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# *Corrigendum to* “Nordic overturning increases as AMOC weakens in response to global warming” published in Ocean Sci., 22, 1195–1211, 2026

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Due to oversights in the preparation of the manuscripts, the following clarifications to the methods are presented.

In Sect. 2.2, the MHT is calculated across 40° N (into the subpolar North Atlantic) and 66° N (into the Nordic Seas).

In Sect. 2.4, it should have been added that Box 7 is 900 m deep.

We also found some inconsistencies in the naming of constants in the model equations. We changed $a$ and $b$ to $r_0$ and $r_1$ respectively. Additionally, $h_1$ should be $f_1$ in Eq. (A10). The updated equations can be found below.

## Revised Box model Equations

$$\frac{\mathrm{d}T_0}{\mathrm{d}t} = \lambda_0(T_0^* - T_0) + \frac{m_0}{V_0}(T_6 - T_0) + \frac{r_0 K_s}{V_0}(T_1 - T_0) + \frac{r_1 K_s}{V_0}(T_7 - T_0) \tag{A1}$$

$$\frac{\mathrm{d}T_1}{\mathrm{d}t} = \lambda_1(T_1^* - T_1) + \frac{r_0 m_0}{V_1}(T_0 - T_1) + \frac{r_0 K_s}{V_1}(T_0 - T_1) + \frac{r_0 K_n}{V_1}(T_2 - T_1) + \frac{\eta}{V_1}(T_7 - T_1) \tag{A2}$$

$$\frac{\mathrm{d}T_2}{\mathrm{d}t} = \lambda_2(T_2^* - T_2) + \frac{r_0 m_0}{V_2}(T_1 - T_2) + \frac{r_0 K_n}{V_2}(T_1 - T_2) + \frac{r_0 K_{nn}}{V_2}(T_3 - T_2) + \frac{c_0}{V_2}(T_5 - T_2) \tag{A3}$$

$$\frac{\mathrm{d}T_3}{\mathrm{d}t} = \lambda_3(T_3^* - T_3) + \frac{r_0 m_1}{V_3}(T_2 - T_3) + \frac{r_0 K_{nn}}{V_3}(T_2 - T_3) + \frac{c_1}{V_3}(T_4 - T_3) \tag{A4}$$

$$\frac{\mathrm{d}T_4}{\mathrm{d}t} = \frac{r_0 m_1}{V_4}(T_3 - T_4) + \frac{r_1 m_1}{V_4}(T_5 - T_4) + \frac{c_1}{V_4}(T_3 - T_4) \tag{A5}$$

$$\frac{\mathrm{d}T_5}{\mathrm{d}t} = \frac{m_1}{V_5}(T_4 - T_5) + \frac{r_0(m_0 - m_1)}{V_5}(T_2 - T_5) + \frac{r_1 m_0}{V_5}(T_7 - T_5) + \frac{r_1 K_n}{V_5}(T_7 - T_5) + \frac{c_0}{V_5}(T_2 - T_5) \tag{A6}$$

$$\frac{\mathrm{d}T_6}{\mathrm{d}t} = \frac{m_0}{V_6}(T_5 - T_6) \tag{A7}$$

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$$\frac{\mathrm{d}T_7}{\mathrm{d}t} = \frac{r_1 m_0}{V_7}(T_0 - T_7) + \frac{r_1 K_s}{V_7}(T_0 - T_7) + \frac{r_1 K_n}{V_7}(T_5 - T_7)\frac{\eta}{V_7}(T_1 - T_7) \tag{A8}$$

$$\frac{\mathrm{d}S_0}{\mathrm{d}t} = \frac{S_0}{V_0}(f_2 + f_1) + \frac{m_0}{V_0}(S_6 - S_0) + \frac{r_0 K_s}{V_0}(S_1 - S_0) + \frac{r_1 K_s}{V_0}(S_7 - S_0) \tag{A9}$$

