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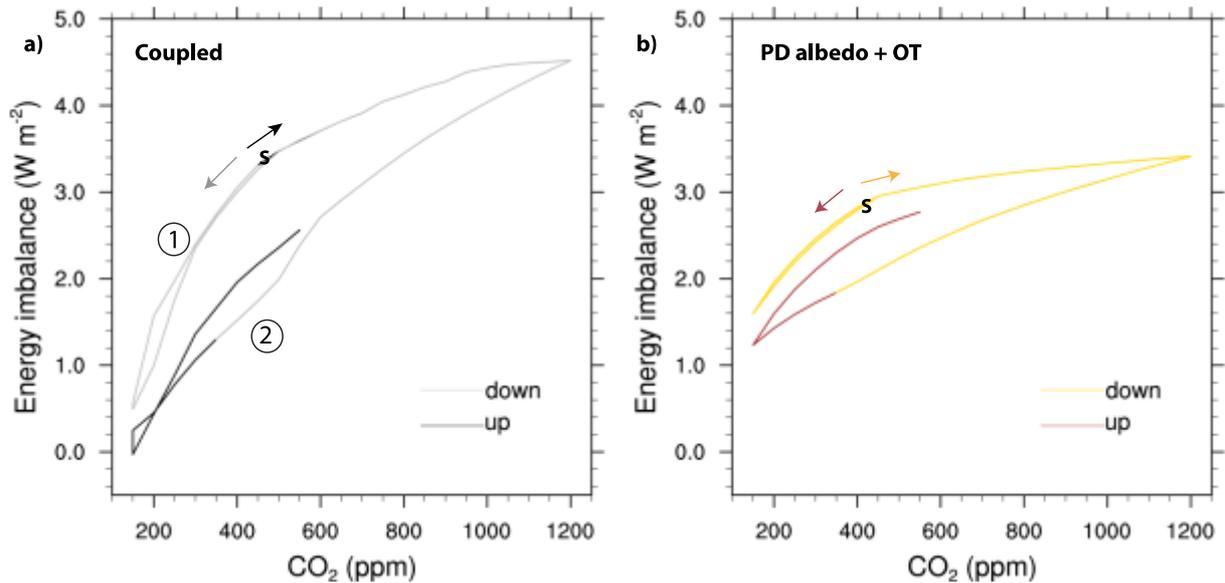
Supplement of

The influence of ice sheets on temperature during the past 38 million years inferred from a one-dimensional ice sheet–climate model

