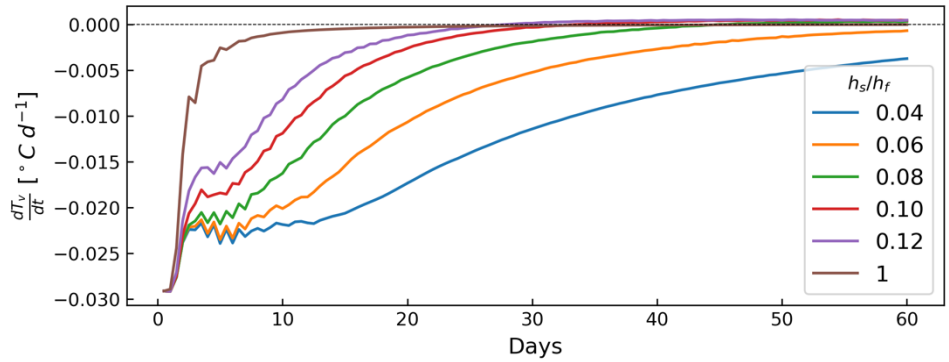

***Fig. R1**: Heat storage change of the control volume bonder by the glacier front and the cross-fjord section S1 in the base case. T_v is the temperature of the control volume.*

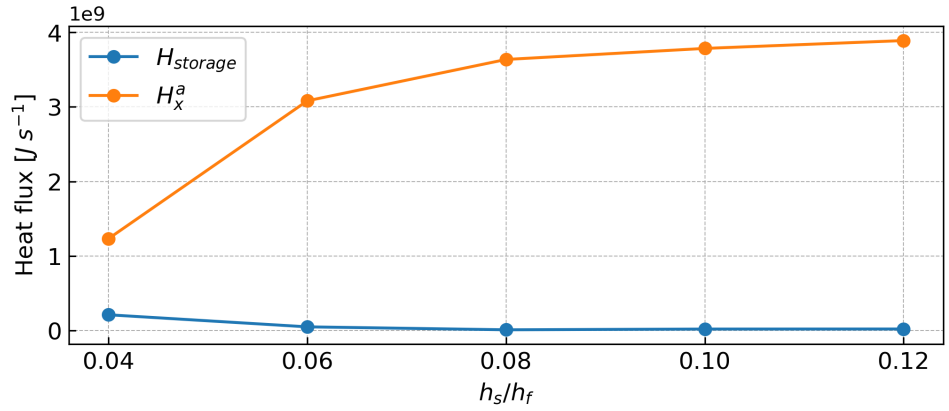

***Fig. R2**: Heat storage ($H_{storage}$) vs. heat transport (H_x^a) for the control volume bonded by the glacier front and the cross-fjord section S1 in the base case. Results are averaged over the last 14 days of simulation.*

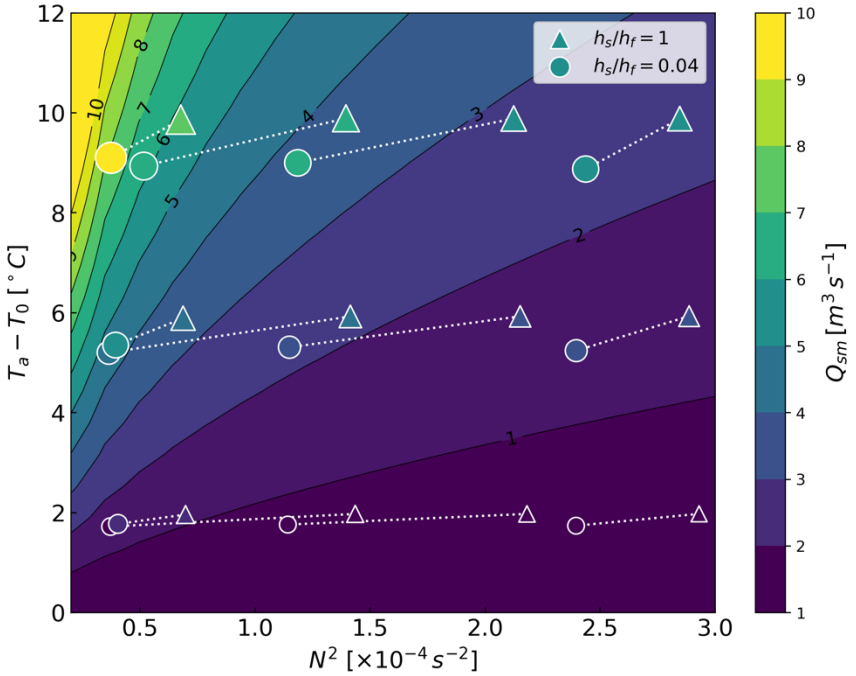

***Fig. R3**: Dependence of submarine melt on fjord stratification and thermal forcing with a constant subglacial discharge of Q_{sg} = 250 $m^3 s^{-1}$. Cases with the same initial temperature (2℃, 6℃, or 10℃) and stratification ($1N_0^2, 2N_0^2, 3N_0^2, 4N_0^2$) are connected by blue dotted lines. The sizes of the markers represent the magnitude of Q_{sm}. The background contours correspond to the scaling of Q_{sm} based on $(T_a - T_0)(N^2)^{-5/8}$ with linear coefficients calculated from the model output. The results of all markers are averaged over the last 14 days of simulations, corresponding to circulation regimes determined by the initial stratification ($1N_0^2$ & $2N_0^2$: Regime I, $3N_0^2$: Regime II, $4N_0^2$: Regime IV).*

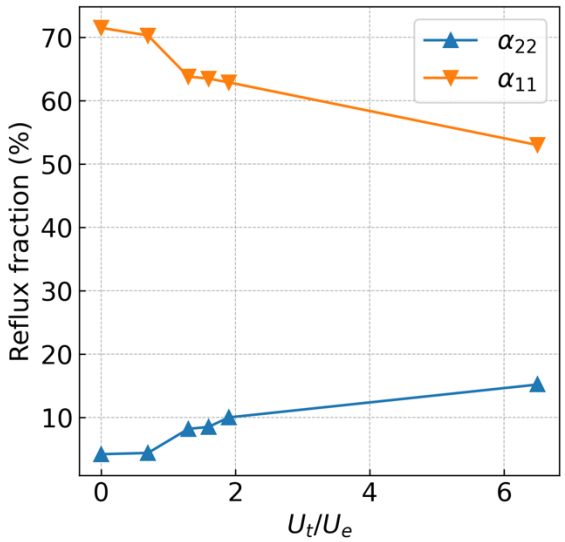

***Fig. R4**: Impact of tidal forcing on the downward (α_{11}) and upward (α_{22}) reflux fractions.*