

## Climate changes of the last deglaciation simulated by MIROC AOGCM

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During the last deglaciation, a major global warming was punctuated by abrupt climate changes related to Atlantic Meridional Overturning Circulation (AMOC). However, abrupt climate change associated with a rapid increase in the AMOC during Bølling-Allerød (BA) transition was reproduced only by applying a reduction in glacial meltwater, which is not inferred from reconstructions. Here we show that an abrupt increase in the AMOC during the BA transition can occur without reduction in glacial meltwater, from a transient simulation of the last deglaciation using an atmosphere-ocean general circulation model. The abrupt increase in the AMOC accompanied with drastic retreat of sea ice in the North Atlantic, abrupt warming in Greenland, cooling of the Southern Hemisphere, that are consistent with proxies and previous modeling studies. Model-data comparison at specific sites will be presented to evaluate simulated climate changes of the last deglaciation.