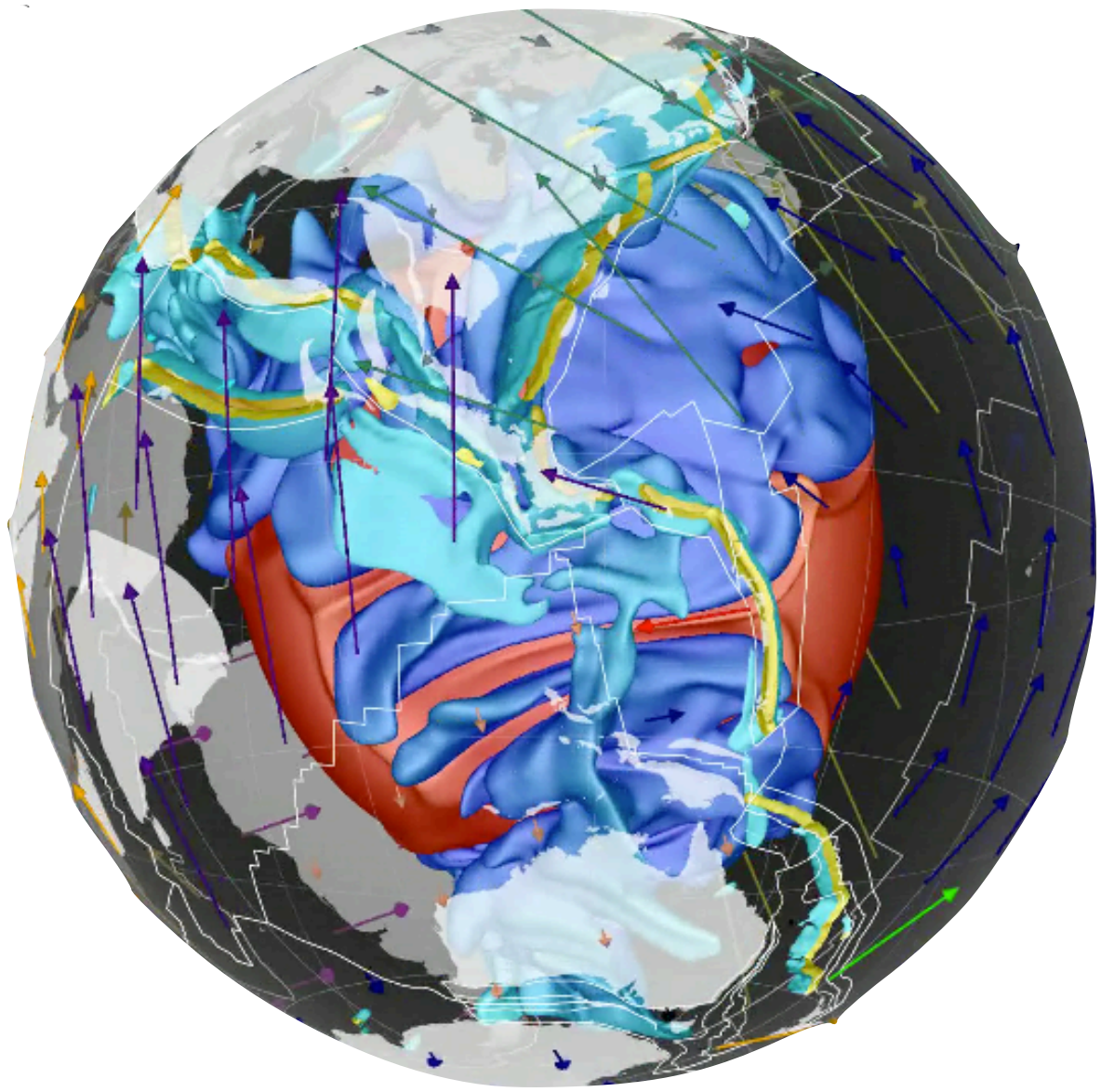
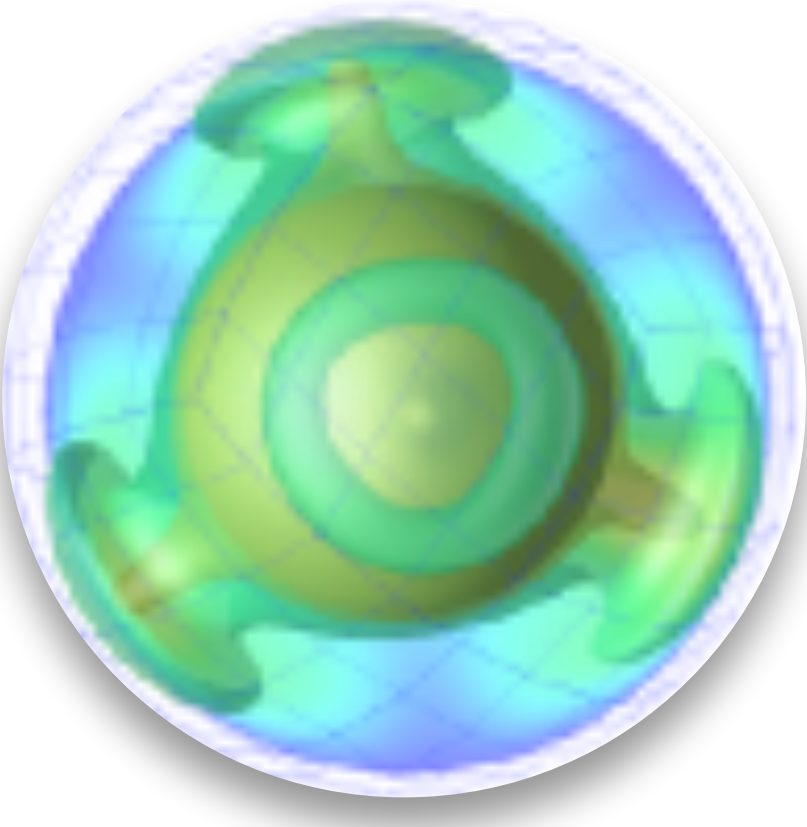
