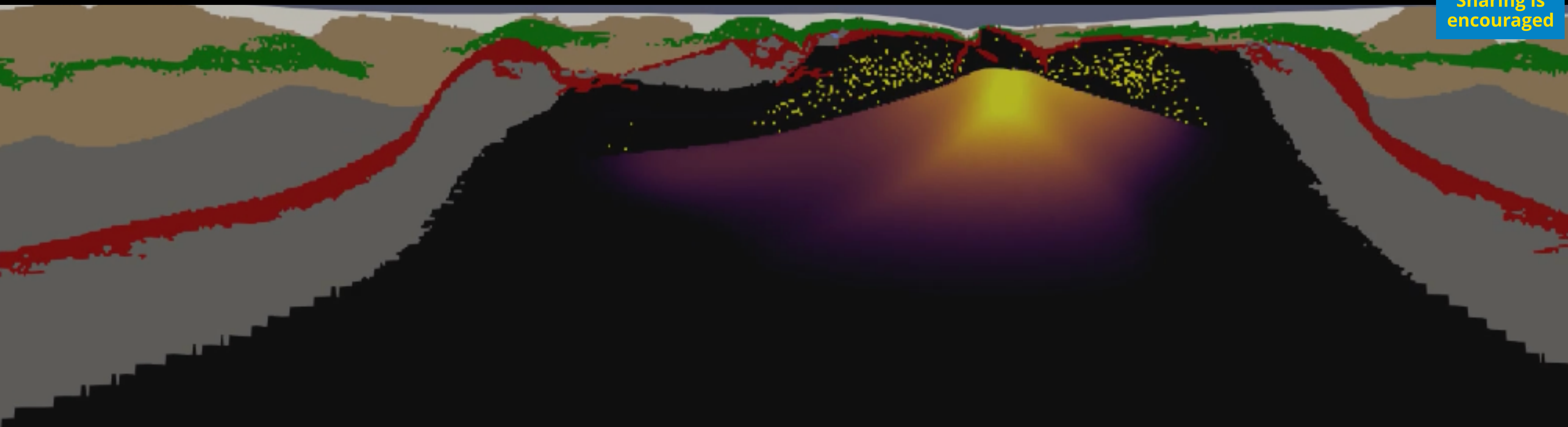


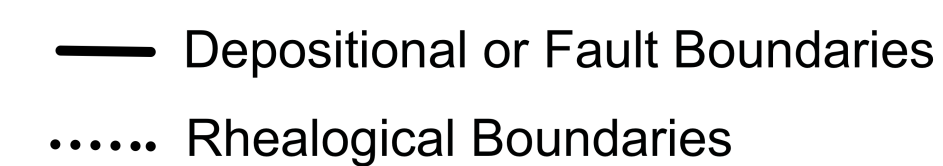
