

Supplementary Information

Formation of the North Atlantic Warming Hole by reducing anthropogenic sulphate aerosols

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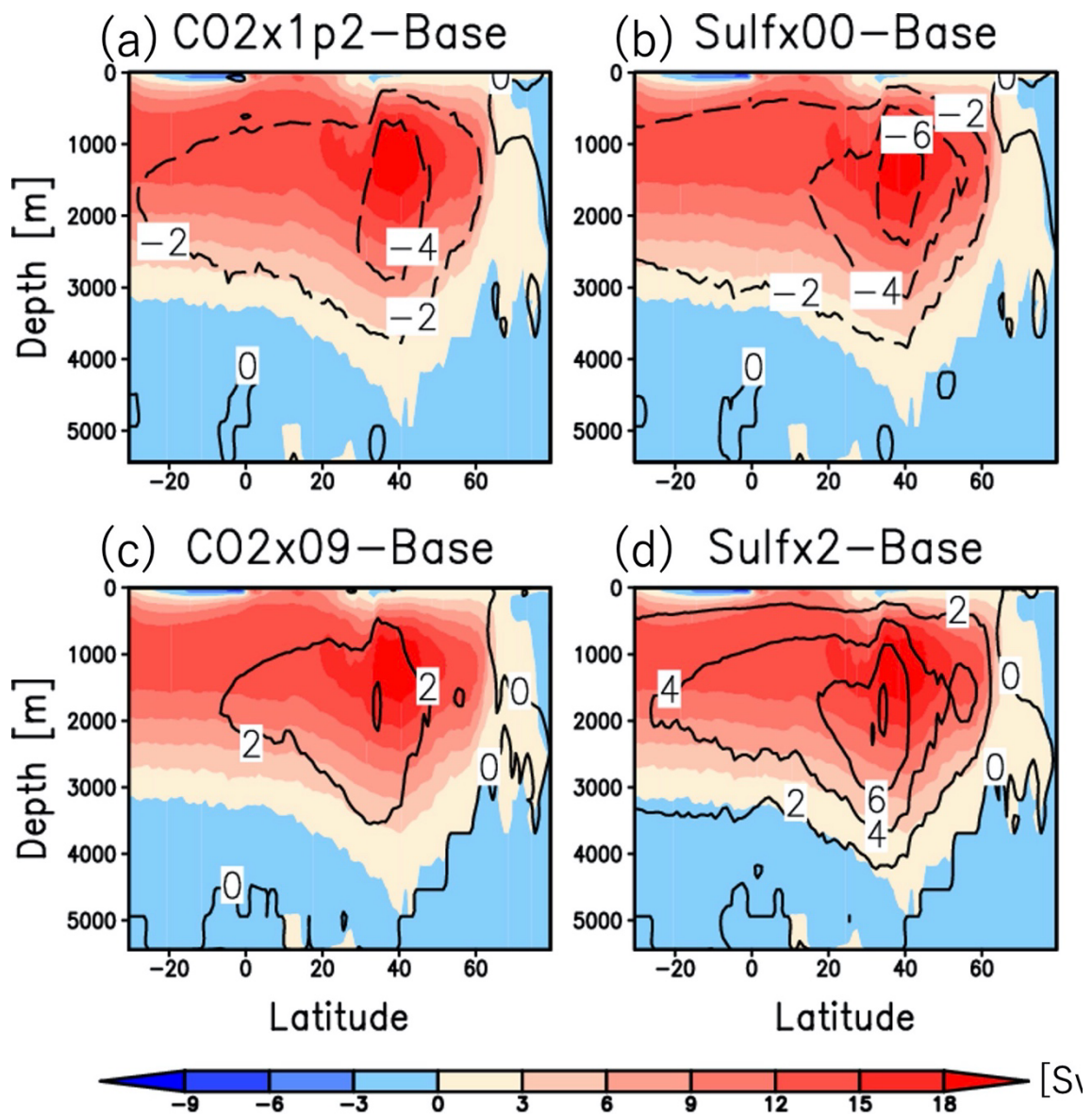


Fig. S1 | Anomalies of the AMOC stream function (black lines). (a) CO2x1p2, (b) Sulfx00, (c) CO2x09, and (d) Sulfx2 experiments. The colour shades indicate the AMOC stream function in the base experiment. The maps were generated with GrADS 2.2.1 (URL: <http://cola.gmu.edu/grads/>).

