



Supplement of

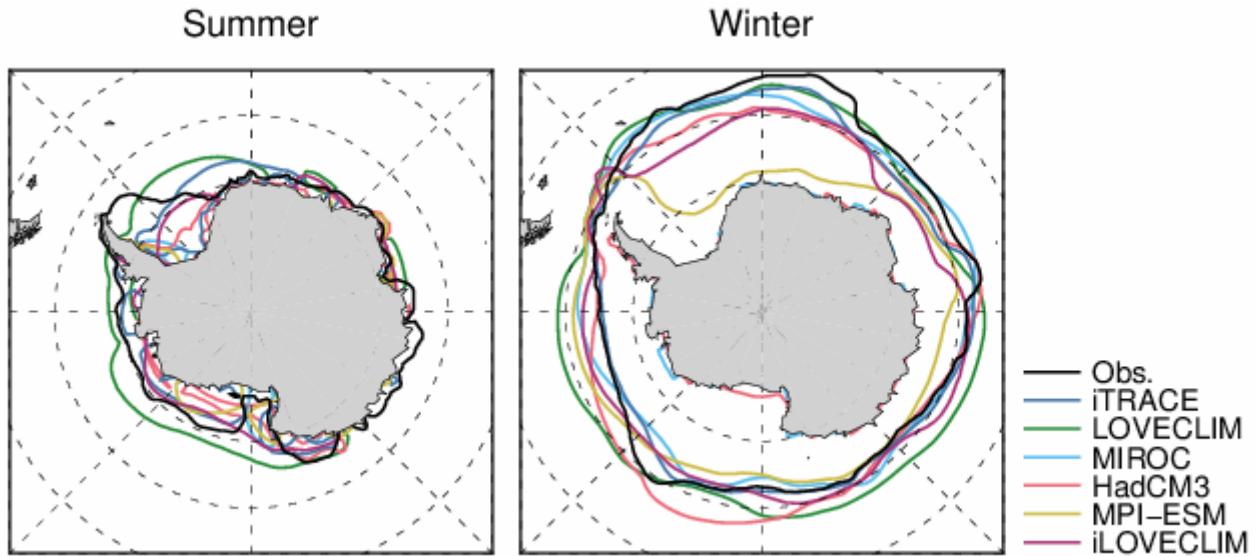
Multi-model assessment of the deglacial climatic evolution at high southern latitudes

Takashi Obase et al.

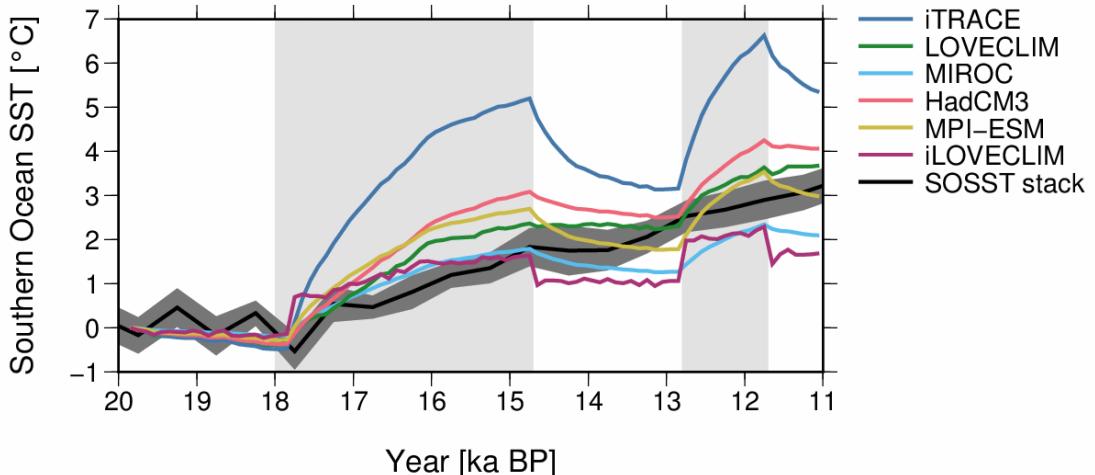
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1 **Supplementary Materials**



