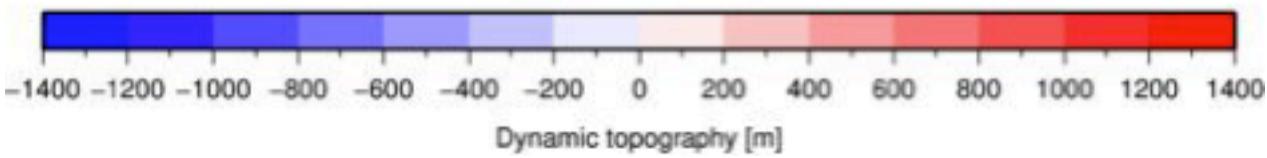
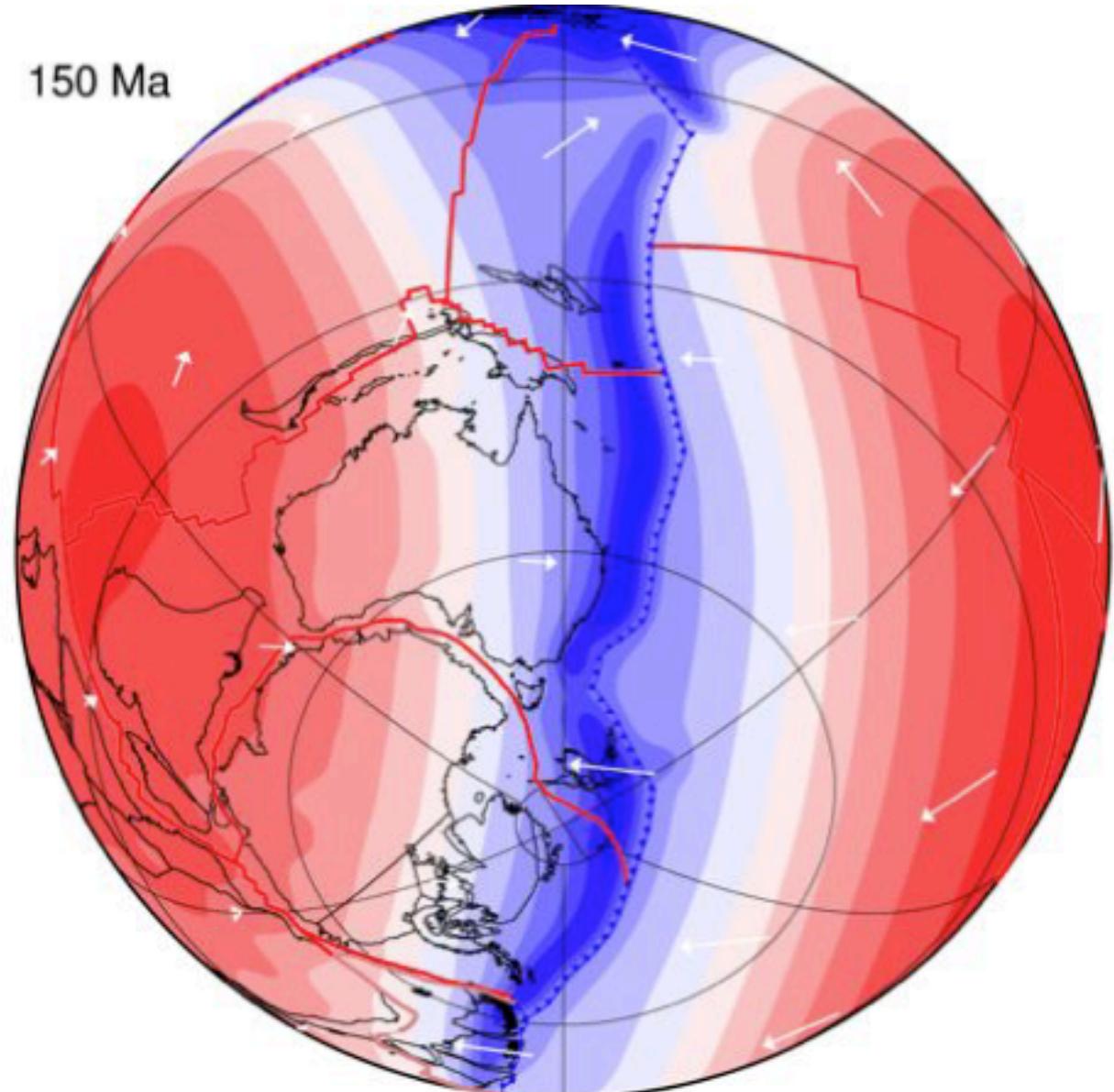
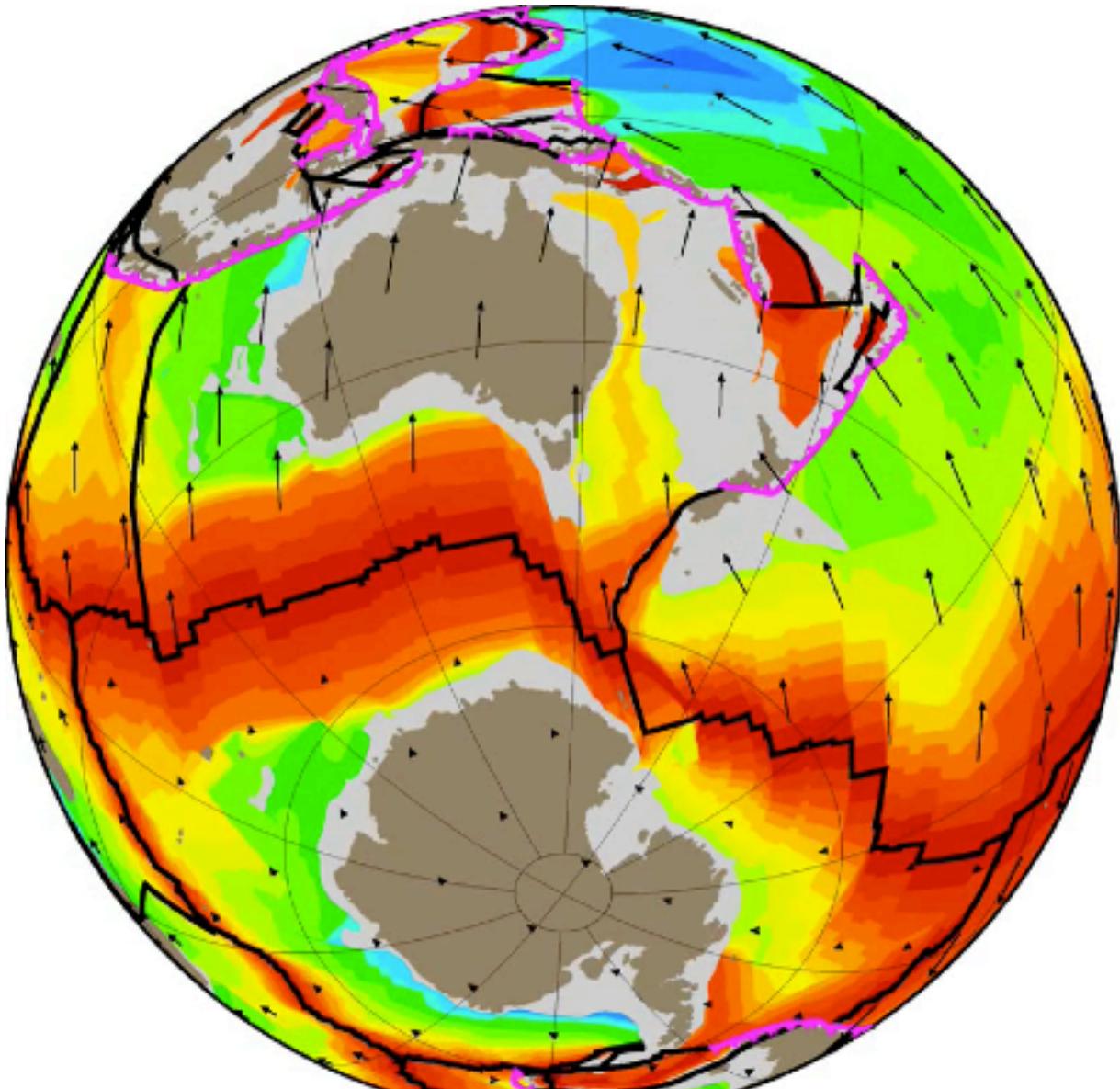
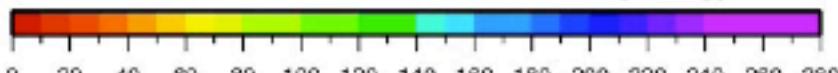


