

Western Pacific warm pool temperature variation in response to radiative forcing of greenhouse gases

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Estimating of global temperature changes in response to changing in atmospheric greenhouse gas concentrations is of particular importance for understanding Earth's climate system. Past sea surface temperature (SST) record in the western Pacific warm pool (WPWP) is one of key tools providing the mean state of climate due to its distant location from continental icesheets. If SST change in WPWP is largely restricted by radiative forcing of greenhouse gases, it is expected to show amplitude change of glacial-interglacial terminations across about 450 ka as the atmospheric CO₂ amplitudes increase from 80 to 100ppm. However, previously reported WPWP SST records do not agree each other. Here, we provide new WPWP SST record using a piston core retrieved from the Ontong Java Plateau for the past 1.0 Myr. We will discuss possible reasons of disagreement of WPWP SST records and their sensitivity to the radiative forcing of greenhouse gases.

Keywords: Sea surface temperature, western Pacific warm pool, climate sensitivity, radiative forcing