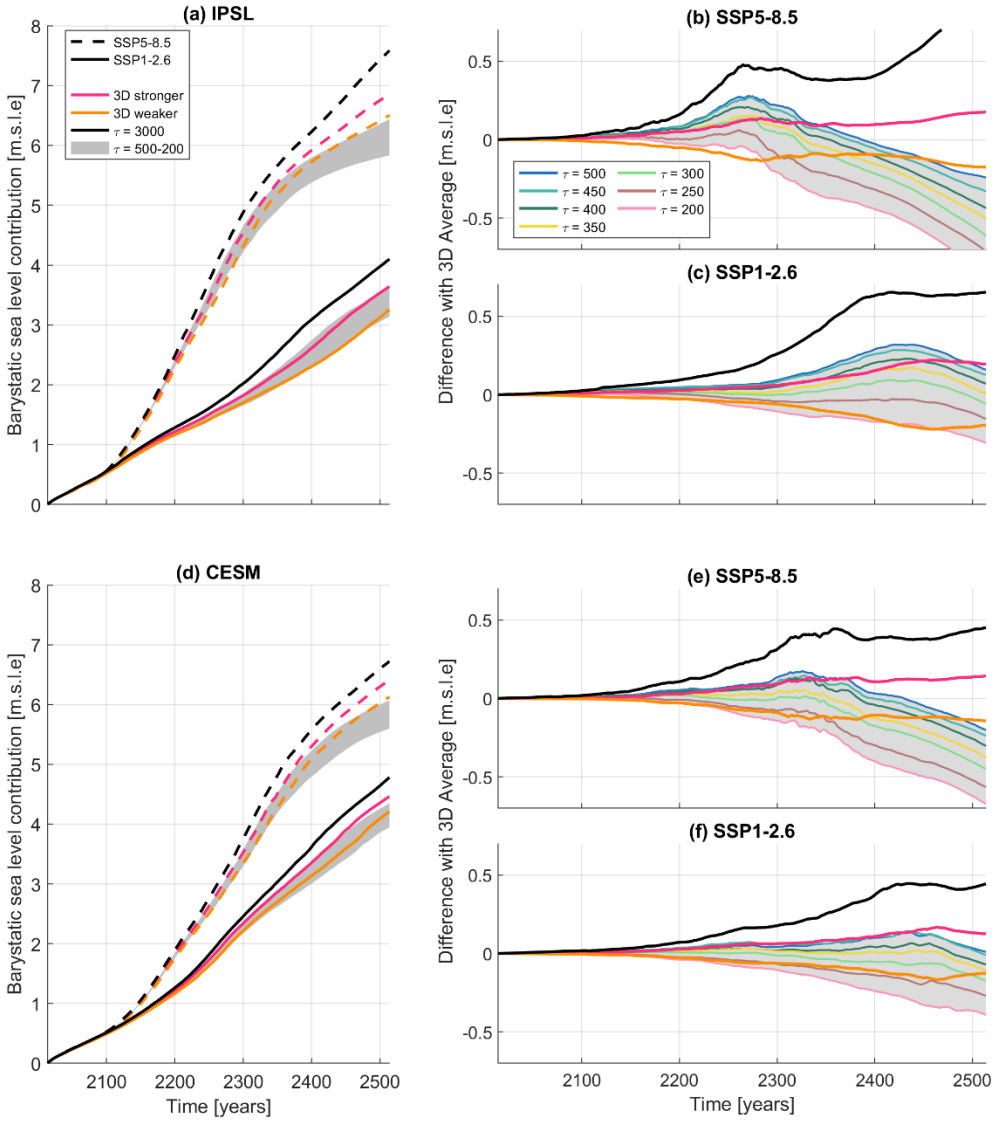
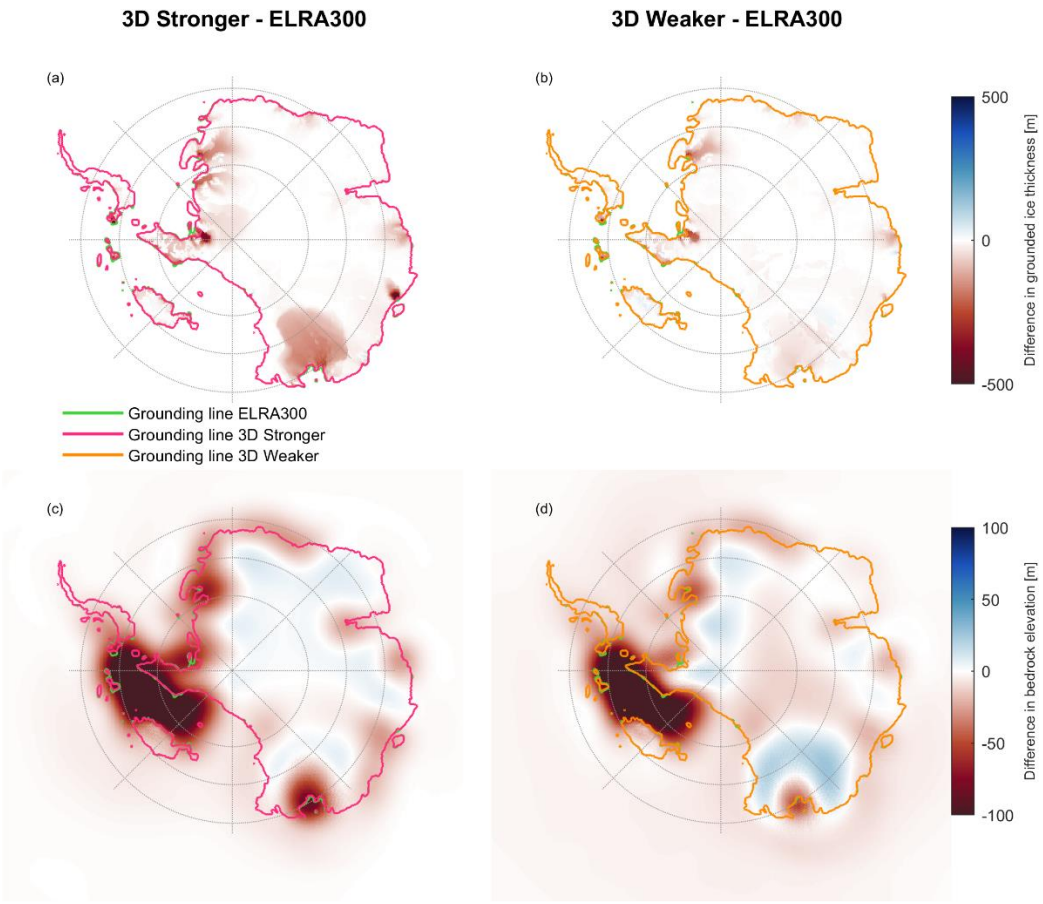
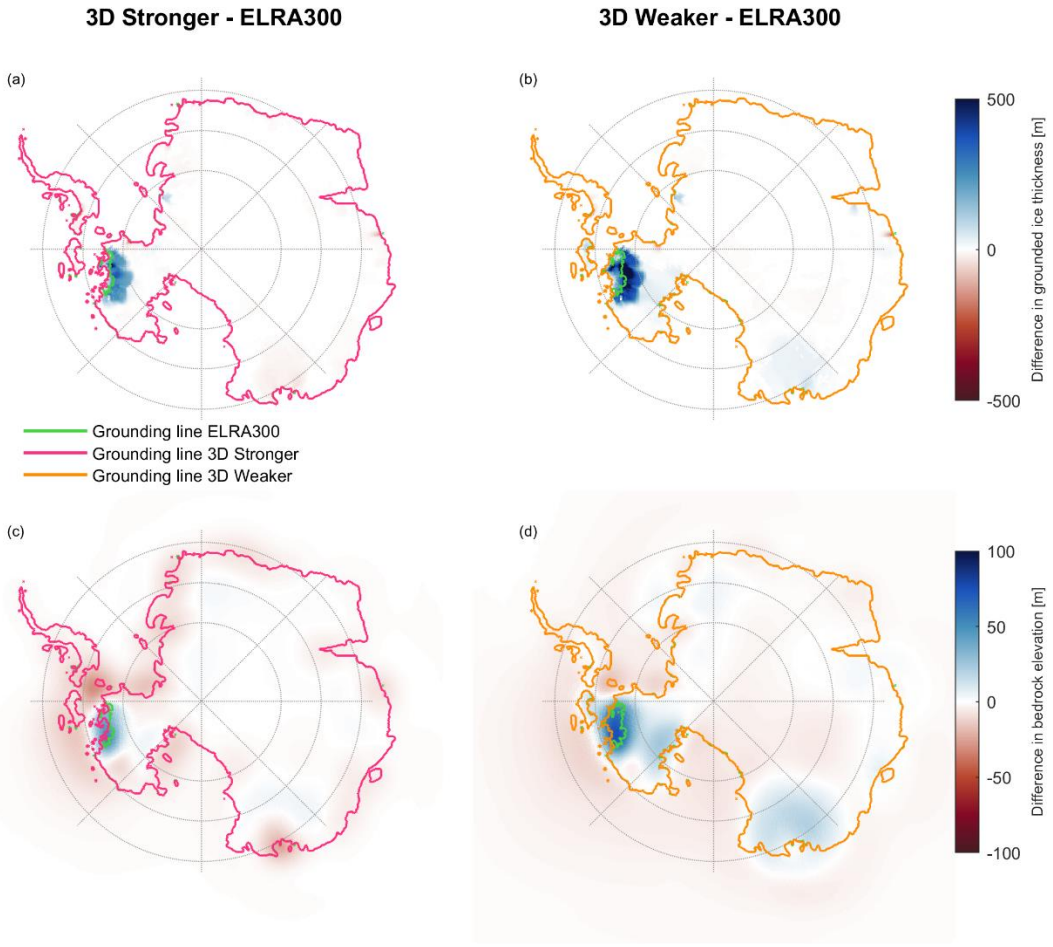
Supplemental materials



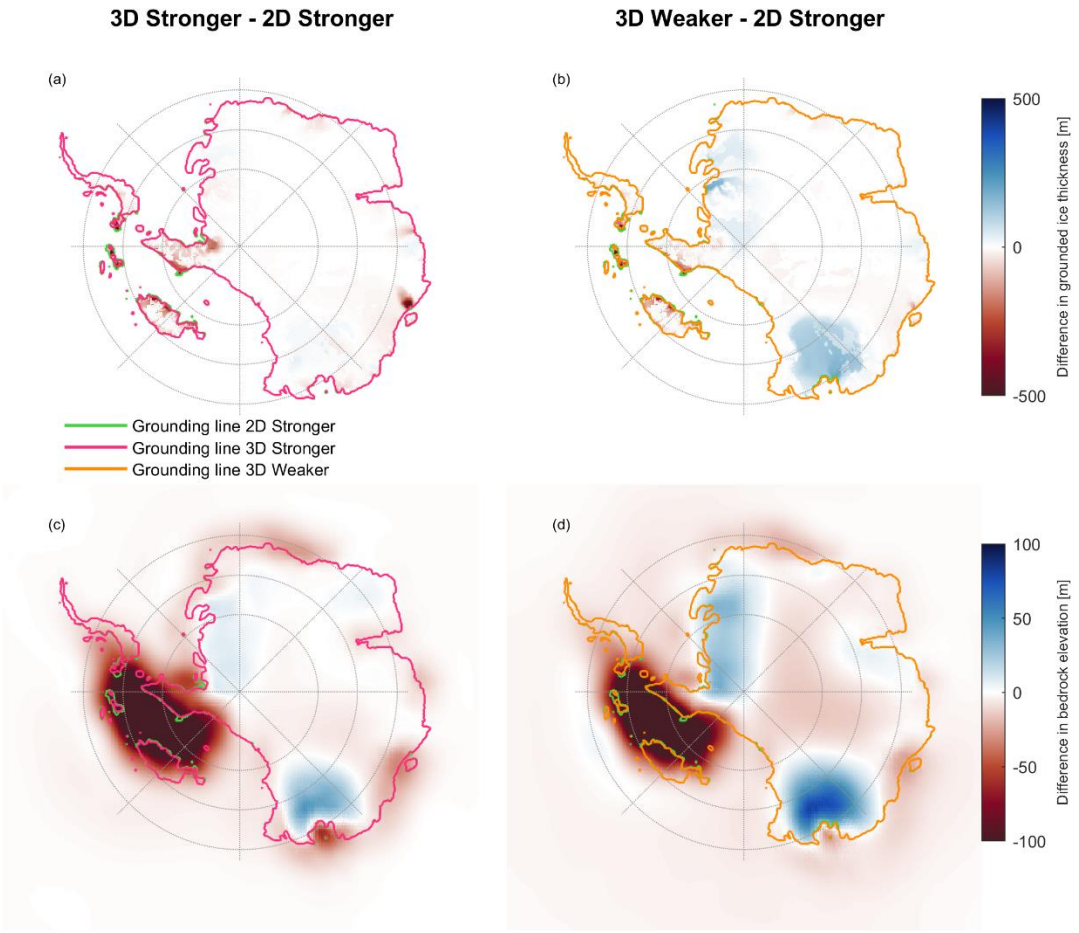
Supplemental Figure 1: The Antarctic ice sheet contribution to barystatic sea level rise using the 3D GIA model and the ELRA model for a high and a low emission scenario and two different climate models, IPSL-CM6A-LR (panel a) and CESM2-WACCM (panel d). Two different Earth structures are applied in the 3D GIA model, a stronger Earth structure and a weaker Earth