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Supplementary Materials

The Roles of Orbital and Meltwater Climate Forcings on Southern Ocean Dynamics during the Last Deglaciation

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1. Contents of this file

This supporting information file includes two figures (Figure S1 and Figure S2) and a table (Table S1).

Table S1. The meridional salinity gradient at 14.1 kyr BP in the FULL and the MWF experiments.

At 14.1 kyr BP	Salinity Gradient
FULL experiment	0.266
MWF experiment	−0.009

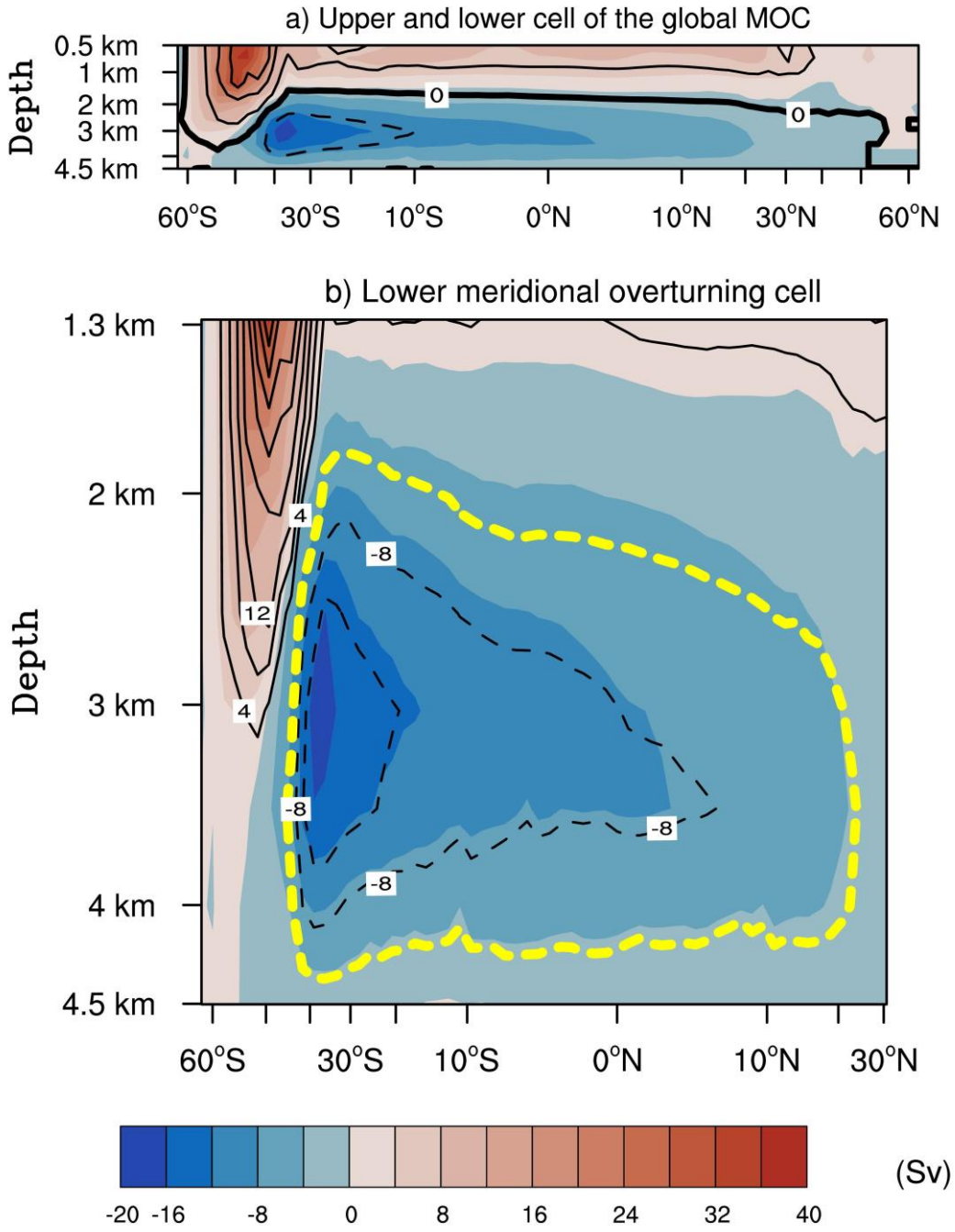

Figure S1. The upper and lower meridional overturning cells from the global MOC during the H1 (shaded contour) overlaid by the O_H (line contour). The units are in Sverdrup (Sv). (a) A segment of the MOC illustrating an upper (red) and a lower (blue) meridional overturning cell along with a Deacon cell (about 45°S to 60°S; red). The shaded contour intervals are 4 Sv, and the line contour intervals are 10 Sv. (b) A detailed outline of the lower section (1.3 to 4.5 km depth) of the MOC from Figure S1a. The shaded and line contour intervals are 4 Sv. The dashed, bold, and yellow contour interval highlighted the extent of the lower meridional overturning cell during the O_H.

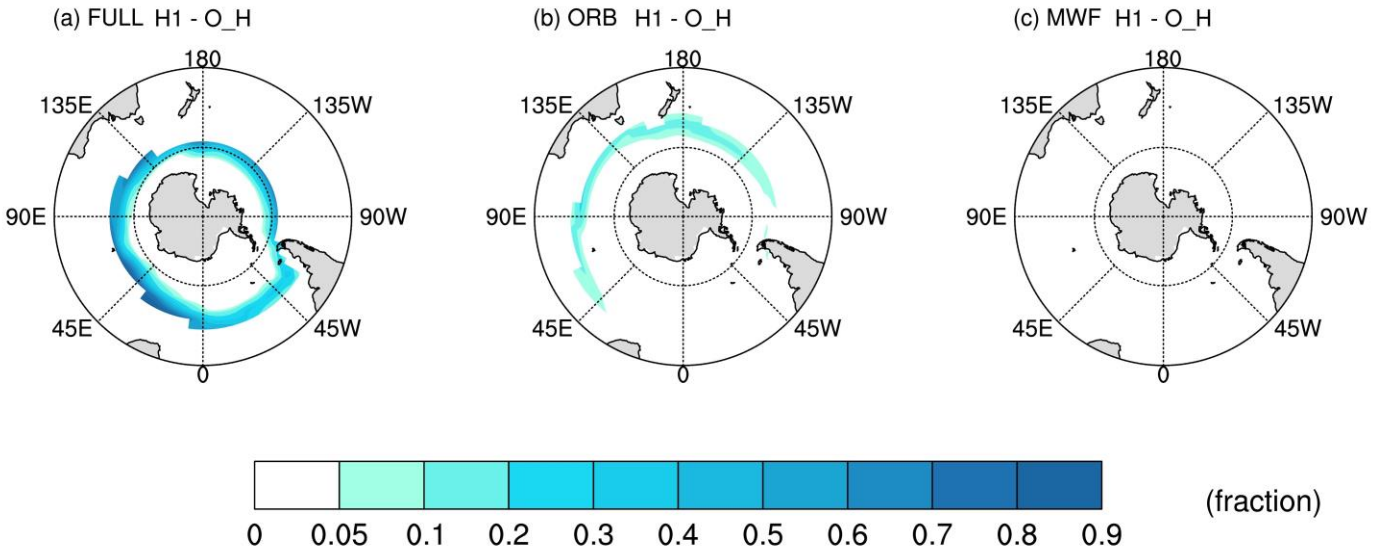

Figure S2. The change in Antarctic sea ice distribution between the H1 and the O_H in (**a**) the FULL, (**b**) the ORB, and (**c**) the MWF experiments during the last deglacial period.