Dynamics of Slabs: Insight from Numerical Eexperiments

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We analyze the long-term dynamics of visco-elasto-plastic slab falling into a passive uniform or viscous stratified mantle in a self-consistent way by means of the results of numerical experiments with the aim to clarify the dynamics of trench retreat and to identify the factors that influence the process. We perform a comprehensive analysis of slab rheology and influence on slab dip and trench retreat. Particular emphasis is placed on the interaction with the 670 km discontinuity.