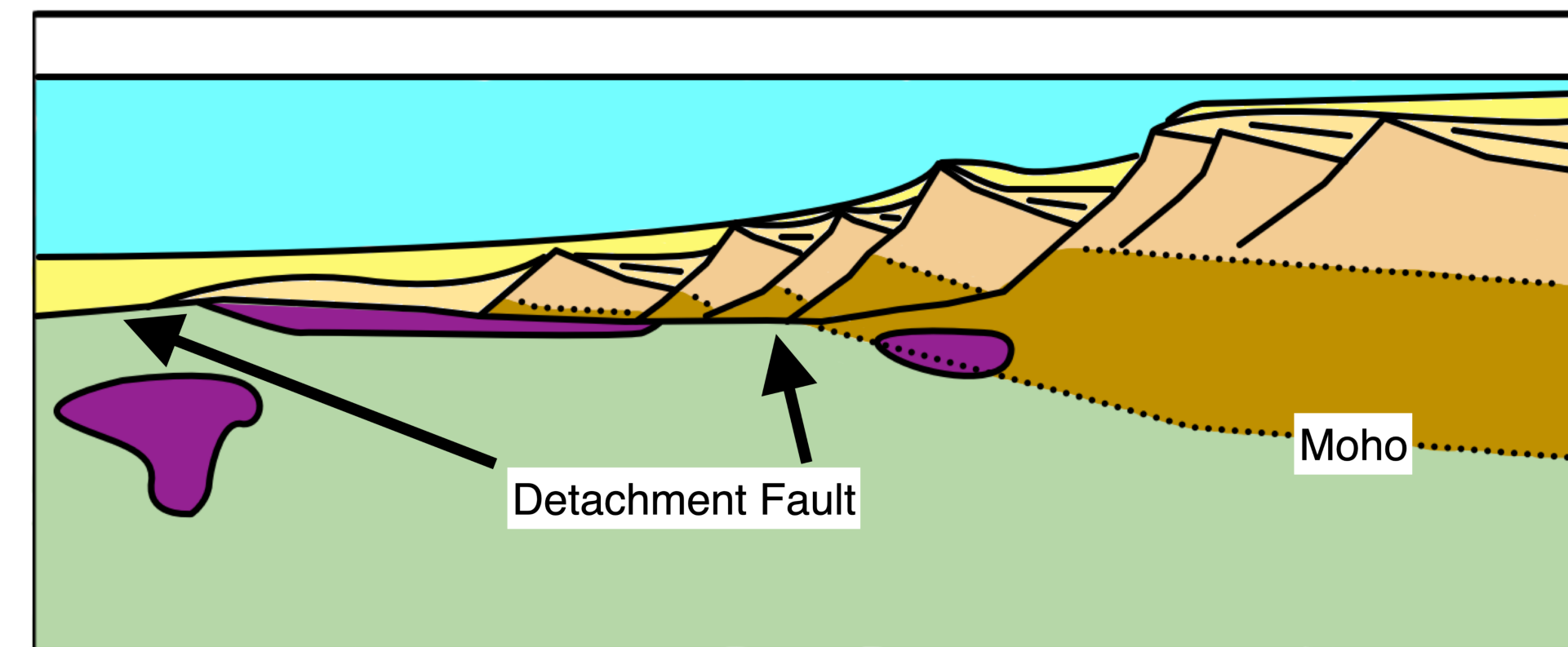
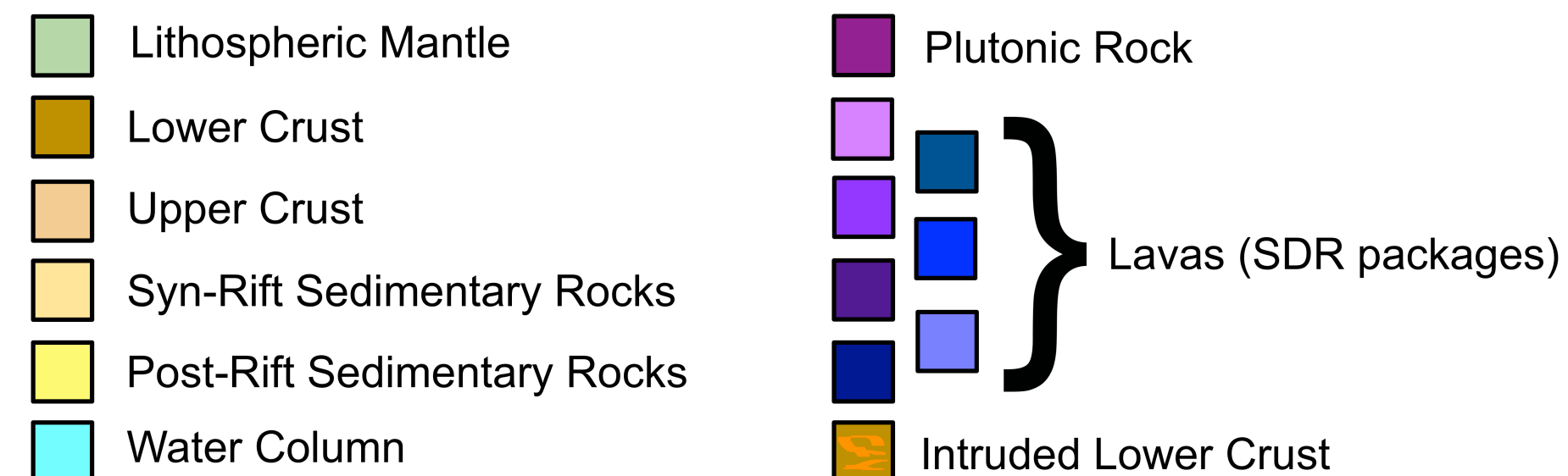
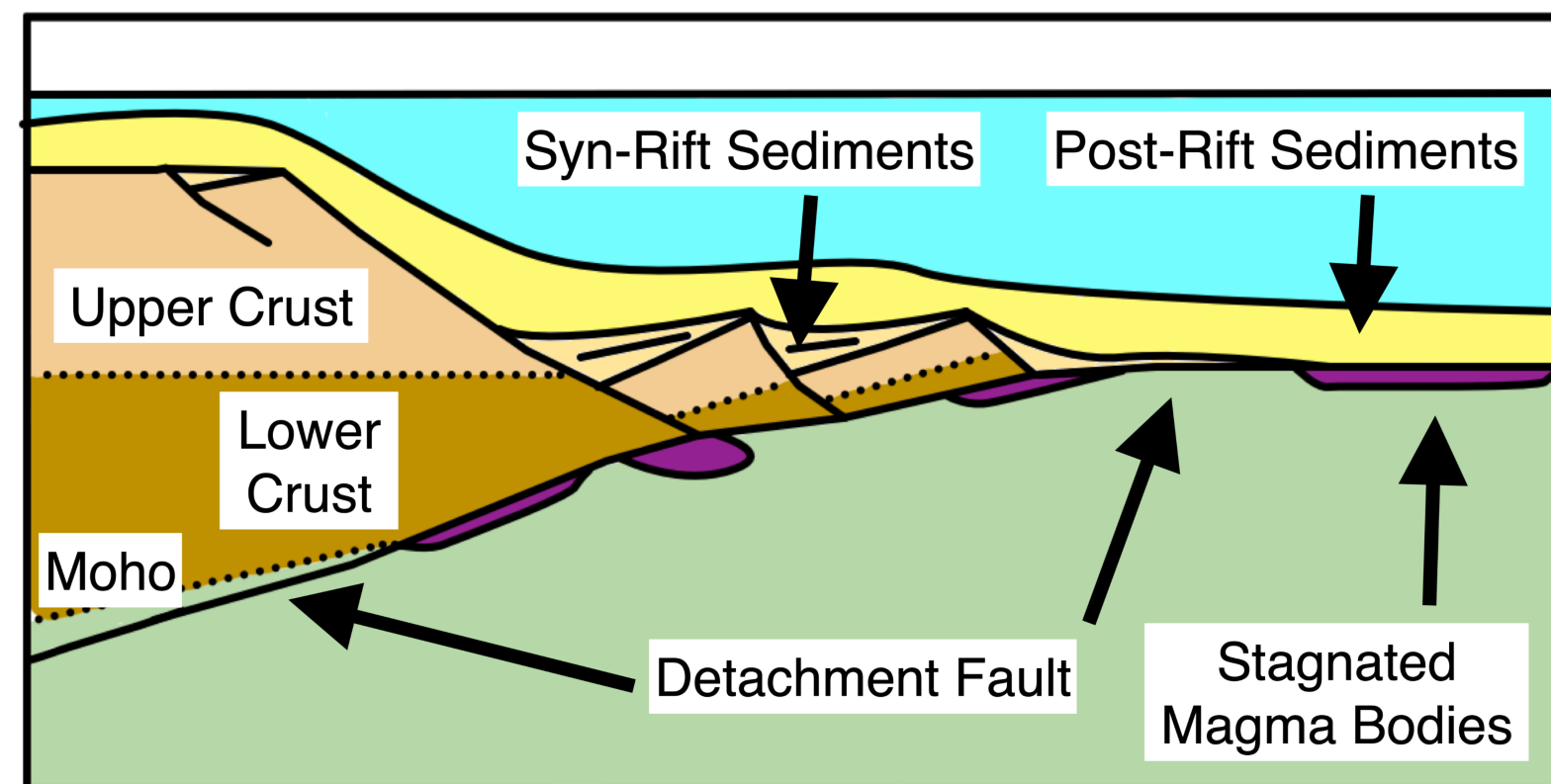