$$\frac{\mathrm{d}S_1}{\mathrm{d}t} = -\frac{S_0}{V_1} f_1 + \frac{r_0 m_0}{V_1}(S_0 - S_1) + \frac{r_0 K_s}{V_1}(S_0 - S_1) + \frac{r_0 K_n}{V_1}(S_2 - S_1) + \frac{\eta}{V_1}(S_7 - S_1) \tag{A10}$$

$$\frac{\mathrm{d}S_2}{\mathrm{d}t} = -\frac{S_0}{V_2}(f_2 - f_3) + \frac{r_0 m_0}{V_2}(S_1 - S_2) + \frac{r_0 K_n}{V_2}(S_1 - S_2) + \frac{r_0 K_{nn}}{V_2}(S_3 - S_2) \tag{A11}$$

$$\frac{\mathrm{d}S_3}{\mathrm{d}t} = -\frac{S_0}{V_3} f_3 + \frac{r_0 m_1}{V_3}(S_2 - S_3) + \frac{r_0 K_{nn}}{V_3}(S_2 - S_3) \tag{A12}$$

$$\frac{\mathrm{d}S_4}{\mathrm{d}t} = \frac{r_0 m_1}{V_4}(S_3 - S_4) + \frac{r_1 m_1}{V_4}(S_5 - S_4) + \frac{c_1}{V_4}(S_3 - S_4) \tag{A13}$$

$$\frac{\mathrm{d}S_5}{\mathrm{d}t} = \frac{c_0}{V_5}(S_2 - S_5) + \frac{m_1}{V_5}(S_4 - S_5) + \frac{r_1 m_0}{V_5}(S_7 - S_5) + \frac{r_0(m_0 - m_1)}{V_5}(S_2 - S_5) + \frac{r_1 K_n}{V_5}(S_7 - S_5) \tag{A14}$$

$$\frac{\mathrm{d}S_6}{\mathrm{d}t} = \frac{m_0}{V_6}(S_5 - S_6) \tag{A15}$$

$$\frac{\mathrm{d}S_7}{\mathrm{d}t} = \frac{r_1 m_0}{V_7}(S_0 - S_7) + \frac{r_1 K_n}{V_7}(T_5 - T_7) + \frac{r_1 K_s}{V_7}(T_0 - T_7) + \frac{\eta}{V_7}(S_1 - S_7) \tag{A16}$$

with

$$m_0 = k_0(r_2\rho(S_2, T_2) + r_5\rho(S_5, T_5) - \rho(S_0, T_0)) \tag{A17}$$

$$m_1 = k_1(r_3\rho(S_3, T_3) + r_4\rho(S_4, T_4) - r_2\rho(S_2, T_2) - r_5\rho(S_5, T_5)) \tag{A18}$$

and

$$r_0 = \frac{D_1}{D_1 + D_7} \tag{A19}$$

$$r_1 = 1 - r_0 \tag{A20}$$

$$r_2 = \frac{D_2}{D_2 + D_5} \tag{A21}$$

$$r_5 = 1 - r_2 \tag{A22}$$

$$r_3 = \frac{D_3}{D_3 + D_4} \tag{A23}$$

$$r_4 = 1 - r_3 \tag{A24}$$

where $D_i$ is the depth of box $i$ and $V_i$ is the volume of box $i$.

Additionally, a minor error was discovered in the box model code. As a result, we have updated the values in the second paragraph of Sect. 3.2. Specifically: "Under 2 mSv yr$^{-1}$ of hosing and 0.1 °C per decade warming, convection ceases around year 2160 followed by a steep AMOC decline and final shutdown around 2170. For a warming rate of 0.4 °C per decade, however, convection already stops around 2150 – a decade earlier."

Figures 2, 3, 4 and B1 have been updated accordingly and are shown below. The findings of the paper remain unaffected.