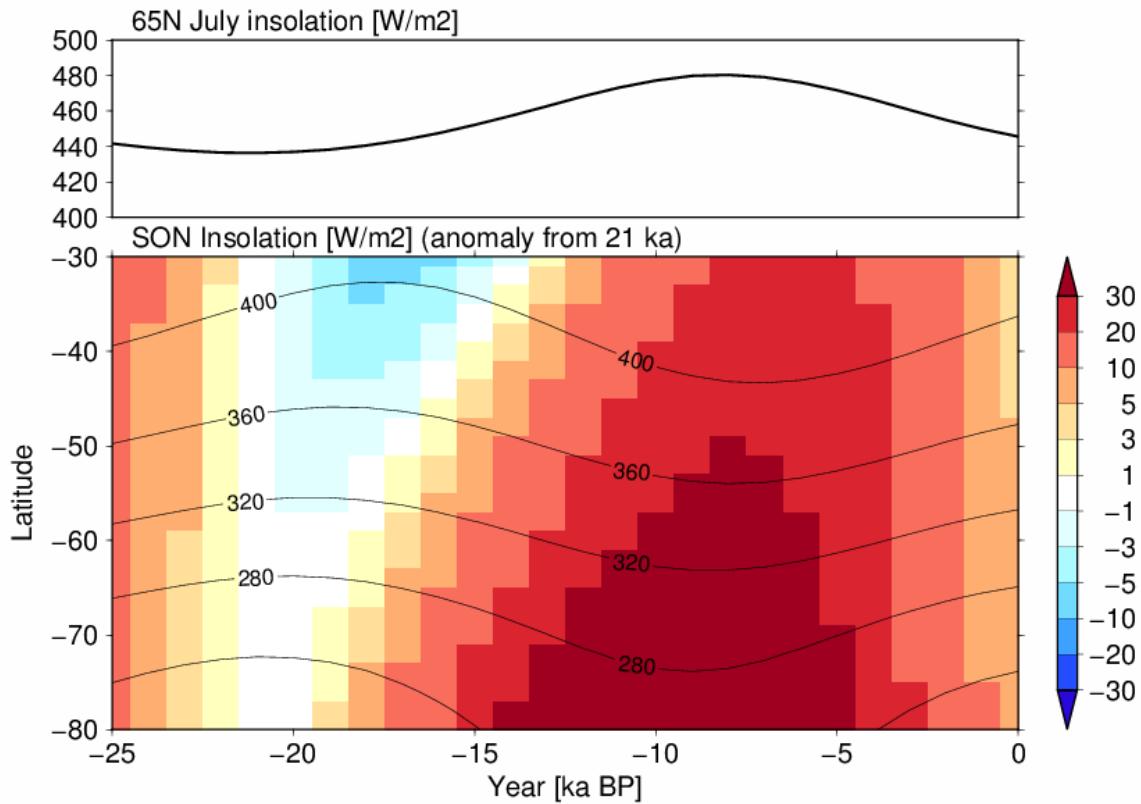
3 **Figure S1:** Simulated summer and winter sea-ice edge for the pre-industrial experiments from six climate
4 models used in this study (color lines). The black lines indicate summer and winter sea-ice edge from
5 observational data (COBE-SST for 1981-2010, Hirahara et al. 2014).



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7 **Figure S2:** Results of bipolar seesaw model with input of common atmospheric CO₂ (Bereiter et al.,
8 2015) and AMOC from iTRACE. The coefficient of each model follows numbers in Table 5. The black
9 lines and grey shades indicate the Southern Ocean SST stack and its standard error, respectively, as
10 derived by Anderson et al., (2020). The vertical grey shading indicates Heinrich Stadial 1 (18–14.7 ka)
11 and the Younger Dryas (12.8–11.7 ka), respectively, and the period in between corresponds to the Bølling–
12 Allerød (14.7–12.8 ka).