150 Ma





0 Ma



Age of Oceanic Crust (Myr)

Virtual tour rental

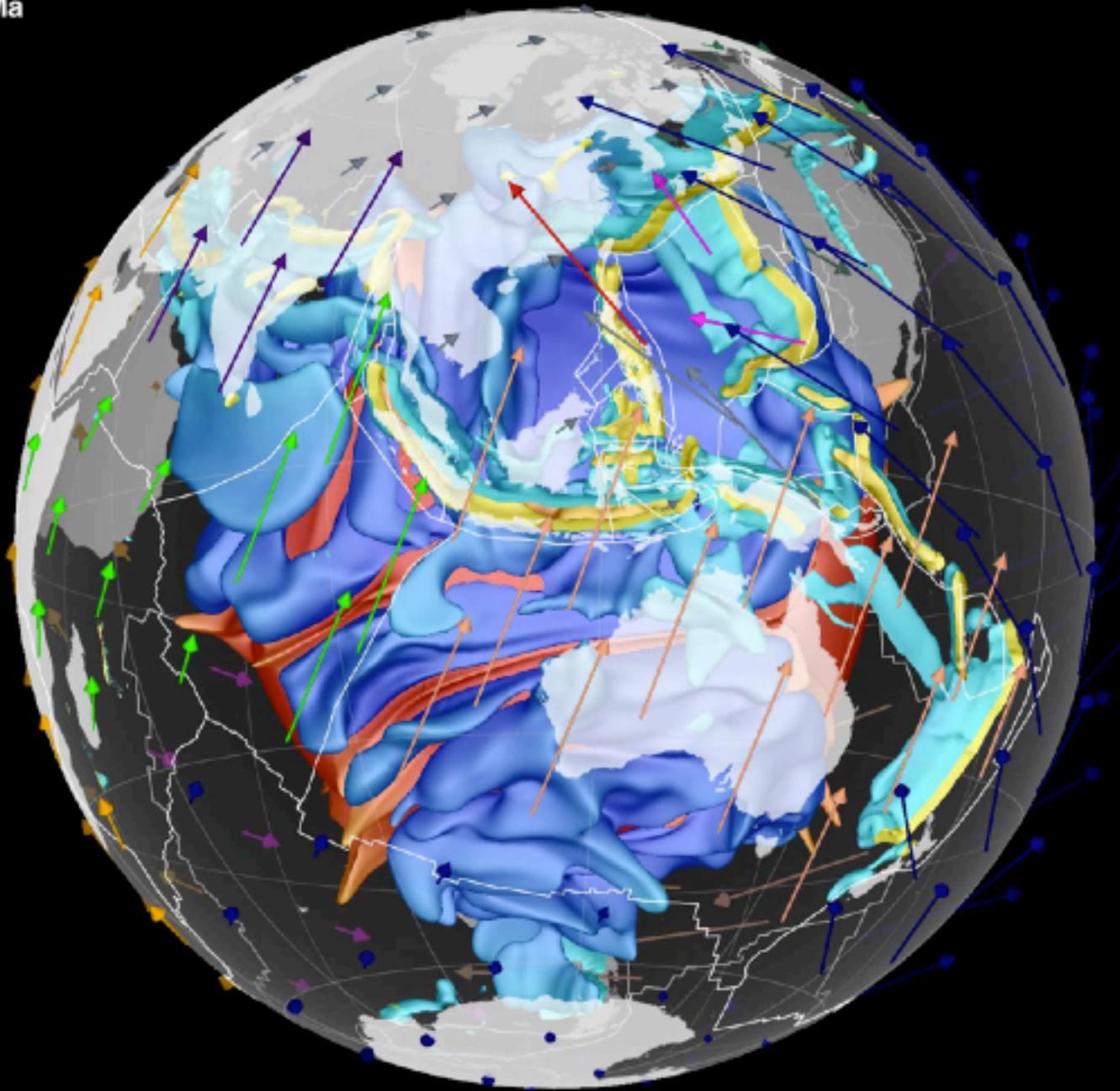


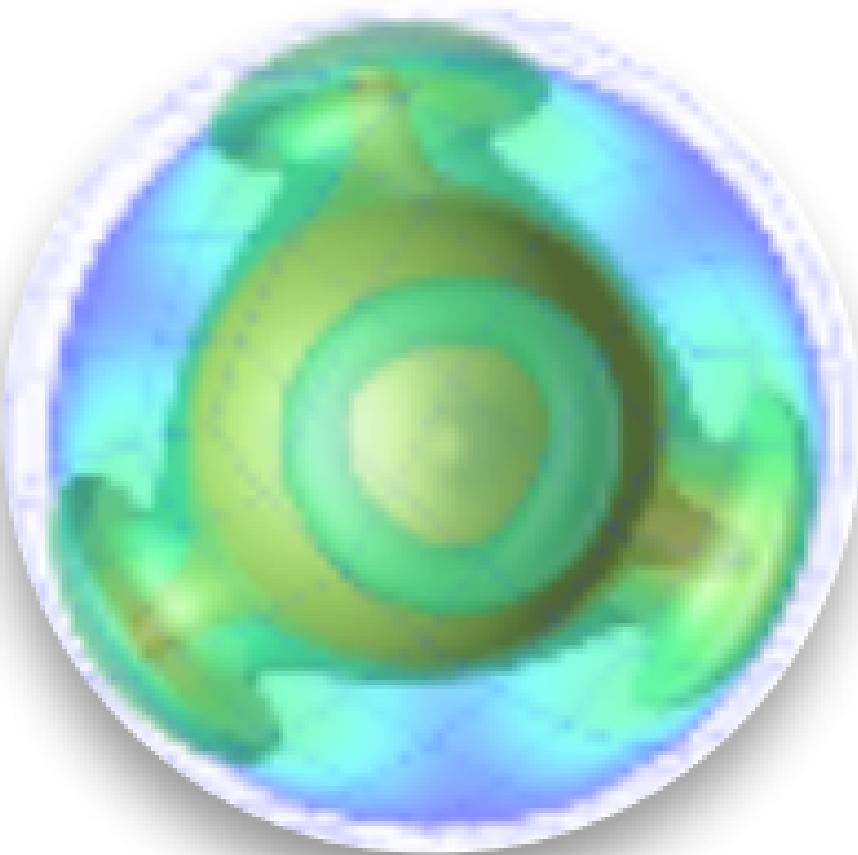


- Global reconstructions of tectonic plates & plate boundaries
- Provide surface boundary conditions for geodynamic models

