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earthquake ruptures, and their effect on seafloor displacements.





Splay fault rupture dynamics and off-fault deformation constrained by geodynamic subduction modelling

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Using optimally orientated splay fault geometries from the SC model, we show that multiple splay faults could rupture simultaneously during an earthquake. Splay faults can be activated by the main rupture front, or stress changes resulting from dynamic stress transfer after the main rupture front passed and reflected waves from the surface and lithological constrasts. Rupture on multiple splay faults results in **distinct peaks in the vertical surface** splacements with smaller wavelength and larger ampli-