

PMIP4/CMIP6 Last Interglacial simulations using three different versions of MIROC: importance of vegetation

EGU21-3792

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- ✓ Three sets of Last Interglacial (LIG) experiments and of Pre-Industrial experiments are examined by using three versions of Japanese GCMs: MIROC-ES2L(CMIP6 contributed), MIROC4m(CMIP3 contributed) and MIROC4m-LPJ (NEW).
- ✓ All models show summer warming over northern high latitude land, correspondent to strong summer solar irradiance in the LIG. Only MIROC4m-LPJ, which includes dynamical vegetation feedback, shows annual mean warming signals at northern high latitudes.
- ✓ Feedback analysis shows interseasonal effect of warming in the Arctic Ocean in all three models. Vegetation feedback amplifies this interseasonal effect in MIROC4m-LPJ. MIROC-ES2L

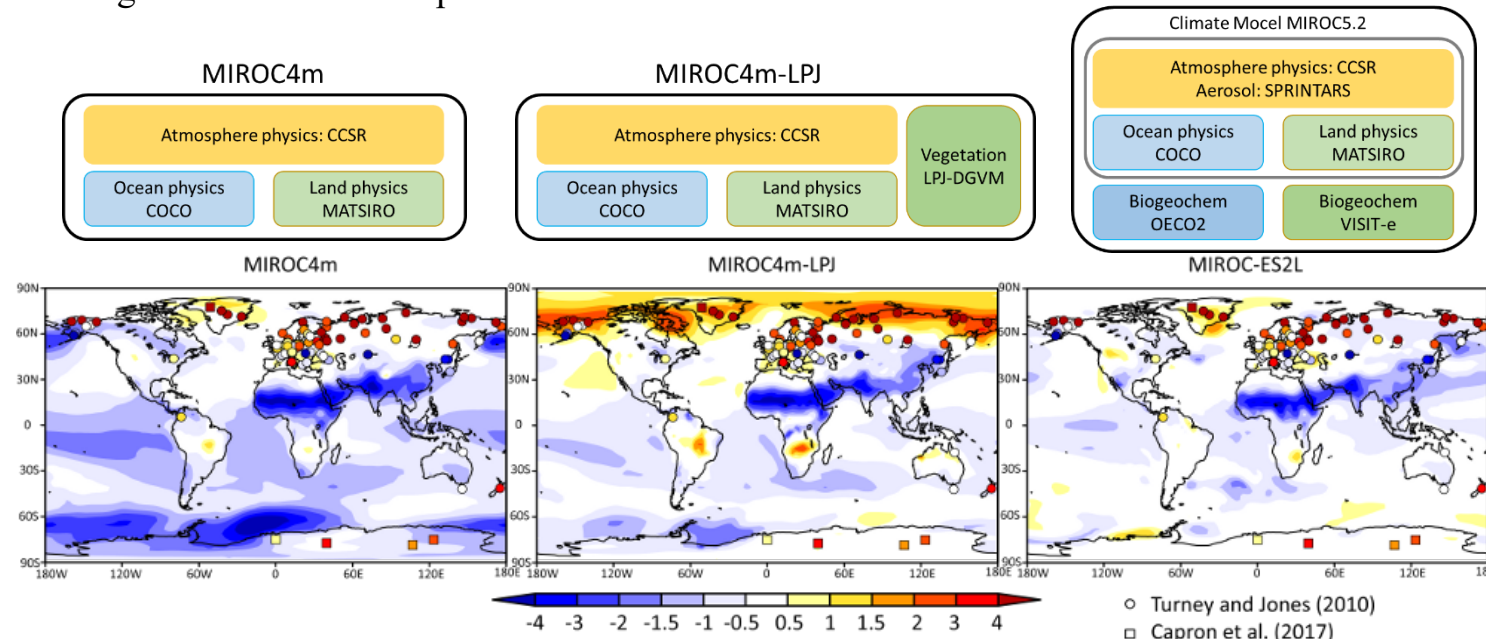


Figure 1: Annual surface air temperature change (K) between 127k and PI is compared with proxies.

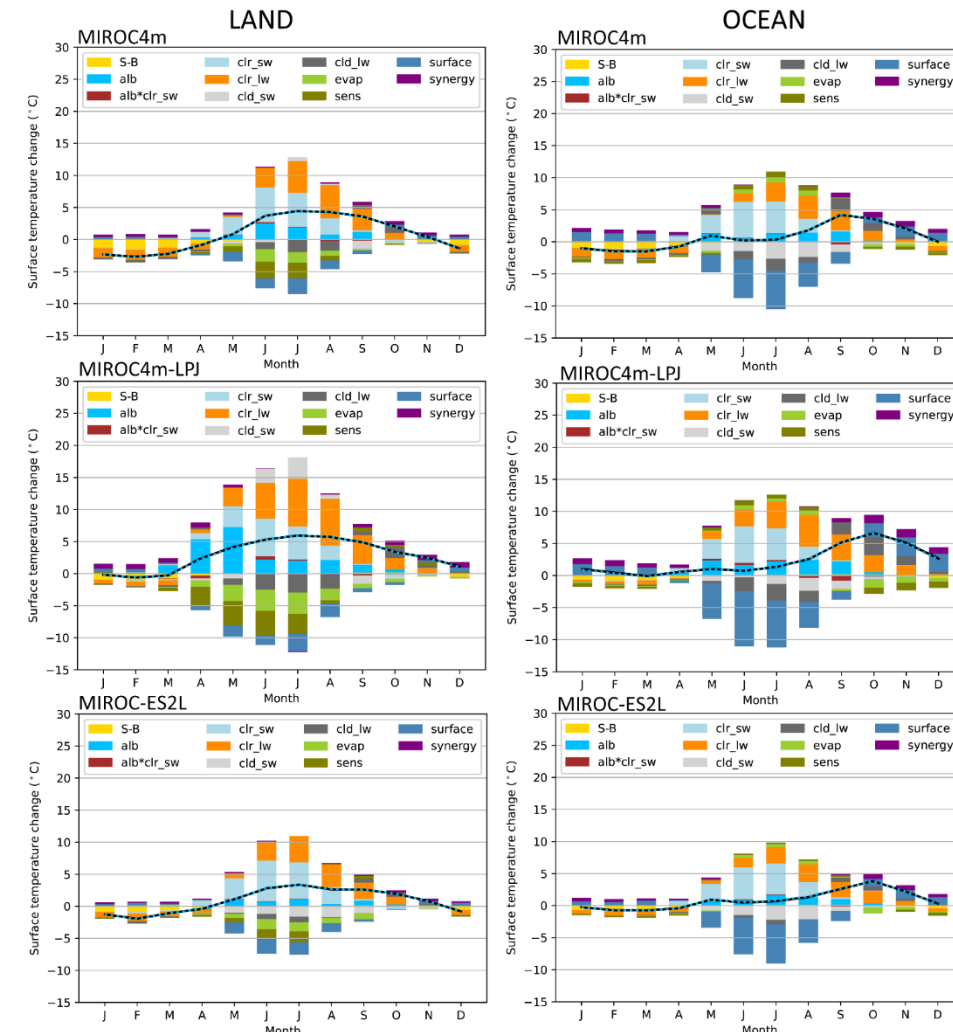


Figure 2: Monthly temperature change in north of 60N is decomposed into individual components by a feedback analysis method by Lu and Cai (2009) and Yoshimori and Suzuki (2019).

Published in Climate of the Past

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