

Modelling a Modern-like-pCO₂ Warm Period (MIS KM5c) with Two Versions of IPSL AOGCM

Ning Tan ^{1,2}, Camille Contoux ², Gilles Ramstein ², Yong Sun ³, Christophe Dumas ², Pierre Sepulchre ²

¹Key Laboratory of Cenozoic Geology and Environment, Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing 100029, China.

²Laboratoire des Sciences du Climat et de l'Environnement, LSCE/IPSL, CEA-CNRS-UVSQ, Université Paris-Saclay, F-91191 Gif-sur-Yvette, France.

³State Key Laboratory of Numerical Modelling for Atmospheric Sciences and Geophysical Fluid Dynamics, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China

Correspondence to: Ning Tan (ning.tan@mail.iggcas.ac.cn)

Supplementary Figures

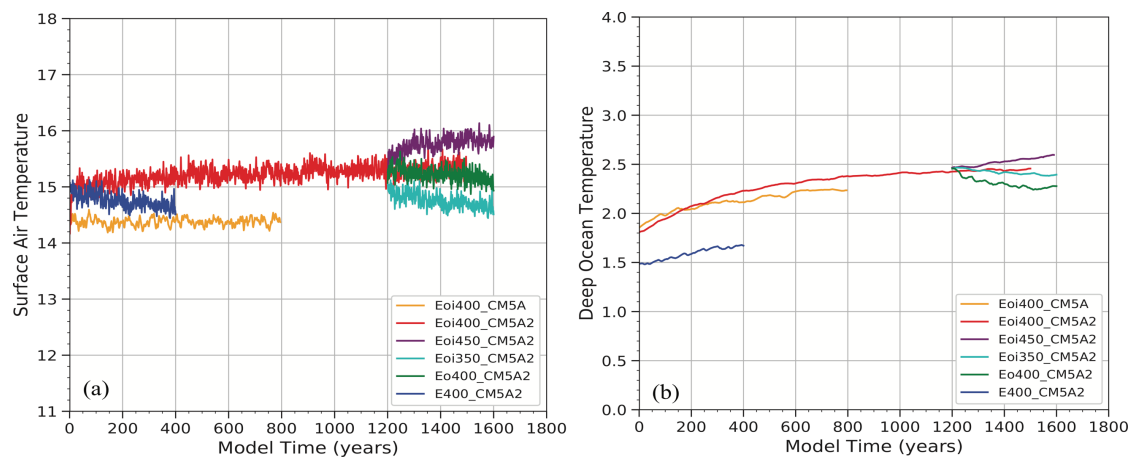


Figure S1: Time series of simulated mean annual surface air temperature and deep ocean temperature (2.3km depth) in each experiment.

