



Subduction of continental lithosphere below an ocean after tectonic inversion

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The full Wilson cycle includes the birth (rifting), the active life (drifting), and the destruction and death (subduction and continental collision, respectively) of oceanic crust/lithosphere. Whereas the subduction of oceanic lithosphere is driven by its negative buoyancy, its continental counterpart remains floating on the asthenospheric mantle in isostatic equilibrium due to several tens of kilometer thick “light” crust.

Here, I will present numerical models of full tectonic inversion leading to the less expected subduction of continental lithosphere below an undeformed ocean. Subduction of continental lithosphere leads to the formation of a crustal scale continental fold-and-thrust belt. The experiments fail to explain any observed type of subduction and strain evolution along subduction zones and, once more, put the finger in the wound of needing mechanical weaknesses to initiate oceanic subduction at the “right” places.