



Subduction initiation along the inherited weakness zone at the edge of a slab: a parameter study

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The propagation of a tear along the edge of a subducting slab, referred to as a STEP, can act as a weakened zone in the lithosphere and therefore it might be suitable as a zone where subduction can be initiated. This was recently studied by Baes et al. (2010, in press). These models are further improved to make them useful for a larger range of tectonic settings. The focus lies thereby on a plate contact between a continental and an oceanic lithosphere which is characterised by a low viscosity channel. First, the models are adapted by including the effect of thermal conduction. This makes the model applicable for smaller convergence rates between the overriding and the downgoing plate. Since the rheology of the lithosphere is of great importance, a more detailed structure of the continental crust is implemented to make the models more realistic. This is therefore a first step to compare these numerical models with tectonic settings such as the NW African and south Tyrrhenian margins.