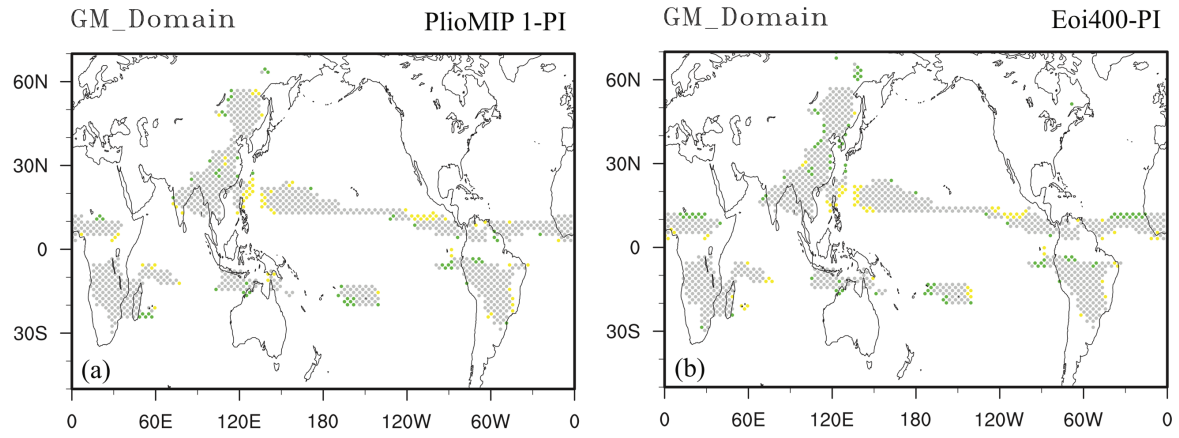


Figure S2: Global monsoon regions' changes in PlioMIP 1 and Eoi400 relative to PI control (yellow area indicates monsoon region retreat; green area indicates monsoon region expansion).

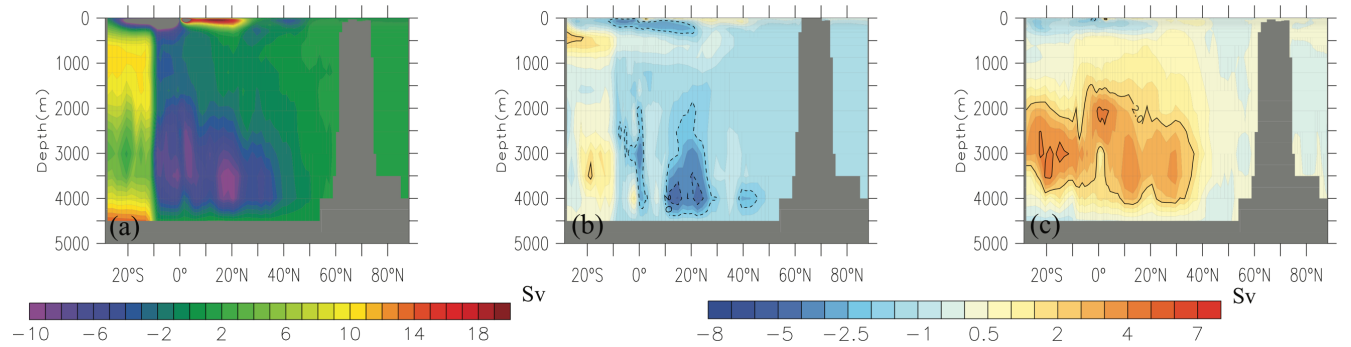


Figure S3: Pacific meridional overturning circulation (PMOC) in PI control (a) and the PMOC anomalies of Eoi400 and PlioMIP 1 experiment in comparison with PI control.