Nicholas Montiel, with Emmanuel Masini, Luc Lavier, and Othmar Müntener



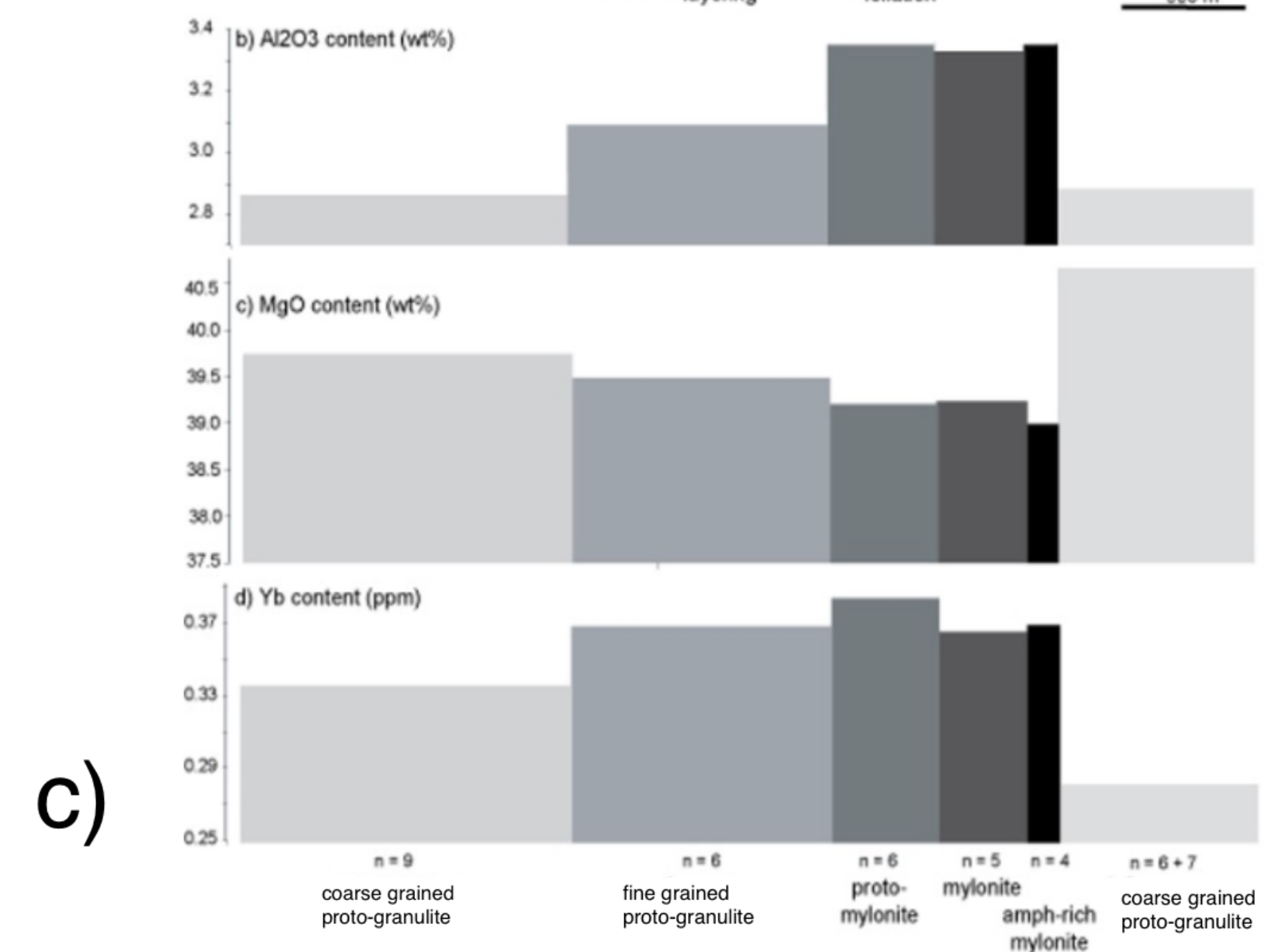
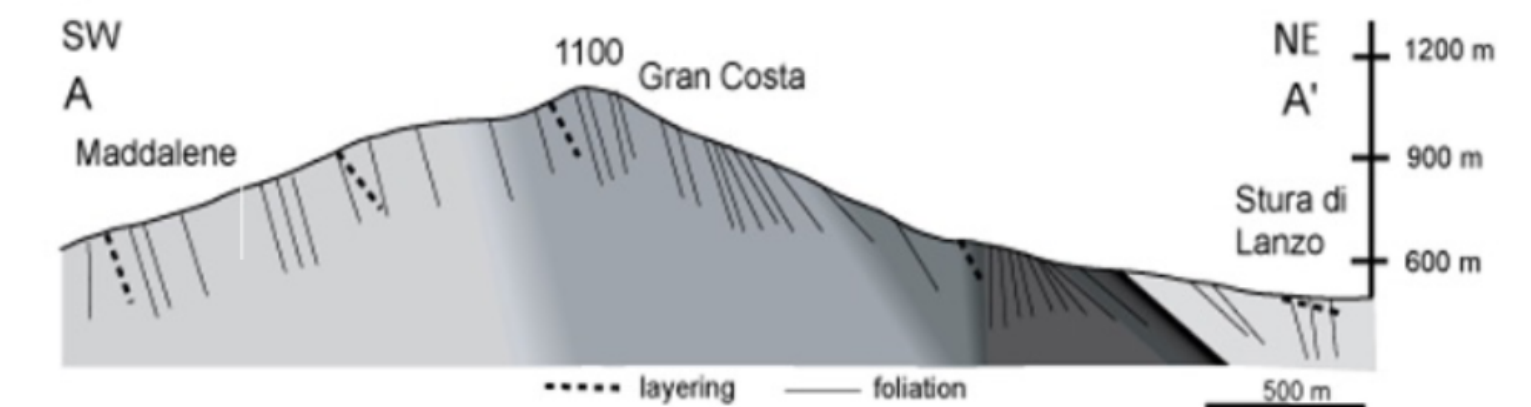
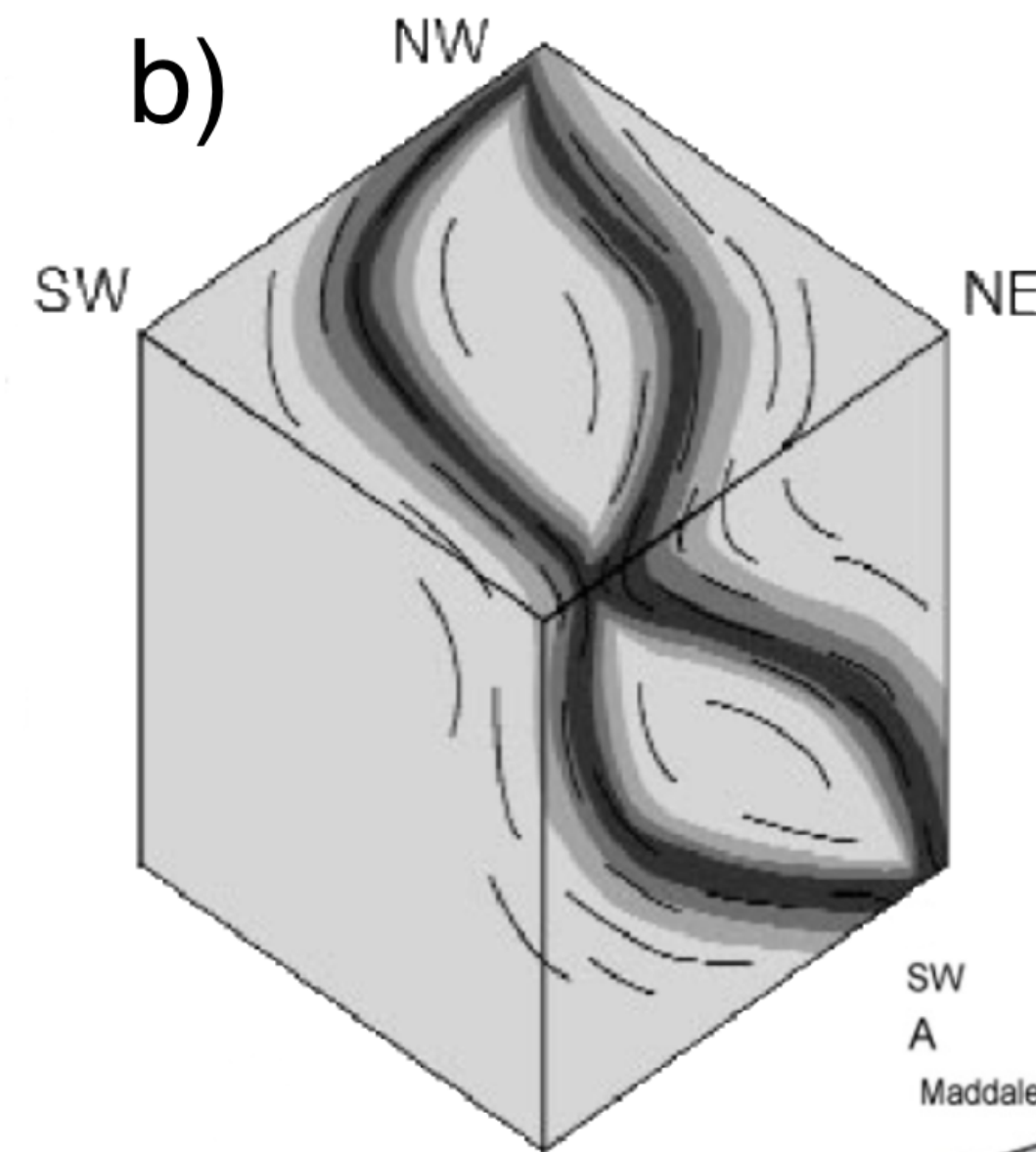