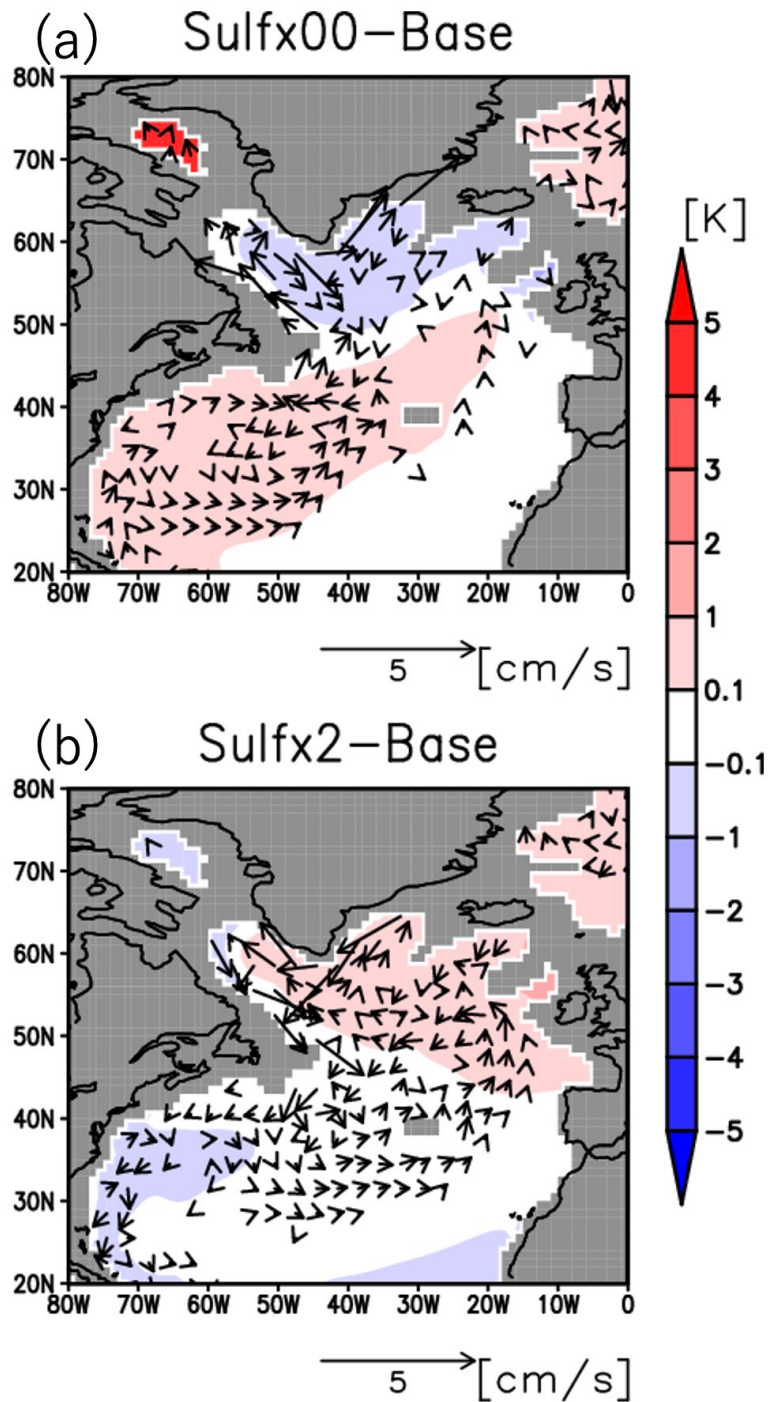


Fig. S2 | Anomalies of the ocean temperature (colours) and horizontal current velocity (vectors) at a depth of approximately 2000 m in the North Atlantic Ocean. (a) Sulfx00 and (b) Sulfx2 experiments. Vectors with magnitudes less than 0.1 cm s^{-1} are excluded. The maps were generated with GrADS 2.2.1 (URL: <http://cola.gmu.edu/grads/>).

