

Comparison between the paleo data and climate prediction in the last interglacial by AOGCM with vegetation change

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The Last Interglacial (LIG; ca. 127,000 years ago) is known as the warm period induced by the different orbit of the Earth than the present day. Geological evidences indicate Greenland ice sheet reduction and sea level rise occurred in the LIG due to the warming, however, prediction by the atmosphere-ocean coupled general circulation models (AOGCMs) still underestimate this warming (Otto-Bliesner et al. 2013). In the present study, we introduce the LIG vegetation distribution predicted by a vegetation coupled GCM (MIROC-LPJ; O'ishi and Abe-Ouchi 2011) as boundary conditions of an AOGCM (MIROC4m; Hasumi and Emori 2004) and examined LIG climate prediction. The result indicates the introduction of LIG vegetation improves warming in the LIG compared with geological evidences. In the presentation we will discuss the contribution of the Atlantic meridional ocean circulation (AMOC).

Keywords: the Last Interglacial, AOGCM, vegetation feedback