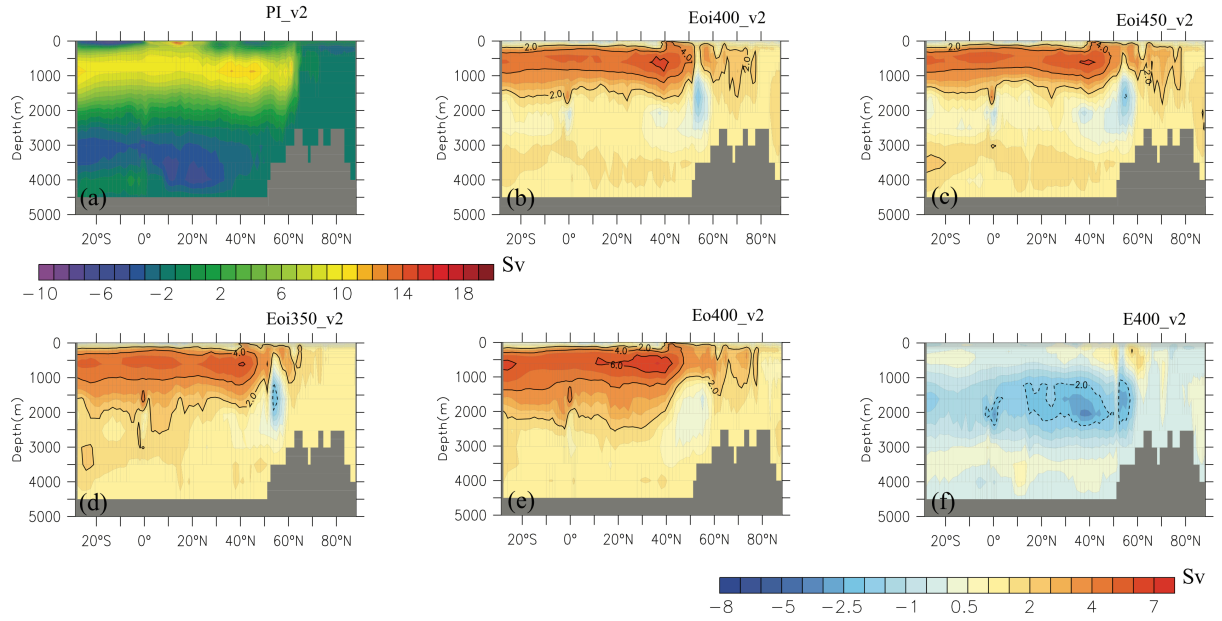


Figure S4: Mean annual AMOC of PI control experiment in IPSLCM5A2 (a) and AMOC anomalies of Eoi400_v2 (b), Eoi450_v2 (c), Eoi350_v2 (d), Eo400_v2 (e) and E400_v2 (f) in comparison with PI condition.