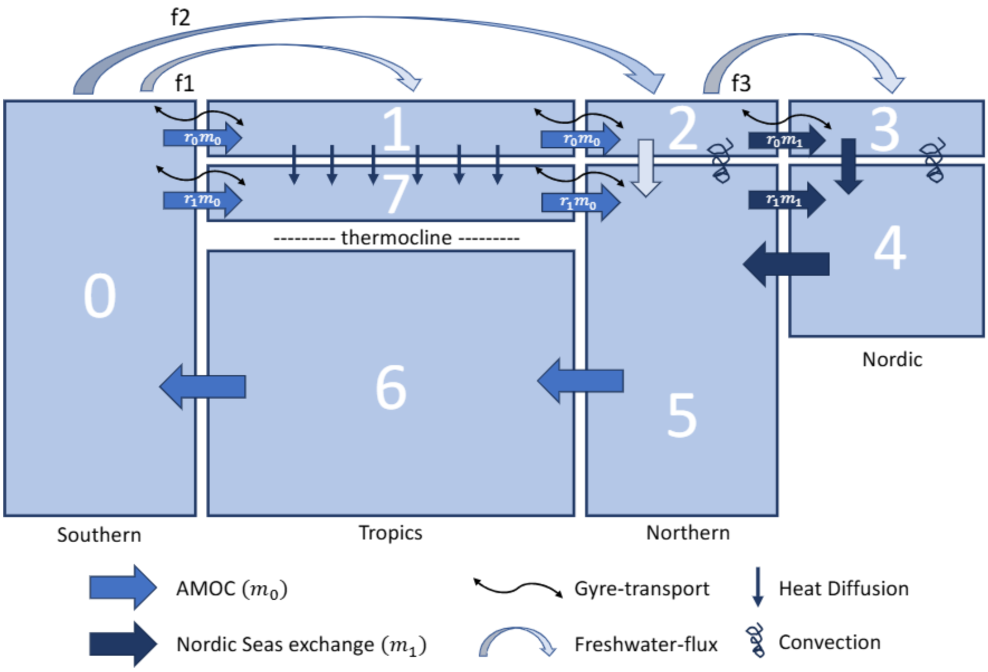


**Figure 2.** Schematic representation of the box model of the Atlantic Ocean. $f_1$–$f_3$ are the freshwater fluxes between the boxes. The wavy arrows indicate gyre transport. The solid large arrows represent AMOC (medium blue) and NOC (dark blue) respectively, while the small solid arrows indicate diffusive heat transport. The coils mark convection.