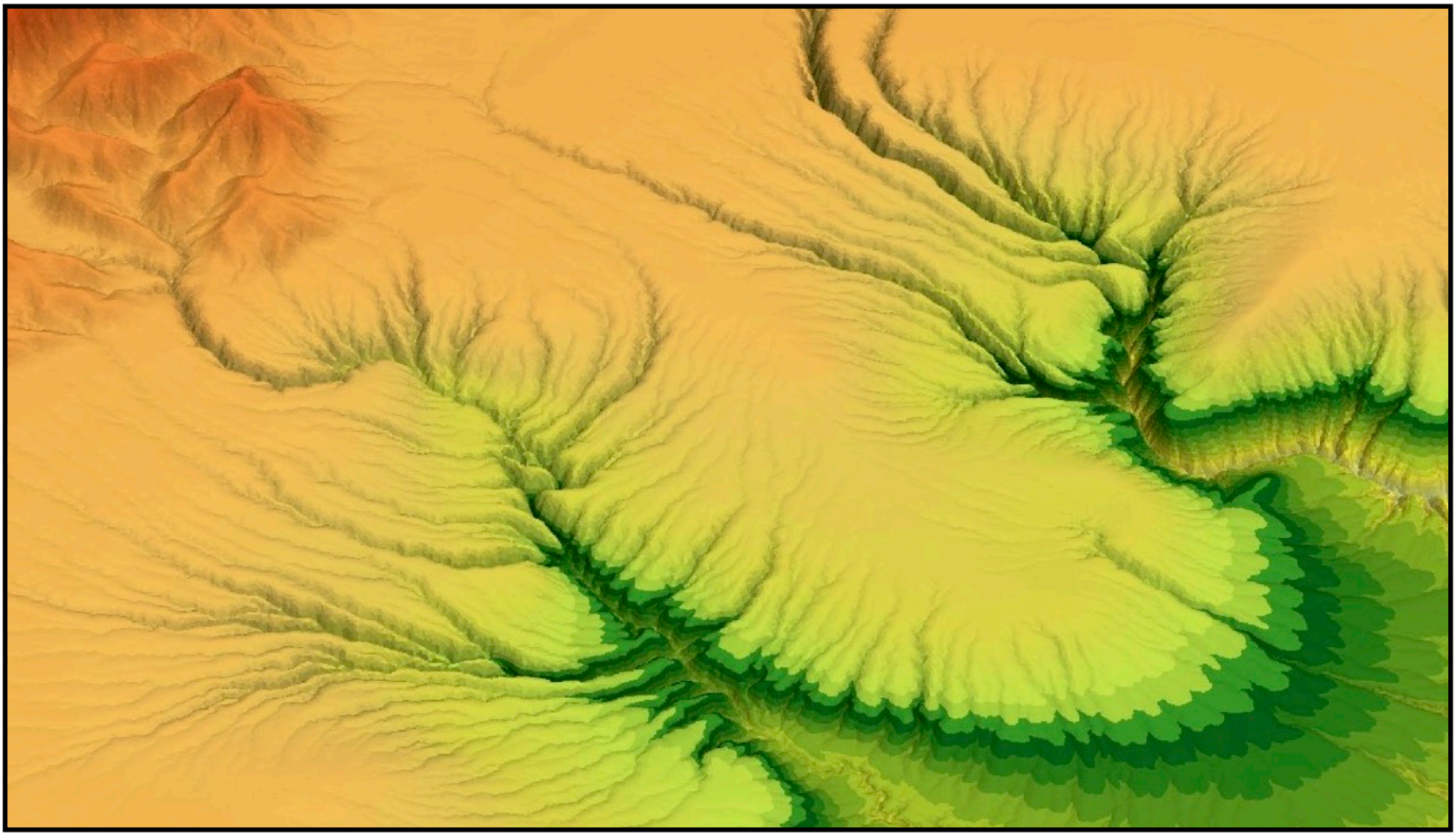