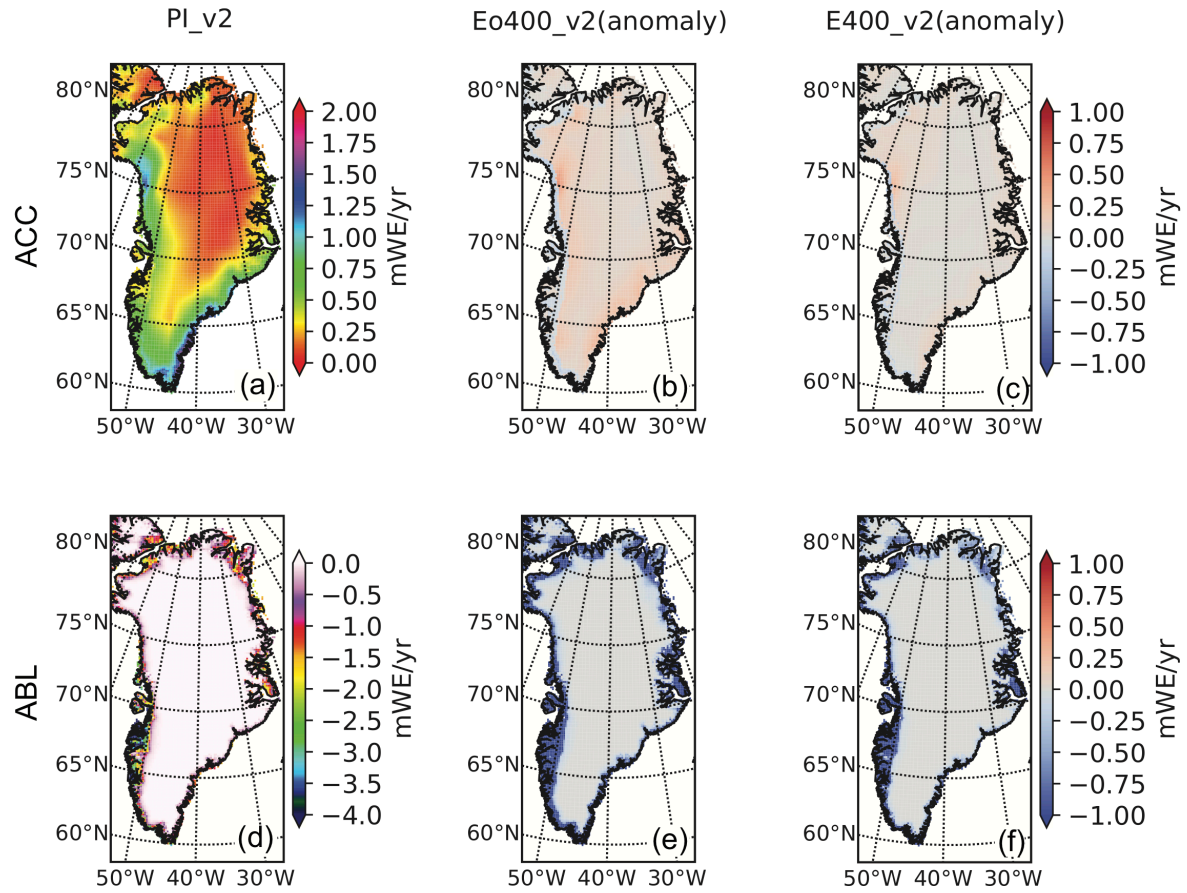


Figure S5: The mean annual accumulation (ACC) and ablation (ABL) in Greenland in PI control experiment (a, d), related anomalies of ACC and ABL in Eo400_v2 (b, e) and E400_v2 (c, f) experiments in comparison with PI control condition (unit: mWE(water equivalent)/yr).

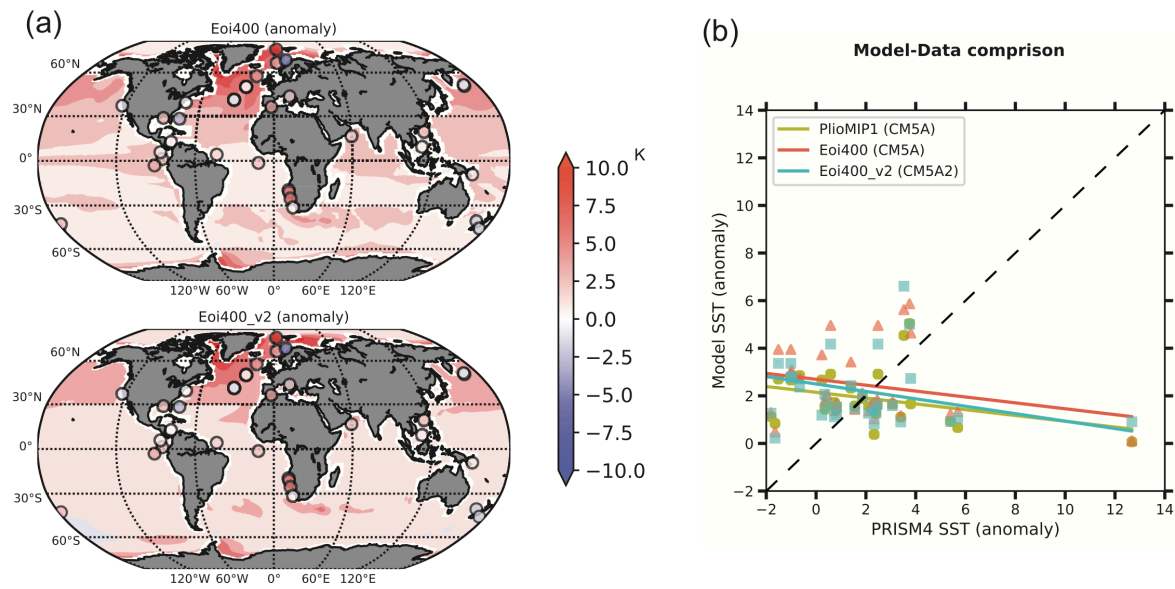


Figure S6: SST model data comparison. (a) Modelled warmest summer month SST anomalies of MIS KM5c (in relative to PI controls) and reconstructed MIS KM5c SST anomalies (in relative to near pre-industrial data). (b) The relationship between modelled SST anomalies and PRISM4 data anomalies.