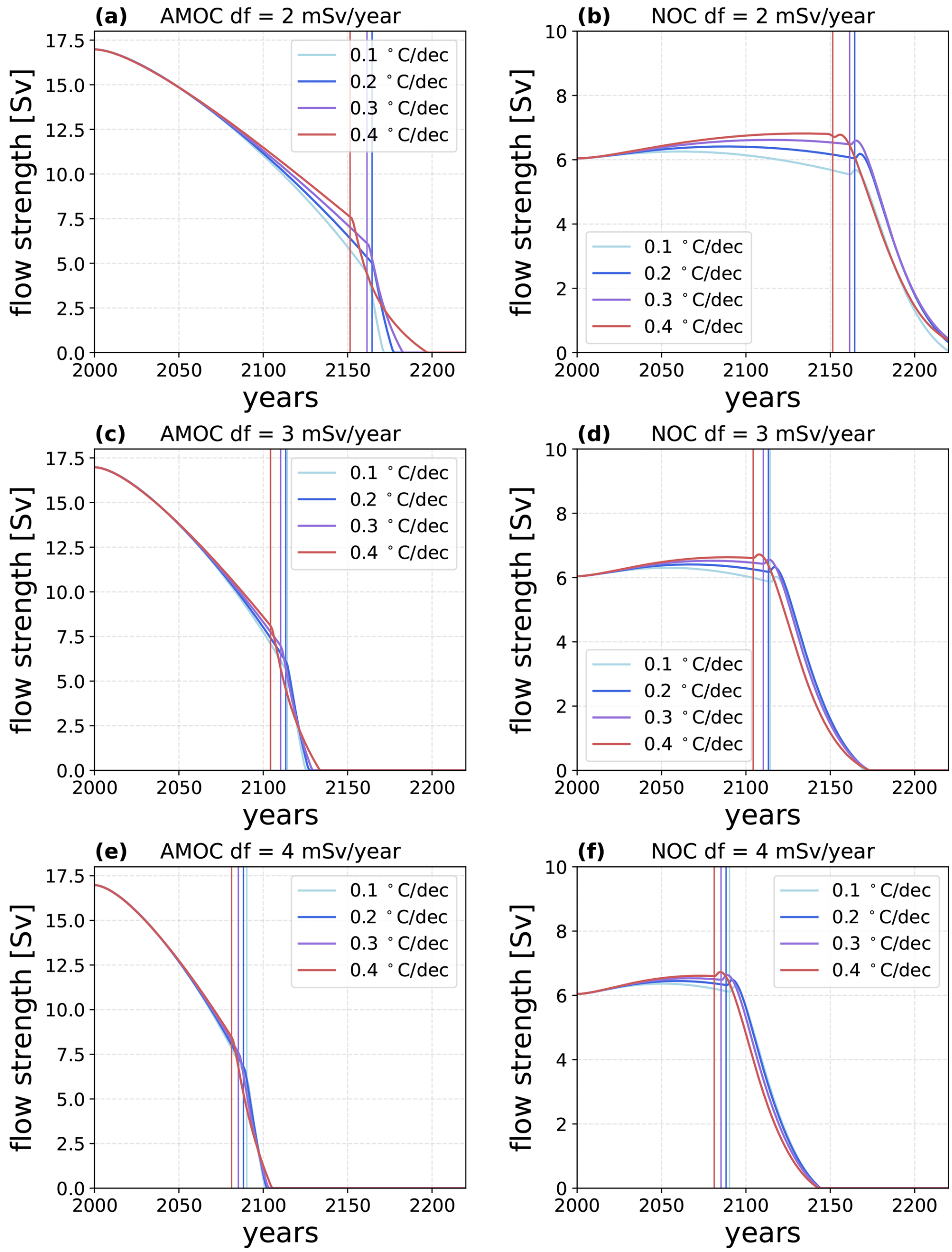


**Figure 3.** Comparison of AMOC and NOC hysteresis for different hosing rates and global warming scenarios in the box model. Grey lines represent the time of convection shut down in the northern Atlantic (AMOC) and Nordic Seas (NOC).