structure. The relaxation time of the ELRA model is varied between 200 and 500 years, and a reference run of 3000 years is used. The flexural rigidity of $1.92 \cdot 10^{24}$ km·m2 /s2 roughly corresponds to a lithospheric thickness of 60 km. Panels b, c, e, and f show the difference in barystatic sea level contribution between the ELRA model with different relaxation times and the average sea level contribution of the two 3D GIA simulations.



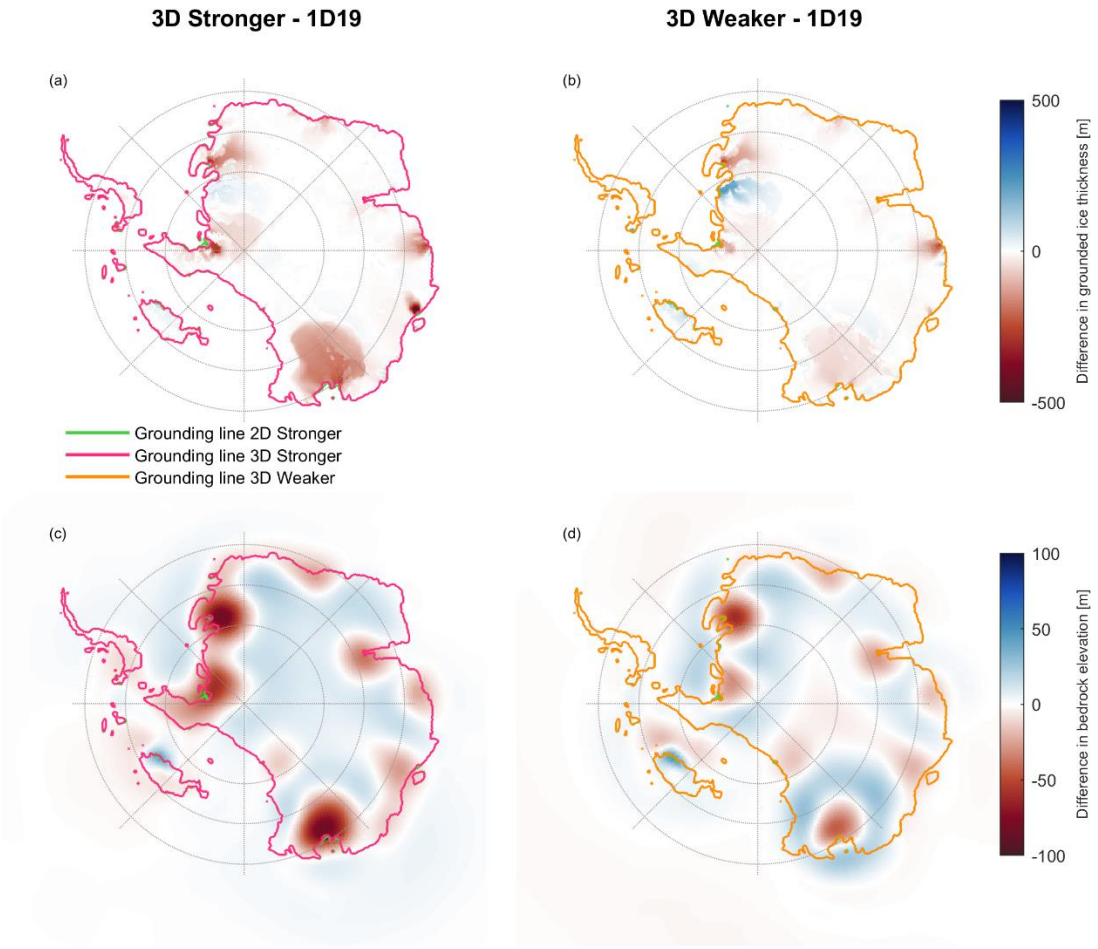