Our Experimental Virtual Earth with SPM

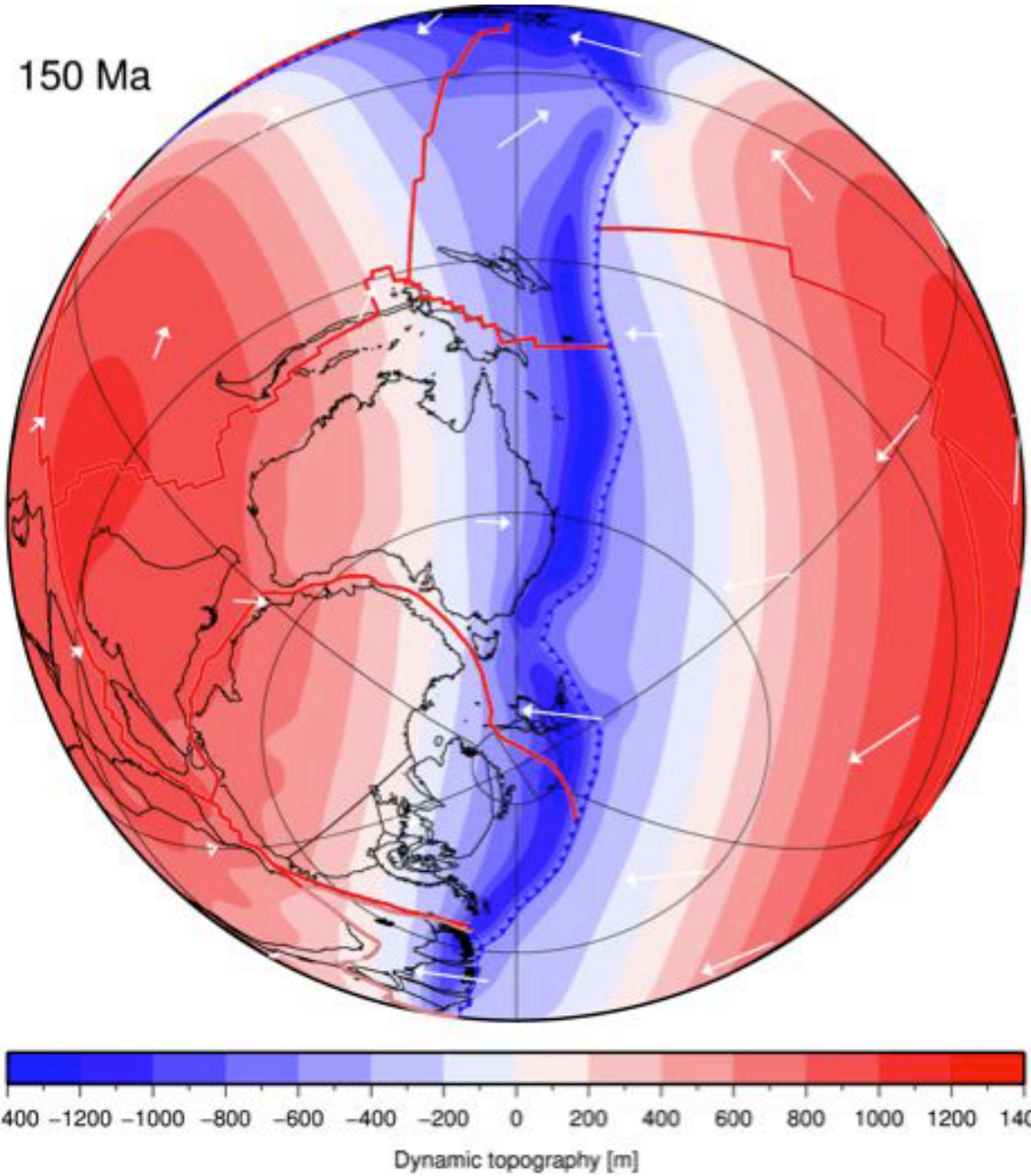


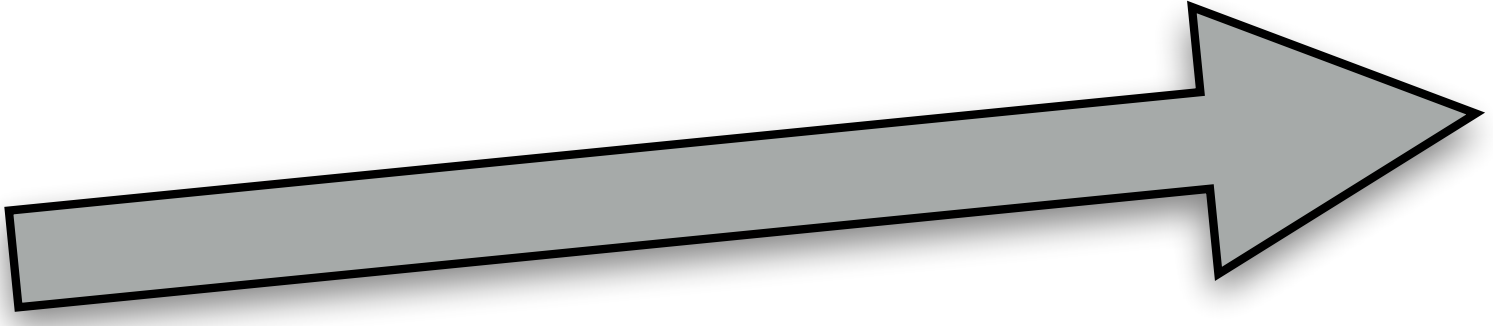