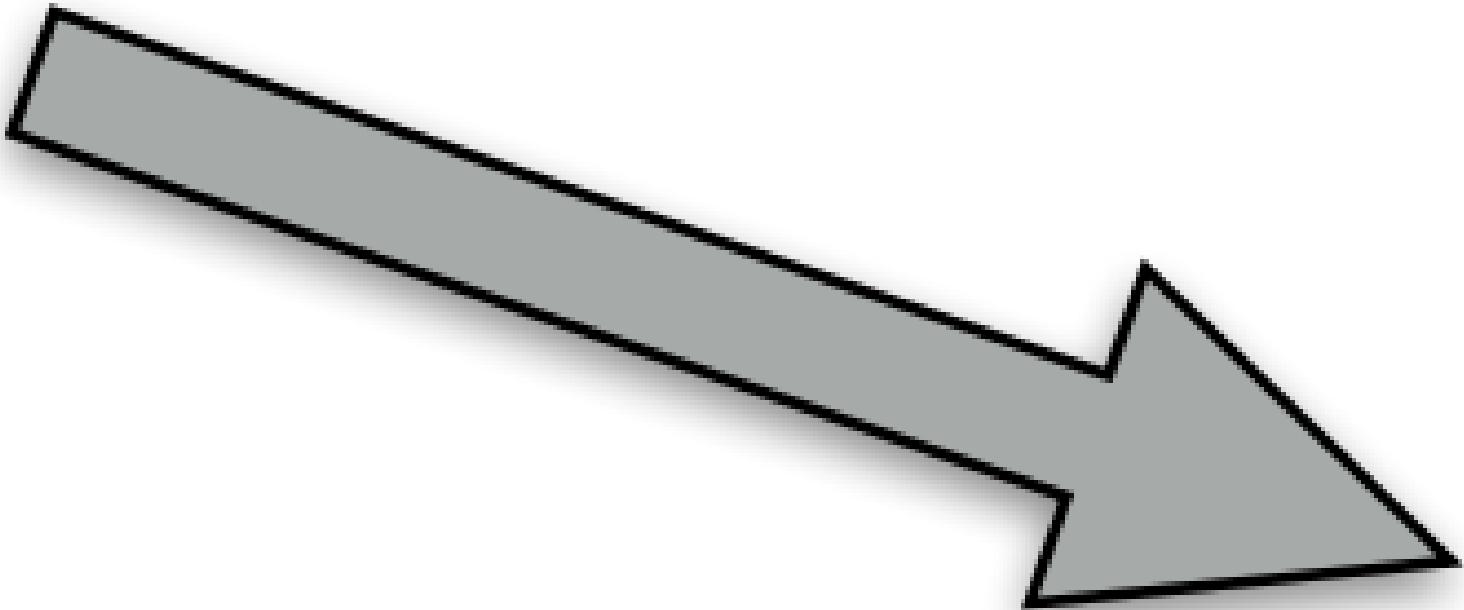


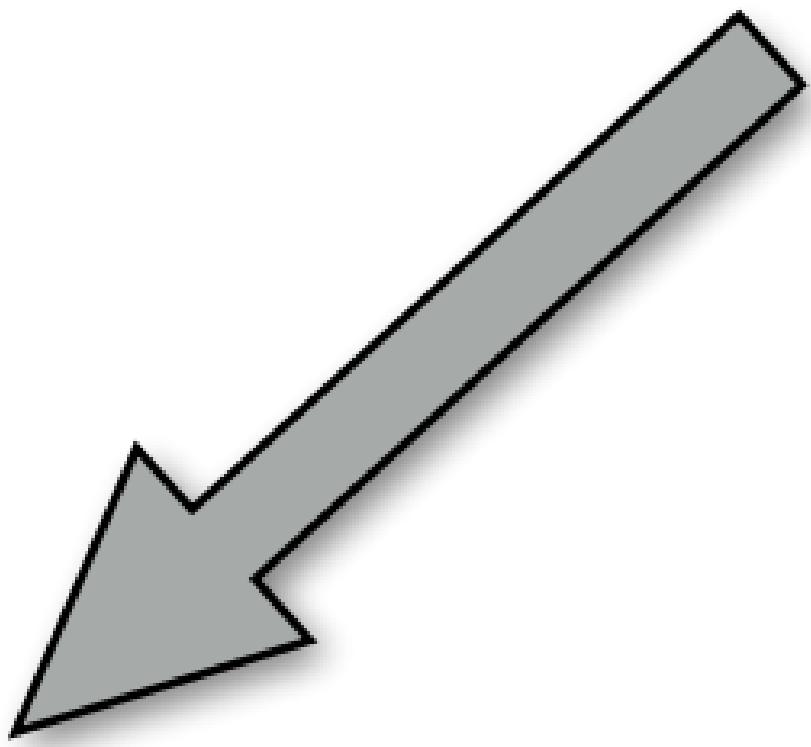
0 Ma





- 3D spherical finite element mantle convection code
- Modified to read in tectonic reconstructions
- Mantle structure though time





Dreamin' to Graphy



AuScope

SAM

simulation, analysis, modelling

gitcoins