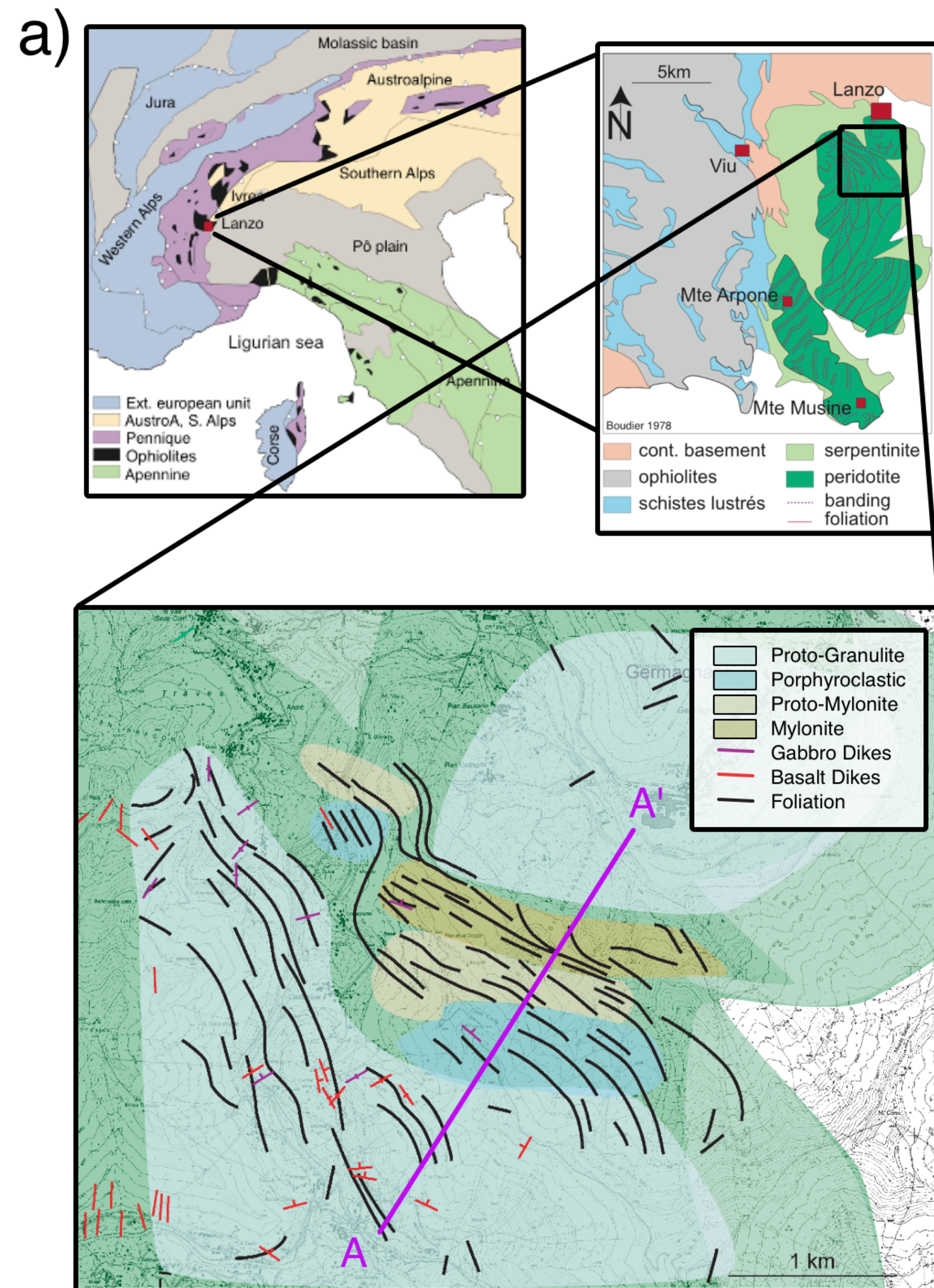
# Characterizing the rift-to-drift transition at "magma-poor" margins:

A synthesis of geology, seismic experiments, and numerical modeling.

