

Title:

Nonlinear climatic sensitivity to greenhouse gases over past 4 glacial/interglacial cycles

Citation:

Lo, L. *et al.* Nonlinear climatic sensitivity to greenhouse gases over past 4 glacial/interglacial cycles. *Scientific Reports* **7**, 4626 (2017).

Abstract:

The paleoclimatic sensitivity to atmospheric greenhouse gases (GHGs) has recently been suggested to be nonlinear, however a GHG threshold value associated with deglaciation remains uncertain. Here, ^[L]_[SEP] we combine a new sea surface temperature record spanning the last 360,000 years from the southern Western Pacific Warm Pool with records from five previous studies in the equatorial Pacific to document the nonlinear relationship between climatic sensitivity and GHG levels over the past four glacial/ interglacial cycles. The sensitivity of the responses to GHG concentrations rises dramatically by a factor of 2–4 at atmospheric CO₂ levels of >220 ppm. Our results suggest that the equatorial Pacific acts as a nonlinear amplifier that allows global climate to transition from deglacial to full interglacial conditions once atmospheric CO₂ levels reach threshold levels.

Presenter:

Li Lo 羅立

Affiliation:

Guangzhou Institute of Geochemistry, Chinese Academy of Sciences

中國科學院廣州地球化學研究所