• 40,000 CPU hours/model (200 Ma)
13x10⁶ points assimilated through space & time

CRAY

PAWSEY

MAGNUS

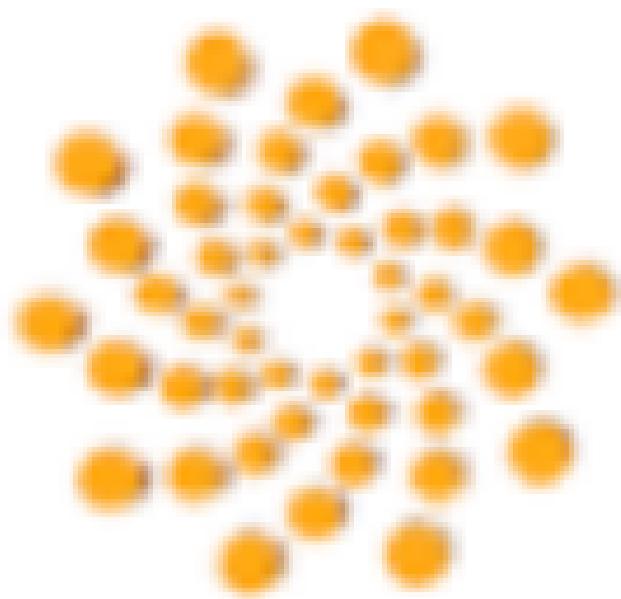
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PAWSEY

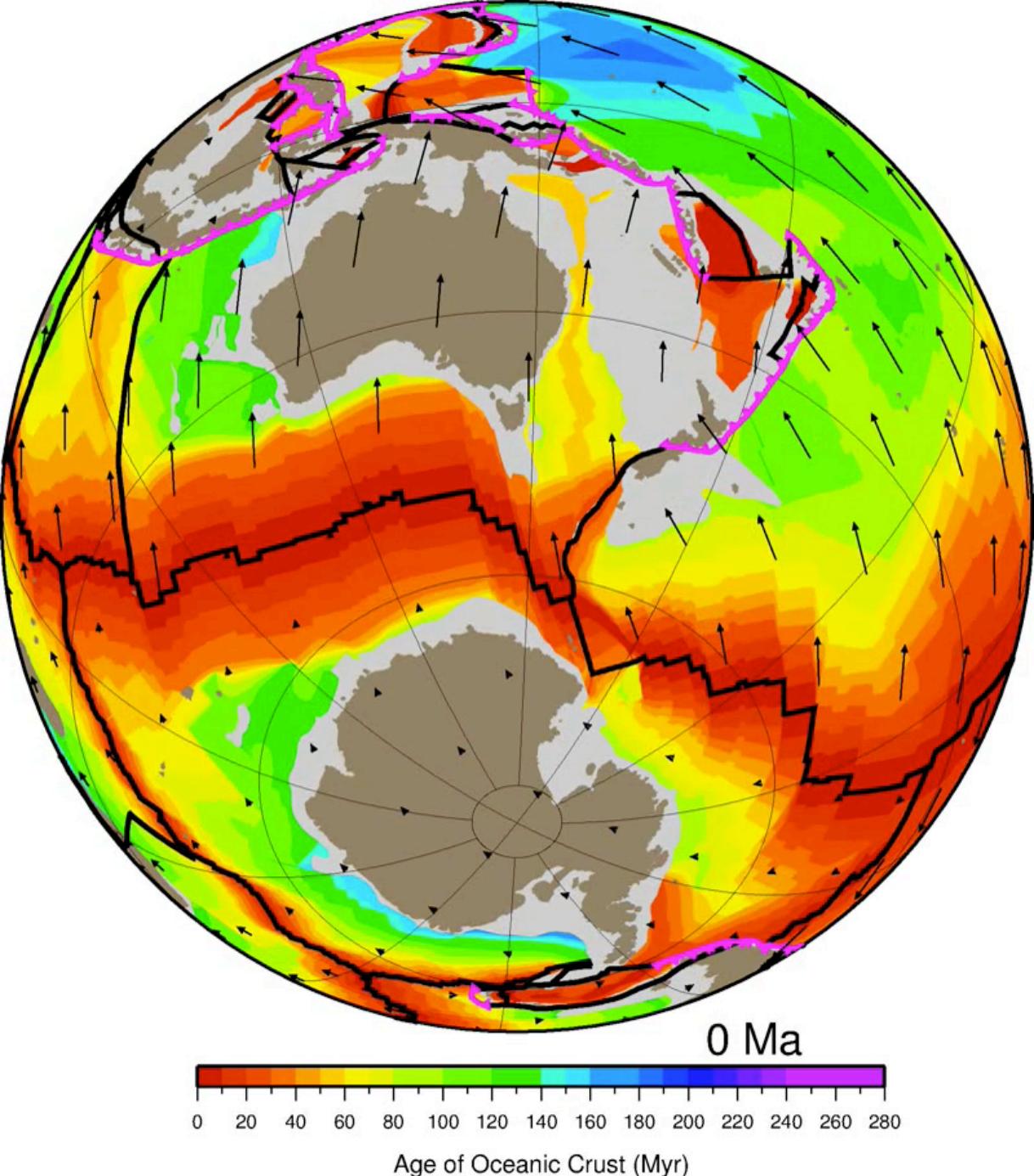
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PAWSEY