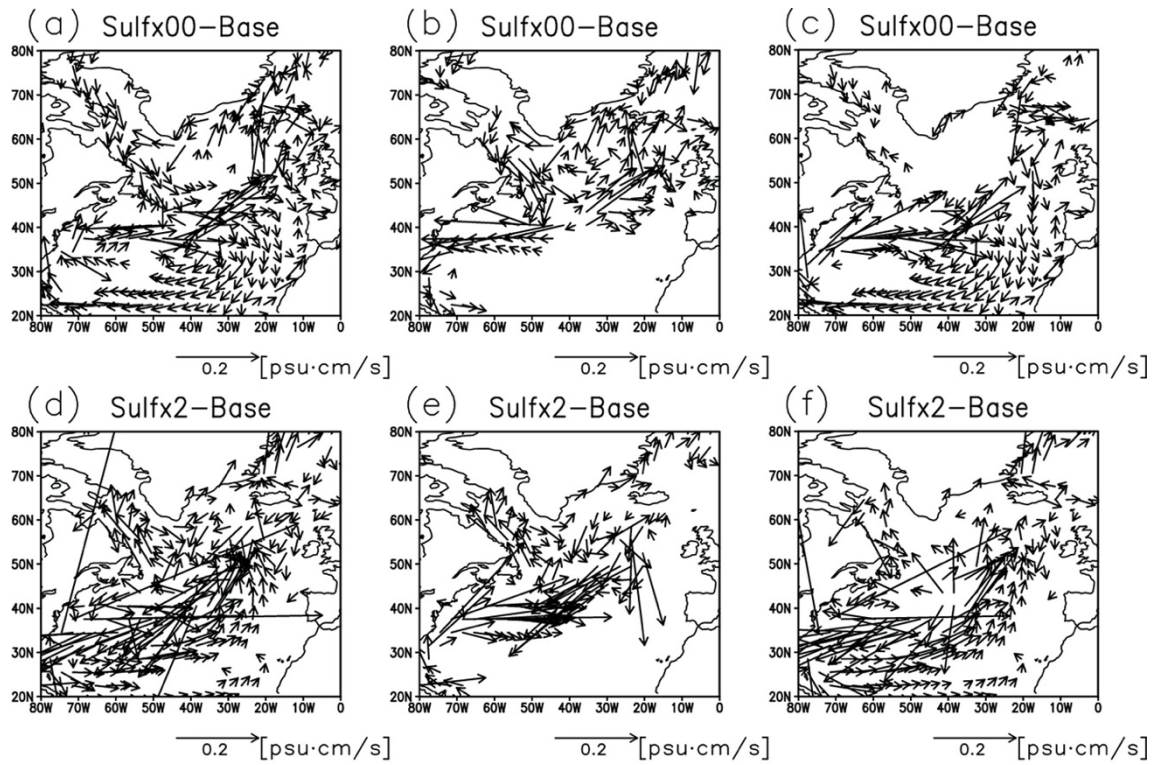


Fig. S3 | Anomalies of horizontal freshwater fluxes. The total horizontal freshwater fluxes are shown in (a) and (d), and their components of freshwater amount and flow velocity are shown in (b, e) and (c, f), respectively, in the Sulfx00 and Sulfx2 experiments. All vectors with magnitudes less than $0.02 \text{ psu cm s}^{-1}$ are excluded. The maps were generated with GrADS 2.2.1 (URL: <http://cola.gmu.edu/grads/>).

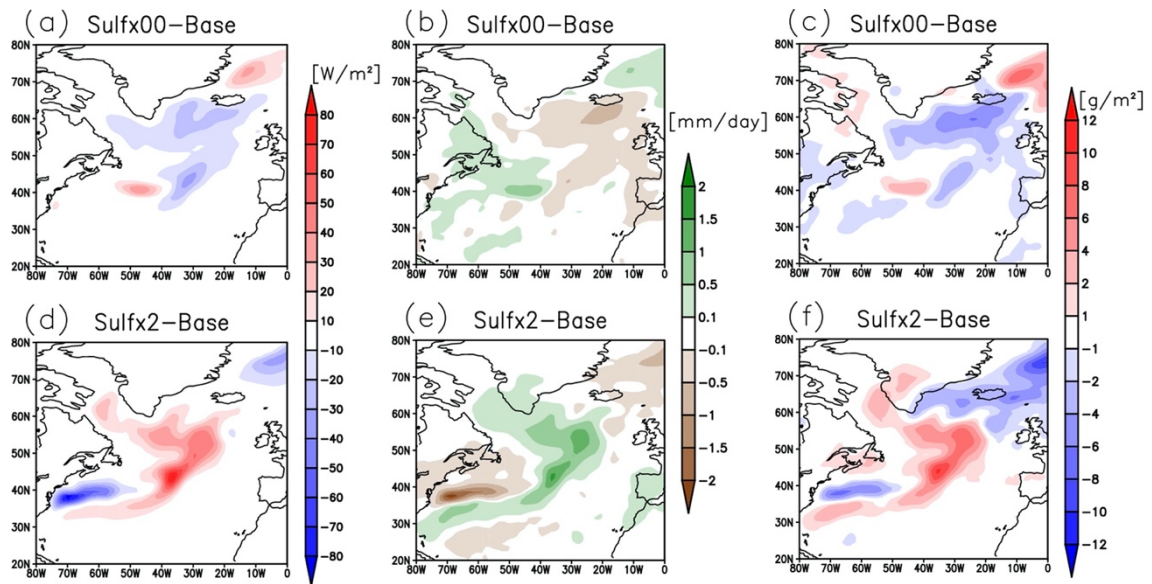


Fig. S4 | Anomalies of (a, d) latent heat from the sea surface, (b, e) precipitation, and (c, f) ice water path. (a–c) Sulfx00 and (d–f) Sulfx2 experiments. The maps were generated with GrADS 2.2.1 (URL: <http://cola.gmu.edu/grads/>).