CitcomS

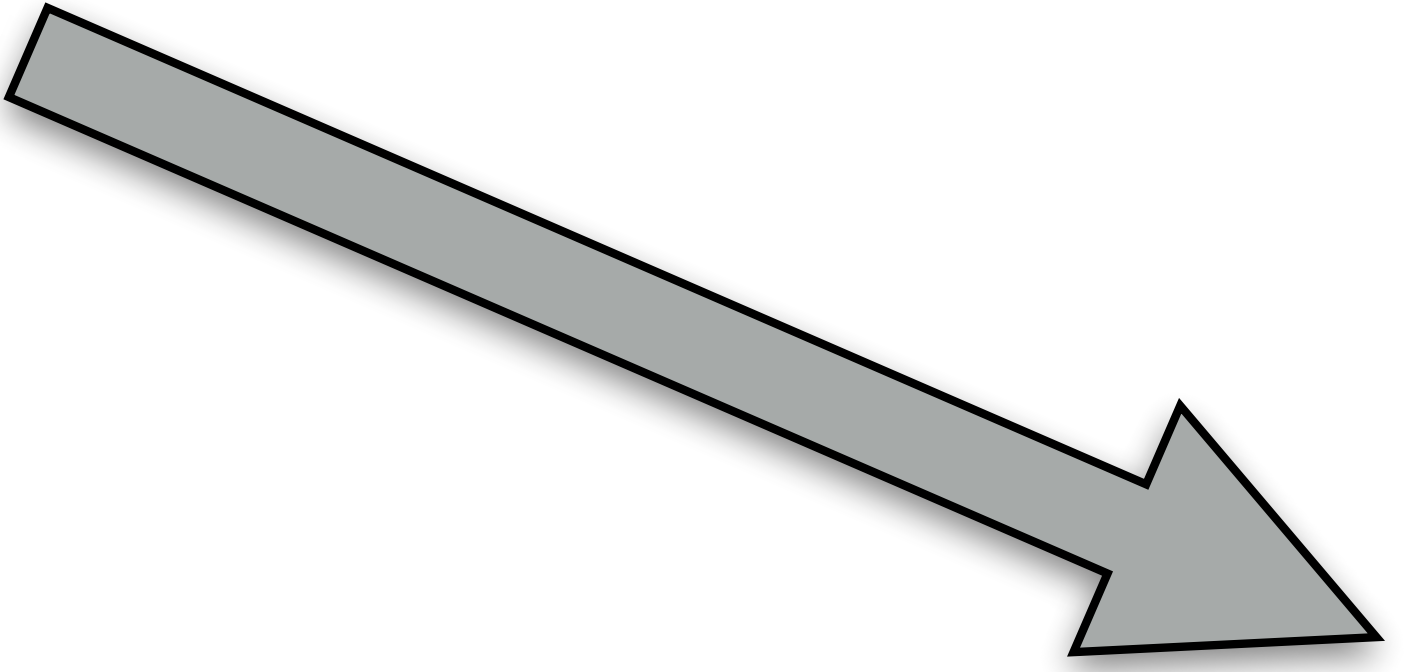


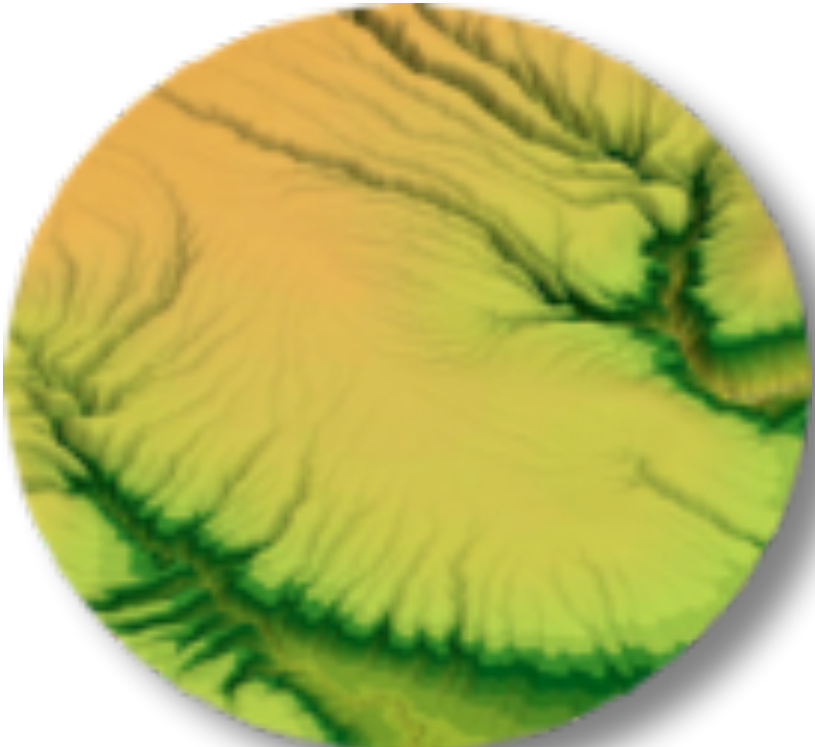
Badlands

- precipitation
- paleo-topography +
- sediment thickness
- paleo-environments
- denudation rate
- sea-level


