Supplementary Information to “Thermo-mechanical numerical modelling of the South American subduction zone: a multi-parametric investigation”

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In this Supplementary Information we present a figure showing the evolution of surficial velocities at a higher Rayleigh number of $\sim 6 \times 10^7$ (Fig. S1) and a figure testing the spatial resolution of the models using the subducting plate and trench retreat velocities (Fig. S2).
**Figure S1:** Surficial kinematics for model investigating the effect of increasing the Rayleigh number (~6 × 10^7 instead of 4.3 × 10^7 in the reference model). For more detail the reader is referred to the caption of Fig. 7 and to section 4.5.
Figure S2: Surficial kinematics for models testing spatial resolution. The continuous lines indicate $V_{SP}$ and the dashed lines $V_T$. For more detail the reader is referred to the caption of Fig. 7 and to section 4.6.