

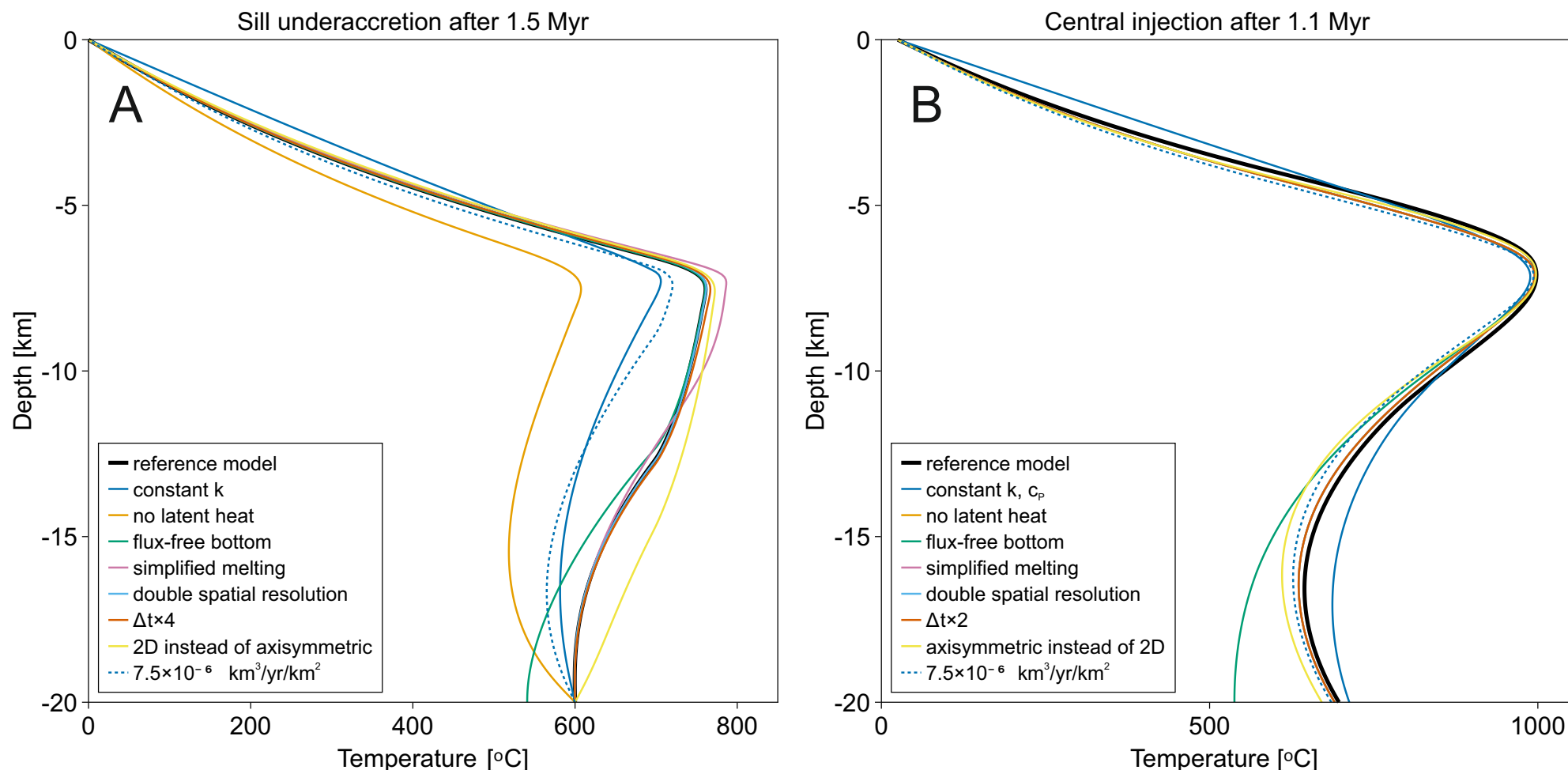


Figure S1. Results of simulations in which we systematically changed a single model parameter, starting from the reference simulations shown in Fig. 11 (black curves). Left side are for constant k : employing a constant thermal conductivity (of $k = 3.3 \text{ W/K/m}$); constant k, c_p : employ a constant heat capacity (1000 J/kg/K); no latent heat: deactivate latent heating; flux free bottom: zero flux, instead of constant temperature, bottom boundary condition; simplified melting: employ a simpler melting curve following Simpson (2017), rather than a 4th order parameterisation; double spatial resolution: double the numerical resolution in both directions; $\Delta t \times 2$, $\Delta t \times 4$: increased timestep; 2D instead of axisymmetric: solving the diffusion equation in 2D rather than in axisymmetric geometry; axisymmetric instead of 2D: similar but using axisymmetric geometry; $7.5 \times 10^{-6} \text{ km}^3/\text{yr}/\text{km}^2$: employing a smaller input flux.