150 Ma
−1400 −1200 −1000 −800 −600 −400 −200 0 200 400 600 800 1000 1200 1400
Dynamic topography [m]



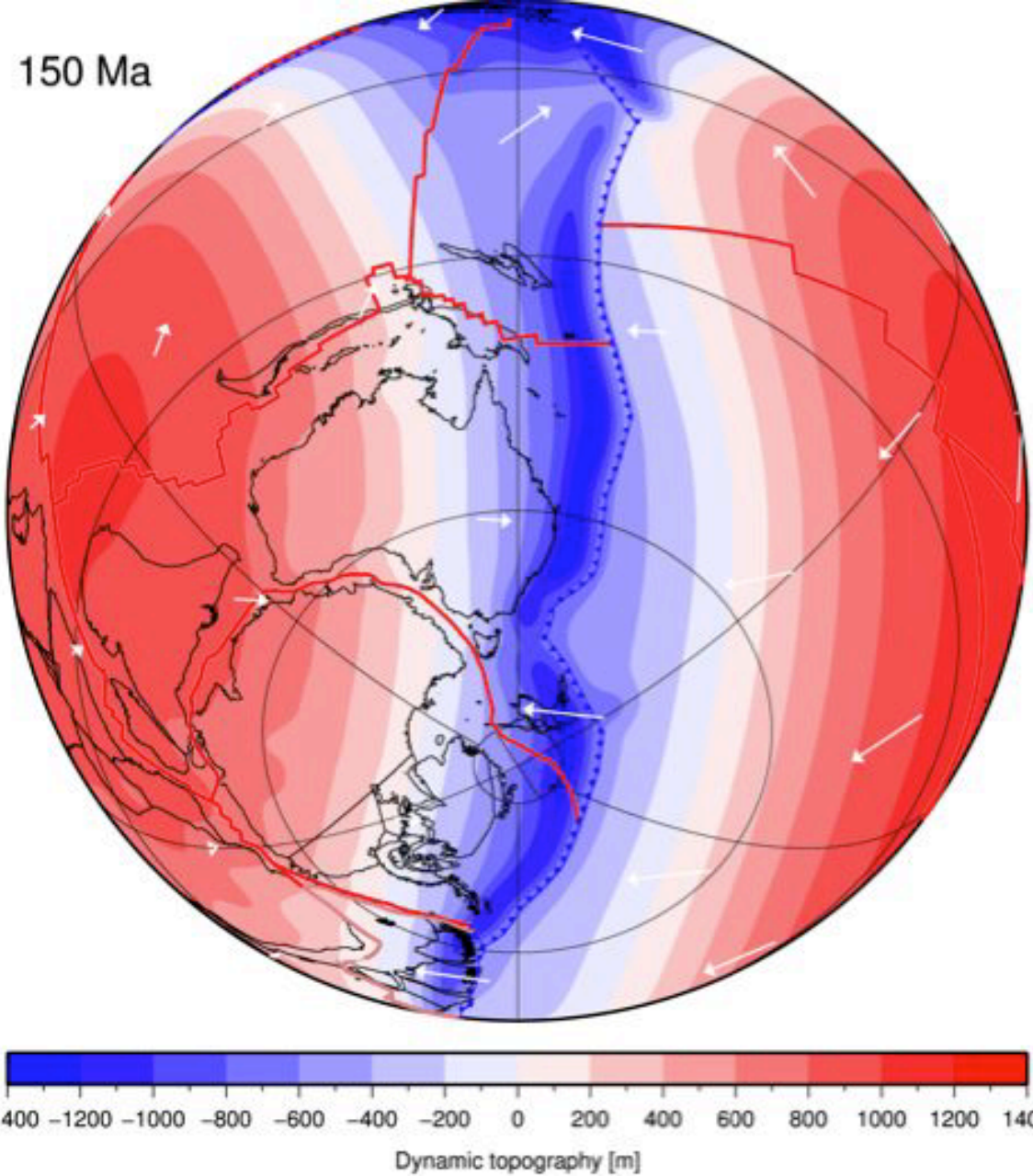




Dynamic topography

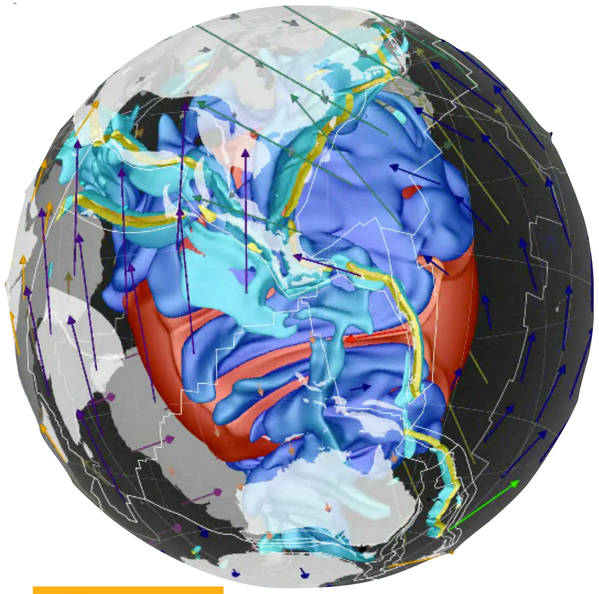
Mantle convection

Landscape evolution


150 Ma