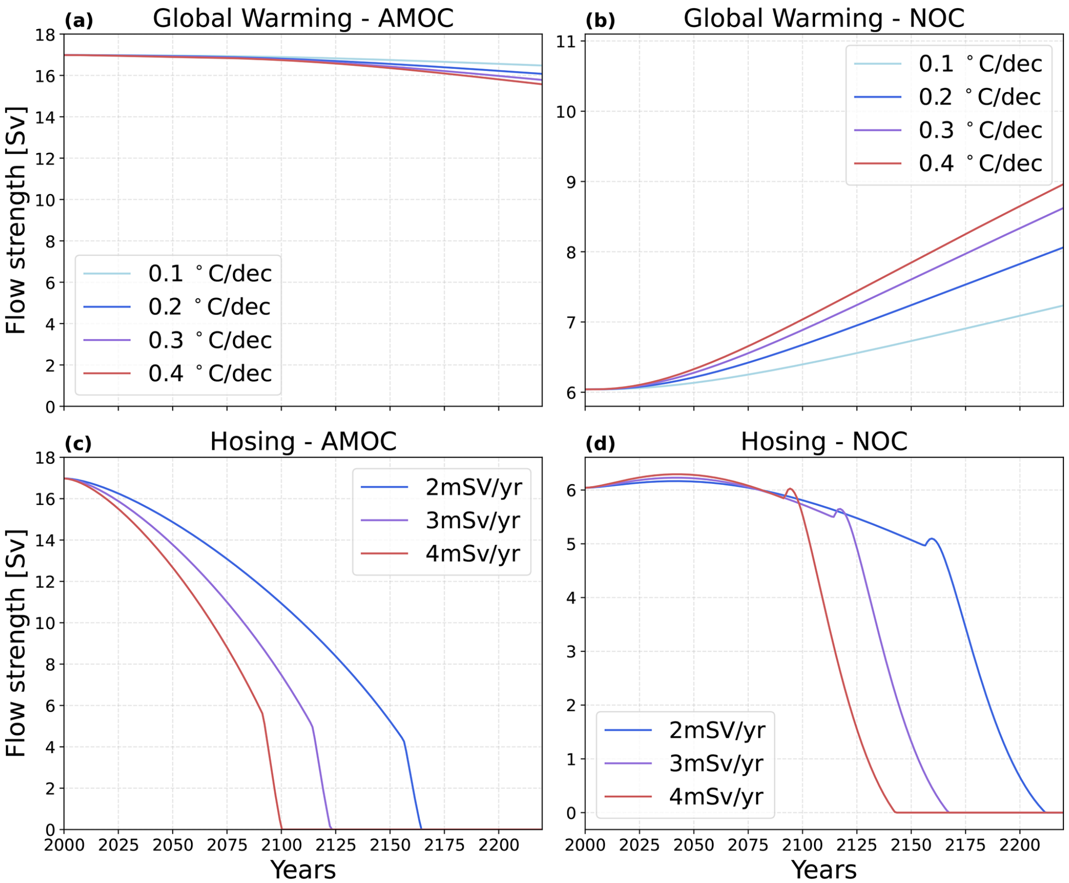


**Figure 4.** **(a)** AMOC under global warming **(b)** NOC under global warming **(c)** AMOC under hosing **(d)** NOC under hosing.

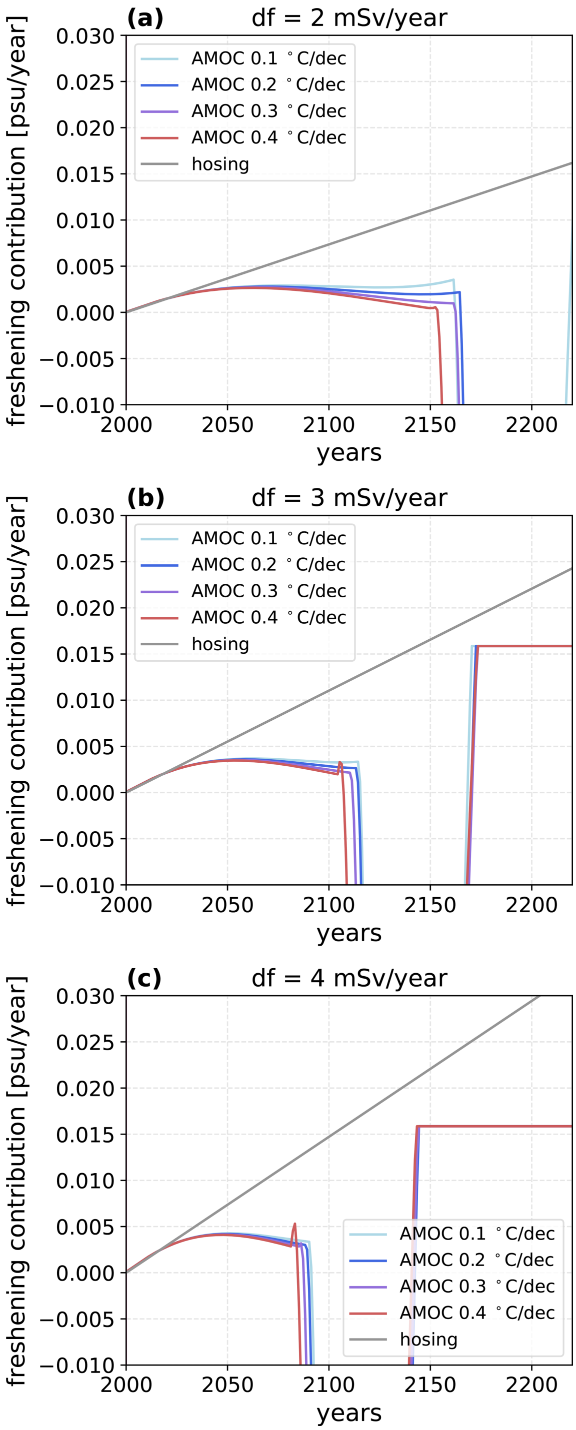


**Figure B1.** Freshening contributions of AMOC and hosing.