

# Continental rift evolution (animation)

Continental rift evolution—from inception to breakup—accounting for surface processes and tectonic deformation. Shown is the evolution of a regional 3-D model covering upper crust, lower crust, and mantle lithosphere atop an asthenospheric layer. The rift fault network evolves through five major phases: (a) distributed deformation and coalescence, (b) fault system growth, (c) fault system decline and basinward localization, (d) rift migration, and (e) breakup. Sediments not only interact with tectonic deformation but they also record subsidence, block rotation, and rift migration. The visualisation is based on coupled numerical models of geodynamics (ASPECT) and landscape evolution (FastScape). The animation is based on the reference model of Neuharth et al., 2022.

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- Specific citation: *This animation by Sascha Brune and Derek Neuharth is based on Neuharth et al. (2022) and available via the open-access s-ink.org repository.*
- Related reference: Neuharth, D., Brune, S., Wrona, T., Glerum, A., Braun, J., & Yuan, X. (2022). Evolution of Rift Systems and Their Fault Networks in Response to Surface Processes. *Tectonics*, 41(3), e2021TC007166. <https://doi.org/10.1029/2021TC007166>

➡ Latest version

