



## **Warming Trends of Tropical Pacific Warm Pool and Cold Tongue SSTs**

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Using the coral data, SST reanalysis data and CMIP3 data, we analyze current and future warm pool and cold tongue SST trends. For the recent 100 years, overall the La Nina-like SST trend, meaning that the warming trend of the warm pool SST is greater than that of the cold tongue SST, is dominant in most of observed and analyzed SST data. However, most of CGCMs under the future higher concentration of greenhouse gases forcing produce the warming trend resembling El Nino-like pattern. On the whole, the warmer tropical climate condition corresponds to the stronger El Nino-like response. The heat budget analysis further verifies that the warmer tropical climate state somehow diminishes the role of the ocean dynamical thermostat that regulates the cold tongue temperature. Therefore, the thermo-dynamical thermostat, of which the efficiency depends on the mean temperature, becomes a main regulator of both the warm pool and cold tongue temperature, and thus the warming tendency of the cold tongue SST leads that of the warm pool SST.