−1400 −1200 −1000 −800 −600 −400 −200 0 200 400 600 800 1000 1200 1400
Dynamic topography [m]

Our Experimental Virtual Earth with SPM

Mantle convection



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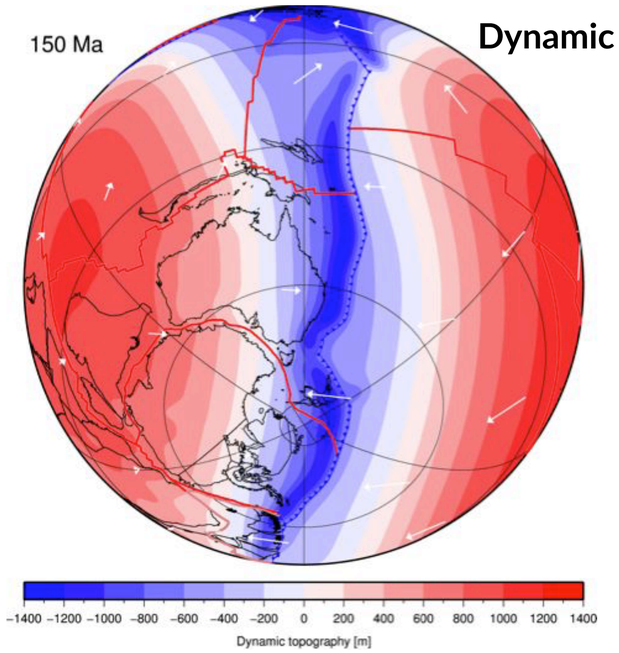
Dynamic topography