Supplemental Figure 2: Difference in accumulated grounded ice thickness above floatation (panel a and b) and bedrock elevation change (panel c and d) by 2500 between the ELRA model with a relaxation time of 300 years (referred to as ELRA300) and the two 3D Earth structures. Panels a and c correspond to 3D-stronger and panels b and d to 3D-weaker. The climate model IPSL is applied for the high emission scenario SSP5-8.5.



Supplemental Figure 3: Difference in accumulated grounded ice thickness above floatation (panel a and b) and bedrock elevation change (panel c and d) by 2300 between the ELRA model with a relaxation time of 300 years (referred to as ELRA300) and the two 3D Earth structures. Panels a and c correspond to 3D-stronger and panels b and d to 3D-weaker. The climate model IPSL is applied for the high emission scenario SSP5-8.5.



Supplemental Figure 4: Difference in accumulated grounded ice thickness above floatation (panel a and b) and bedrock elevation change (panel c and d) by 2500 between the LVELRA model with the 2D-stronger structure, a flexural rigidity corresponding to a lithospheric thickness of 120km and based on the average viscosity (Eq. 6) and the two 3D Earth structures. Panels a and c correspond to 3D-stronger and panels b and d to 3D-weaker. The climate model IPSL is applied for the high emission scenario SSP5-8.5.



Supplemental Figure 5: Difference in accumulated grounded ice thickness above floatation (panel a and b) and bedrock elevation change (panel c and d) by 2500 between 1D19 and the two 3D Earth structures. Panels a and c correspond to 3D-stronger and panels b and d to 3D-weaker. The climate model IPSL is applied for the high emission scenario SSP5-8.5.