of Okinawa Trough.