



A coupled AOGCM simulation of the last glacial inception

S. Murakami (1) and A. Kitoh (2)

(1) FRCGC, JAMSTEC, Japan, (2) Meteorological Research Institute, Japan
(smurakam@jmstec.go.jp)

A simulation study of the last glacial inception (about 115,000 year before present; 115 kyrBP) has been carried out with the Meteorological Research Institute (MRI) coupled atmosphere-ocean general circulation model (AOGCM). Earth's orbital parameters at 115 kyrBP and preindustrial green house gas (GHG) concentrations were used as boundary conditions. Long-term integration under the 115 kyrBP orbital forcing successfully generated perennial snow cover at Canadian Archipelago and Russian Arctic, which seems to be consistent with geological evidence. Several positive feedback processes that contribute to expand the perennial snow cover are observed. Enhanced water vapor transport from winter to late spring together with cooler summer temperature contributes to net positive snow accumulation of 200 kg/m² per year in Russian Arctic.