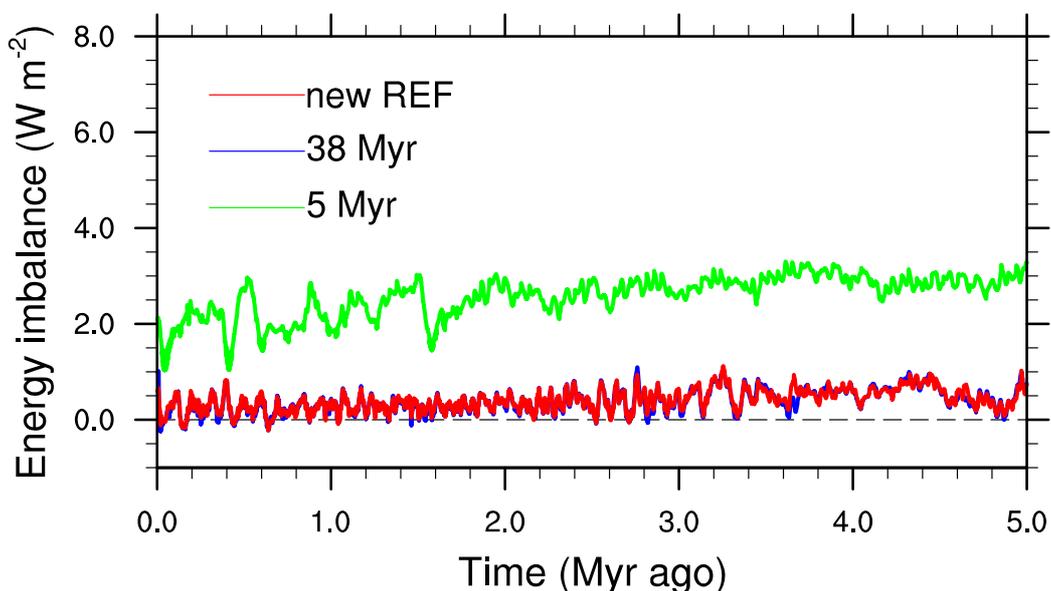
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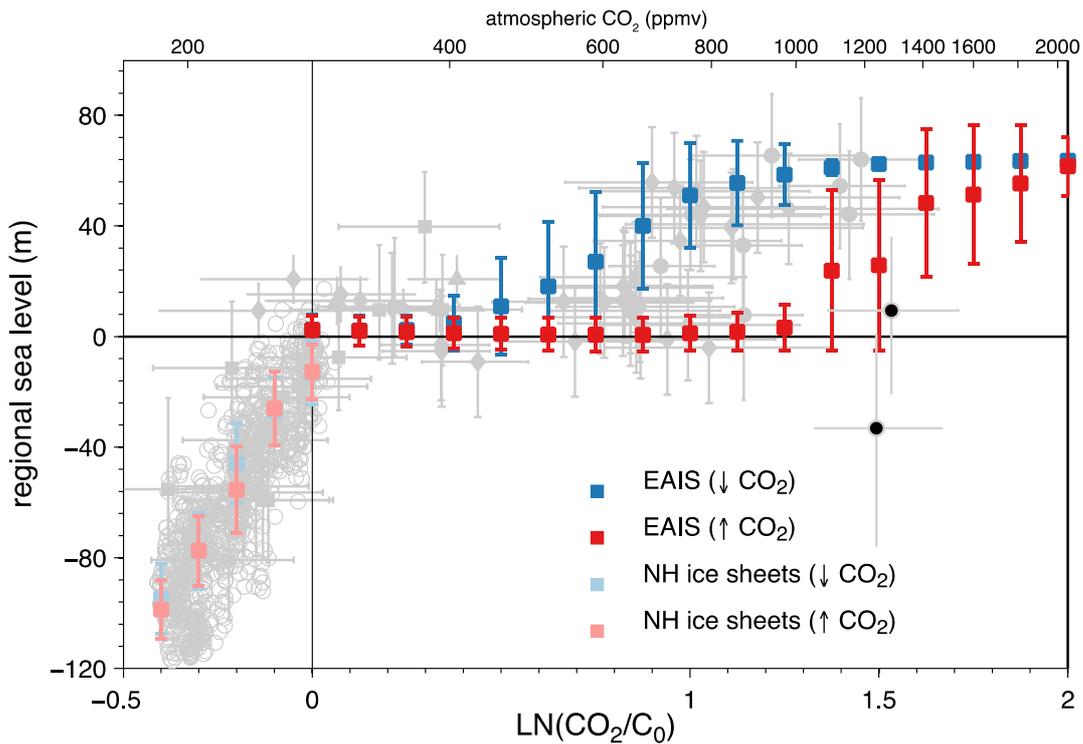
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Supplementary Figure 1: Relation between CO_2 and the globally averaged energy imbalance at the top of the atmosphere in the equilibrium runs. In (a), the fully coupled model output is shown. The starting point of the simulation at 450 ppm CO_2 is marked by an S, and the consequent initial direction for both runs is marked by coloured arrows. The black line shows the up run, where CO_2 is increased first, the grey line shows the down run, where CO_2 is decreased first. At high CO_2 levels, the black line is overlaid by the grey line. Initially, the down run goes into branch 1. After returning from high CO_2 values, both runs go into branch 2. In (b) the output with PD albedo and ocean overturning strength (brown/gold) are shown.



Supplementary Figure 2: The globally averaged energy imbalance at the top of the atmosphere over the past 5 Myr. Shown are the 5-Myr run from Stap et al. (2016a) (green), the extended 38-Myr run from Stap et al. (2016b) (blue), and the new reference run with altered cloud optical thickness (red). The 5-Myr run is in branch 1 of Suppl. Fig. 1, the 38-Myr run and the new reference run are in branch 2.



Supplementary Figure 3: Relation between the logarithm of CO₂ divided by the PI value of 280 ppm and ice-volume-equivalent sea level anomalies with respect to PI for the GCM-ISM simulations of Gasson (2013). The results are separated for ascending (red) and descending (blue) CO₂ concentrations and for runs with the Northern Hemispheric ice sheets (NH ice sheets) or the East Antarctic ice sheet (EAIS) coupled. Grey and black dots are the data of Foster and Rohling (2013). Figure taken from Gasson (2013) with permission.