

Significant SST differences between peak MIS5 and MIS1 along the low-latitude western North Pacific margin

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In order to quantify the differences, this study calculated the SST for the peak periods of MIS5e (c. 128-113 ka BP) and MIS1 (c. 8-3 ka BP) along the low-latitude western North Pacific margin (18 °N to 26 °N). Together with the previously published data from the South China Sea (9 °N to 19 °N), the results indicate a generally northwards decreasing trend in the two interglacial periods. This latitudinal SST trend in both peak MIS 1 and MIS 5e can be attributed to the strong influence of ocean currents in the studied region. Secondly, the average SST of peak MIS5e is 1.3 ± 0.2 °C higher than that of peak MIS1, suggesting a higher level of insolation during the previous interglacial. However, the above general pattern is complicated by the near-shore and offshore difference in the effects of winter monsoon on oceanic conditions around 20-22 °N. The coastal upwelling near 26 °N during peak MIS5e reduced the SST, whilst the SST was raised as the upwelling ceased during peak MIS1. Finally, the SSTs of the two warm periods are significantly higher than the present SST from 20 °N northwards, implying the influence of winter monsoon cold current in the Taiwan Strait.