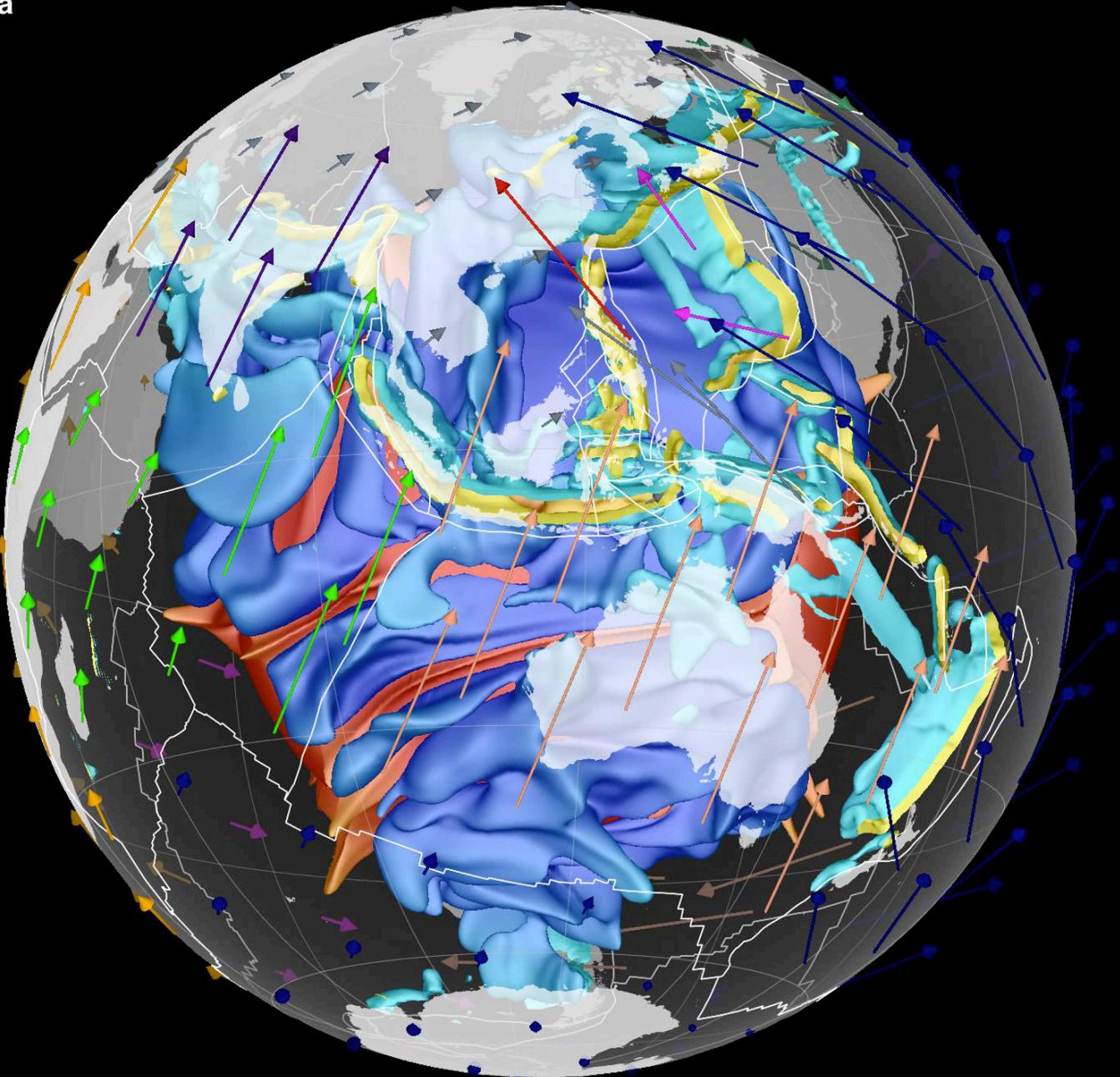
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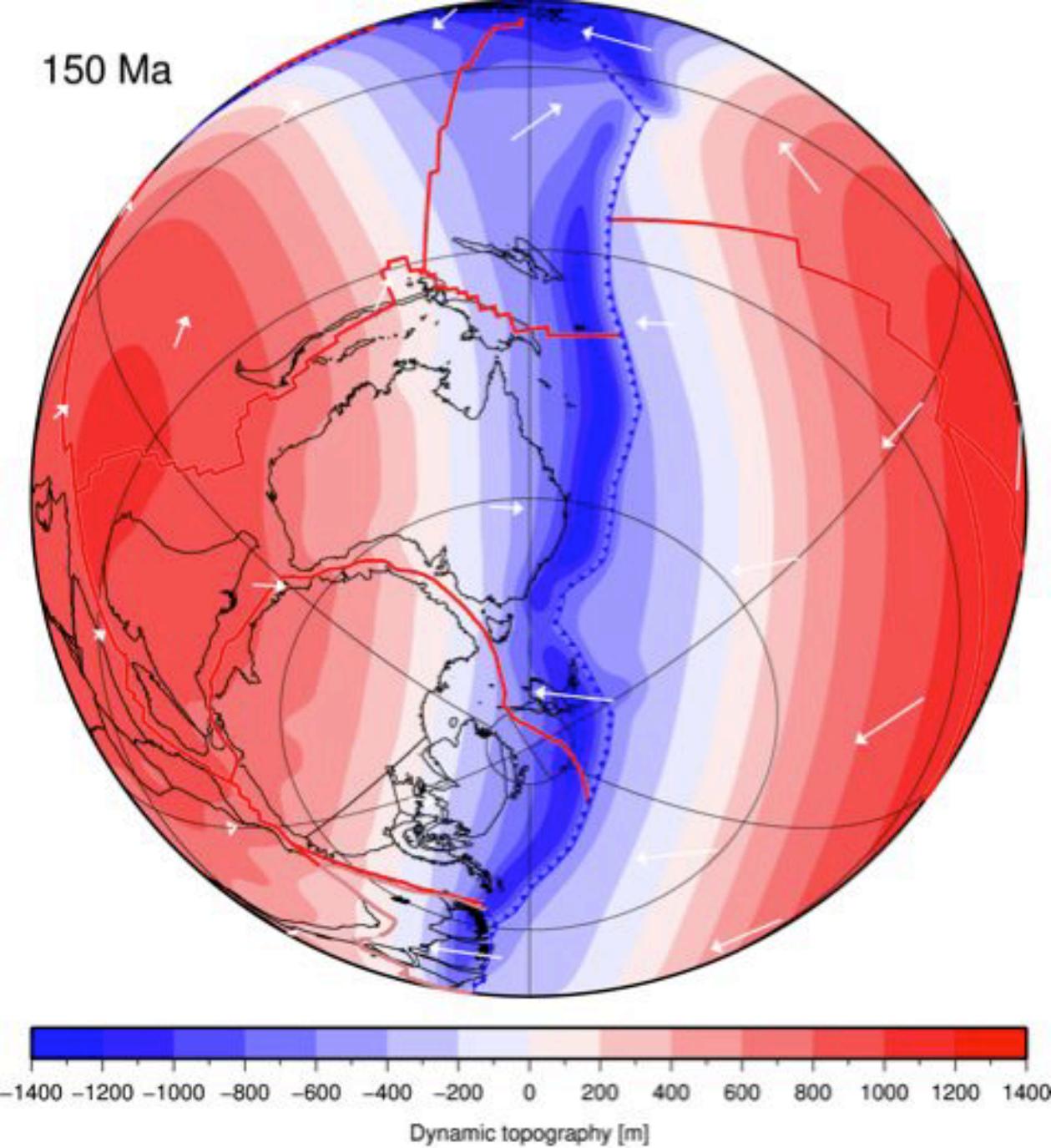
NCI



