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Linking microplate dynamics to the seismic cycle of crustal faults

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Assessing the seismic hazard of crustal faults, and in particular their ability to generate large (magnitude Mw>7) earthquakes, is typically done by combining geodetic observations collected in the vicinity of faults with modelling of the co- and post-seismic deformation. Here we explore whether it is feasible to perform such an assessment using microplate dynamics. We present the theory that underlines such an approach, as well as preliminary results from synthetic numerical experiments. The latter ones aim at i) detecting the main features of the kinematic signals associated with the charge/discharge of seismic energy along shallow crustal faults bounding microplates, and ii) compare them with the typical uncertainties associated with real geodetic measurements.