- precipitation
- paleo-topography
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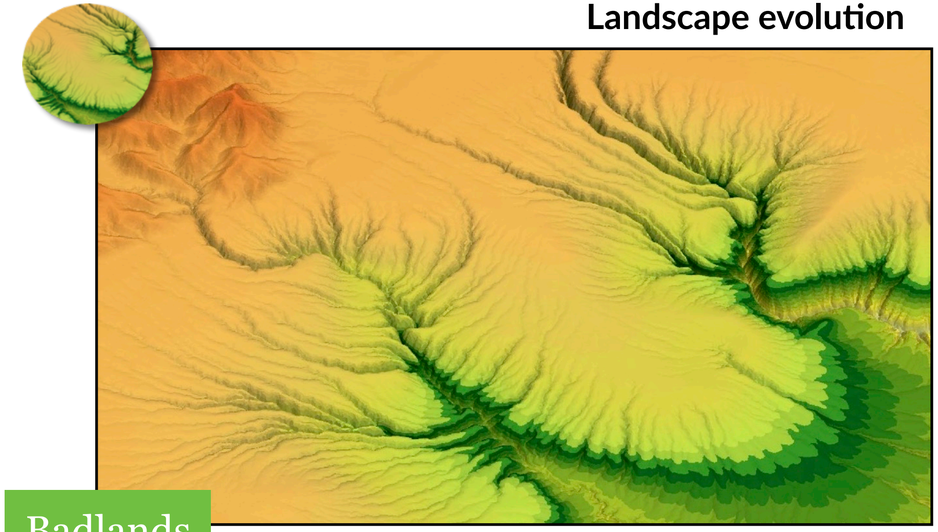
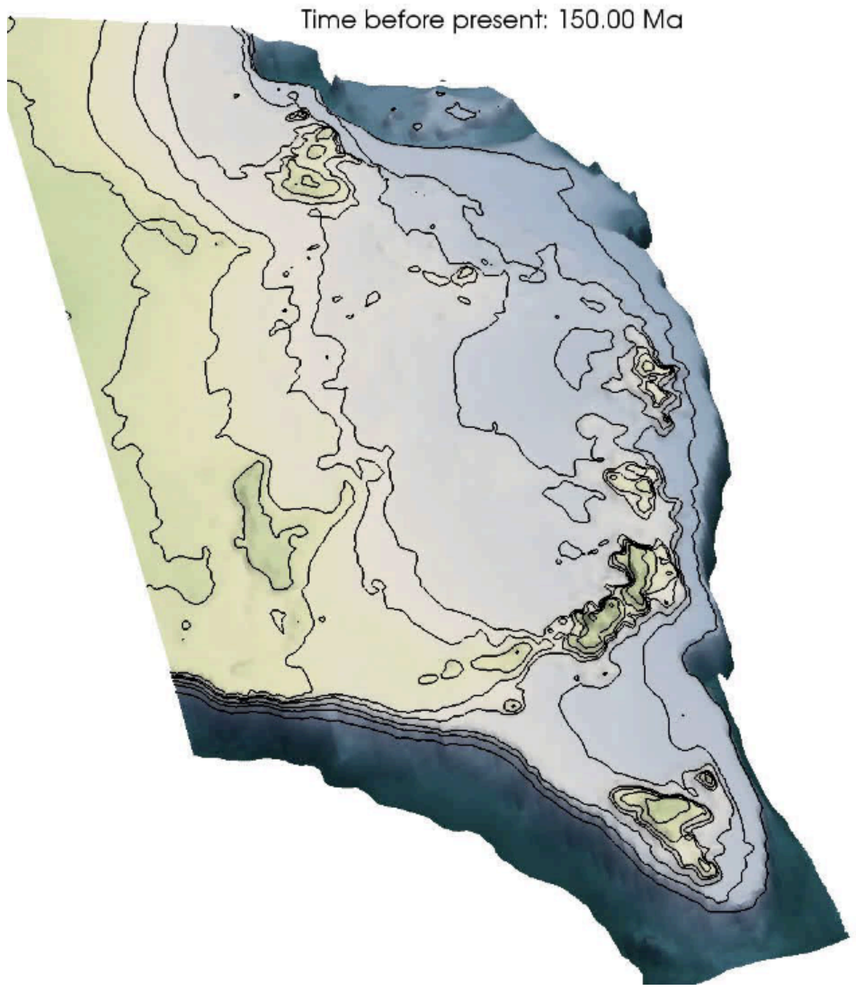
+

Landscape evolution



Badlands

Model forcing parameters



- Initial condition at 150 Ma (constructed iteratively by a synthesis of published paleogeography, present-day topography, sed. thickness, eustasy and dynamic topography)
- Mantle-convection-driven dynamic topography through time
- Eustatic sea-level change
- Latitude-dependent precipitation