0 Ma

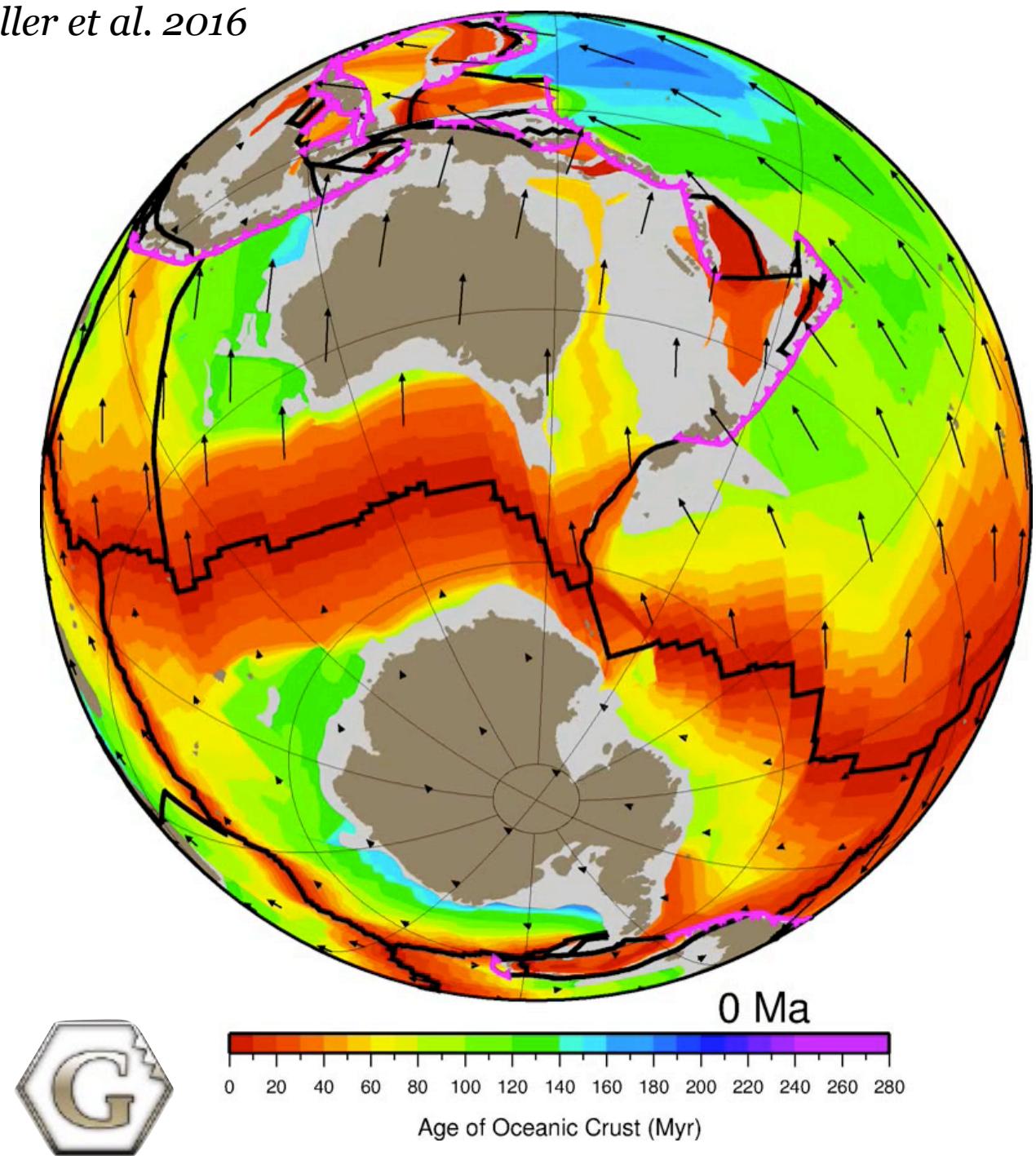


150 Ma

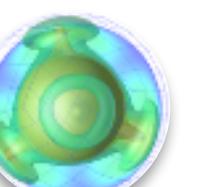


Our Experimental Virtual Earth

Muller et al. 2016

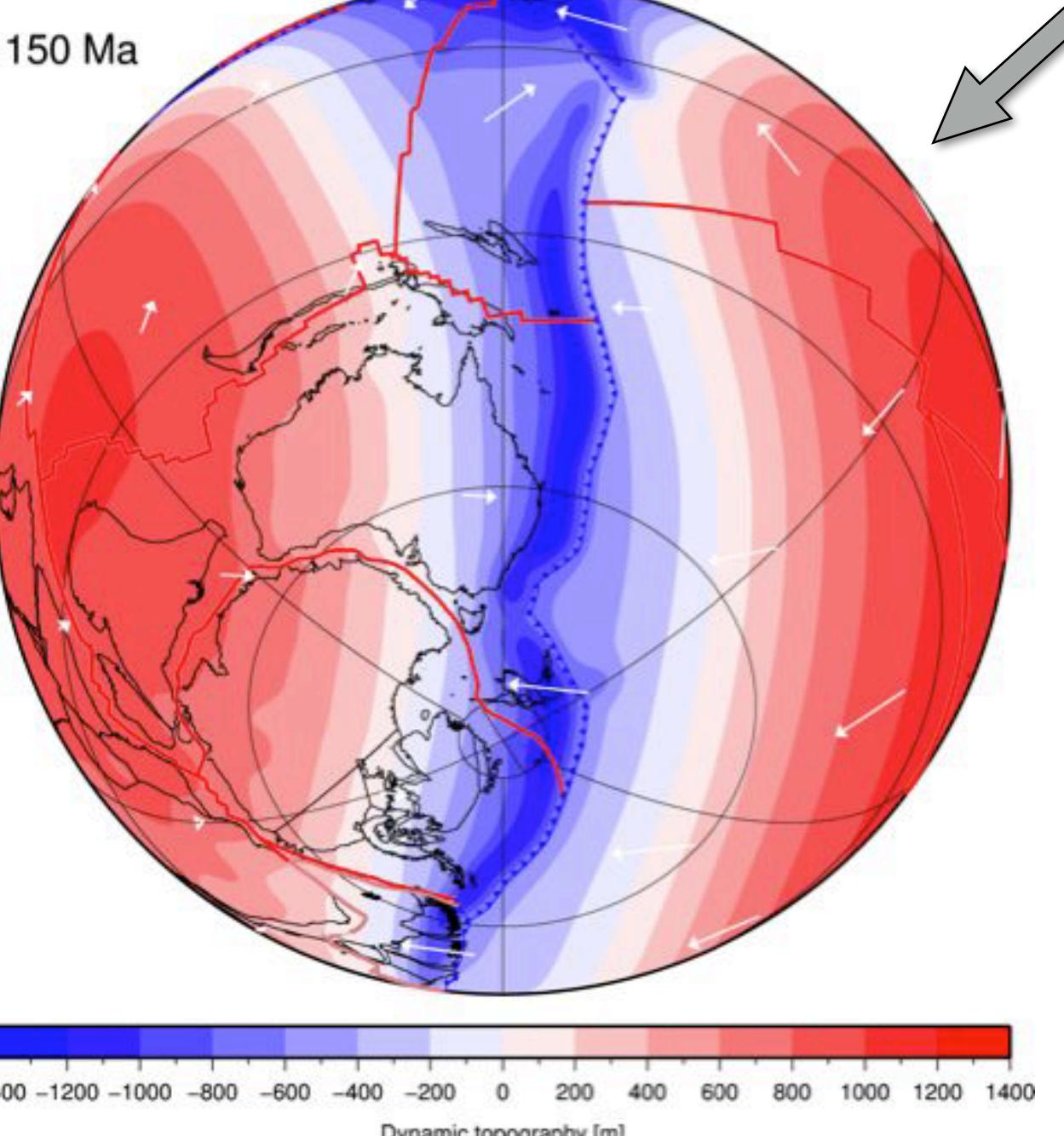


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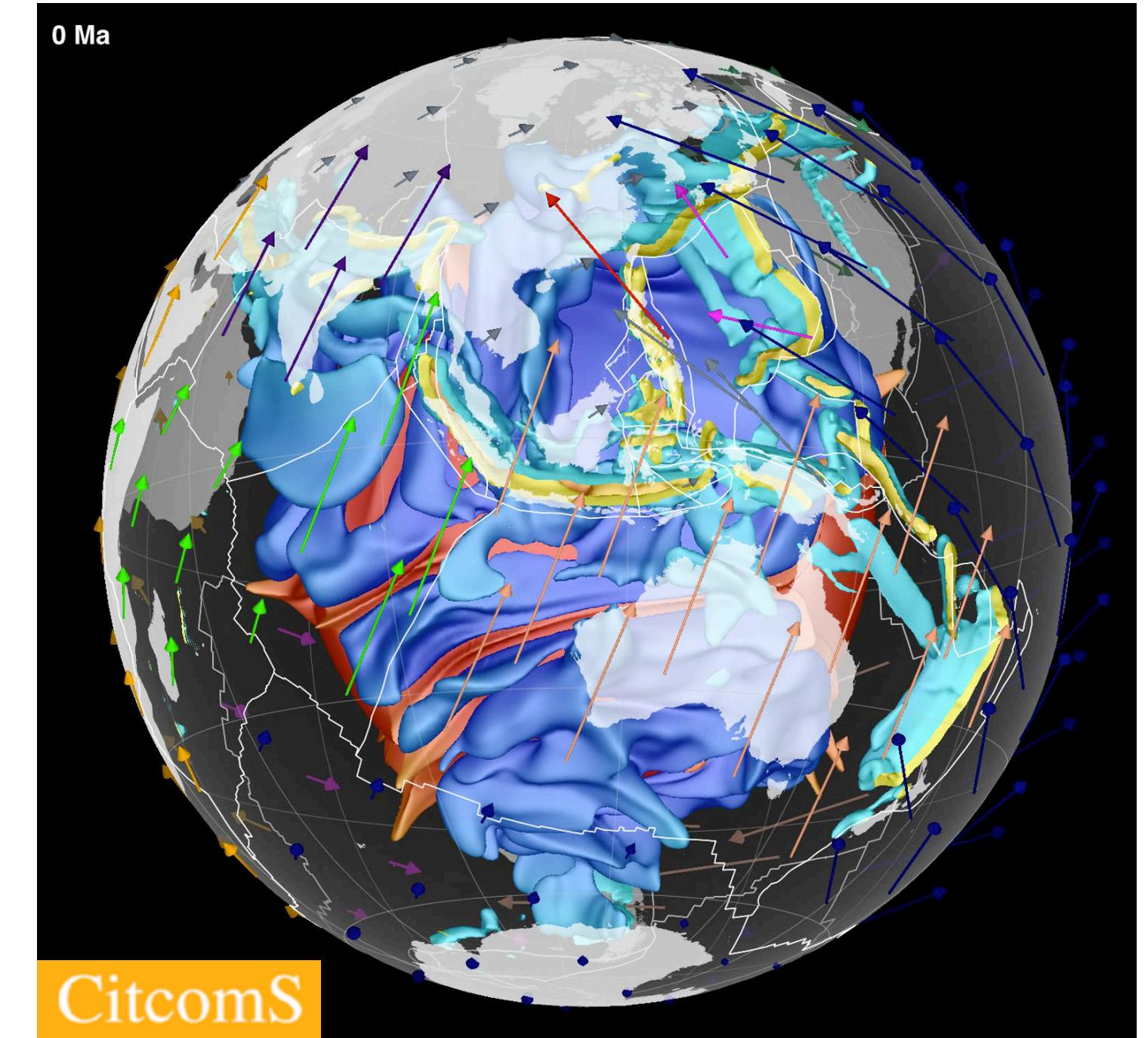


Dynamic topography