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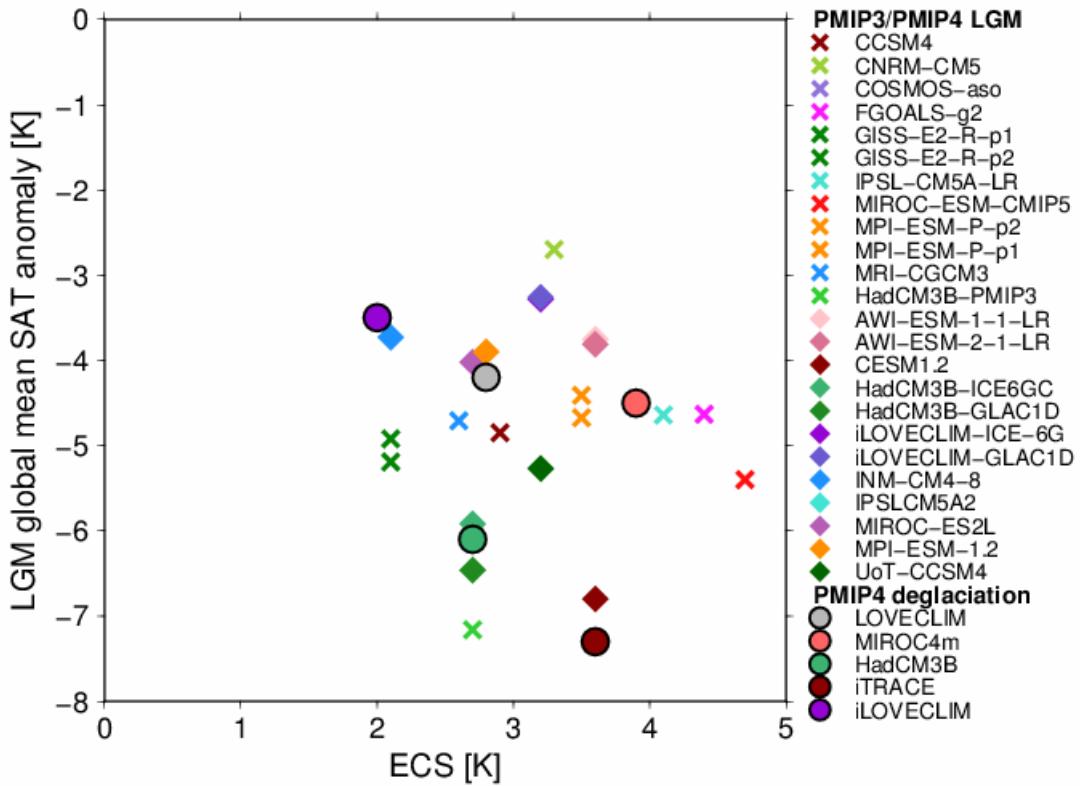
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15 **Figure S3:** (top) 65°N July insolation, (bottom) austral spring to summer (September to November)
 16 insolation. The contours indicate absolute values of the mean insolation, and colours indicate anomaly
 17 from 21 ka.

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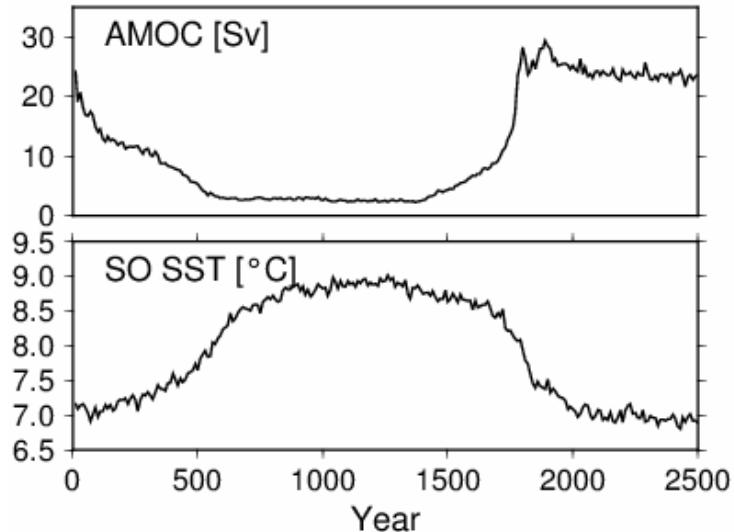
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22 **Figure S4:** Relationship between the equilibrium climate sensitivity (ECS) and global mean temperature
 23 changes for the LGM. The circles indicate PMIP4 deglaciation (this study), and crosses and diamonds
 24 indicate LGM simulations from PMIP3 and PMIP4 (Table S2 of Kageyama et al., 2021), respectively.

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27 **Figure S5:** Results from a North Atlantic meltwater experiment performed with LOVECLIM under 40ka
 28 boundary conditions and with an atmospheric CO₂ concentration fixed at 195 ppm (Margari et al., 2020).
 29 Freshwater is added into the North Atlantic (50–60°N). The freshwater flux is increased linearly to 0.2 Sv
 30 during the first 400 years, decreased linearly to zero during the next 400 years, and remains at zero
 31 thereafter.

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34 **References**

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