150 Ma



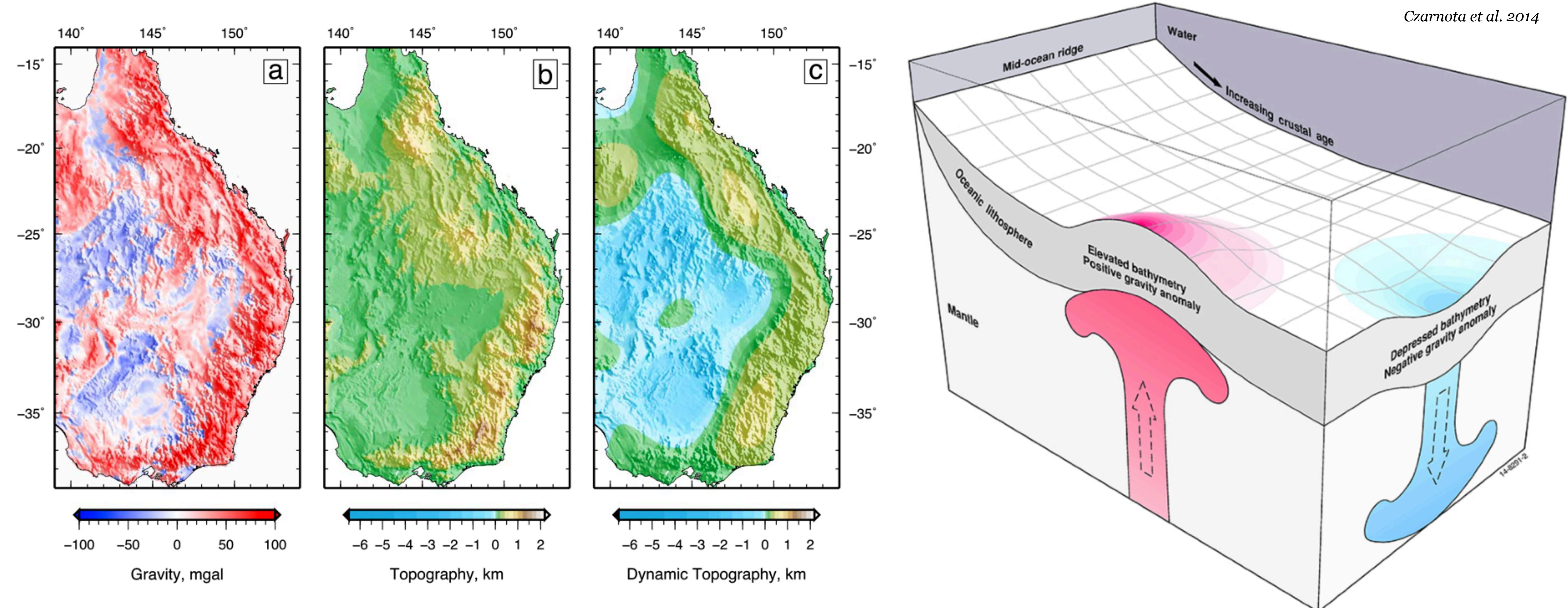
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- Provide surface boundary conditions for geodynamic models



- 40,000 CPU hours/model (200 Ma)
- 13×10^6 points assimilated through space & time



Uplift mechanism of the Australian Eastern Highlands



- Significant portion of Earth's topography results from the viscous stresses created by flow within the underlying mantle
- Most prominent topographic features of the Australian landscape and offshore sedimentary basin seem related to the expression of this convective circulation beneath the Australian Plate.