- Lava-poor (magma-poor) rifted margins:
  - Hyperextension of the continent
  - Exhumation of the mantle
  - Increasing magmatism towards oceanic crust
- What is the role of magmatism?
- What is the role of the mantle deformation?
- What is the structure of the continent-ocean-transition?

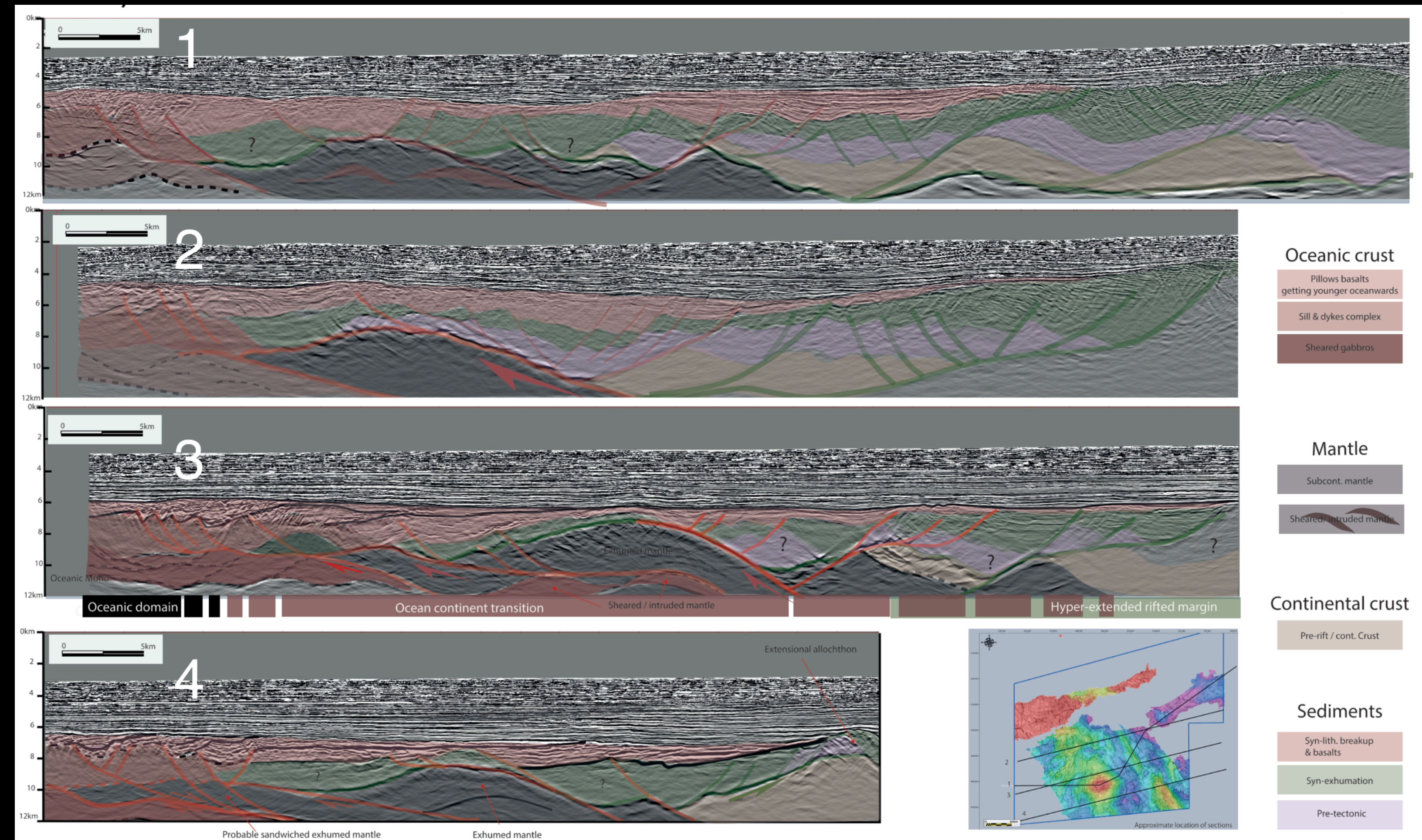
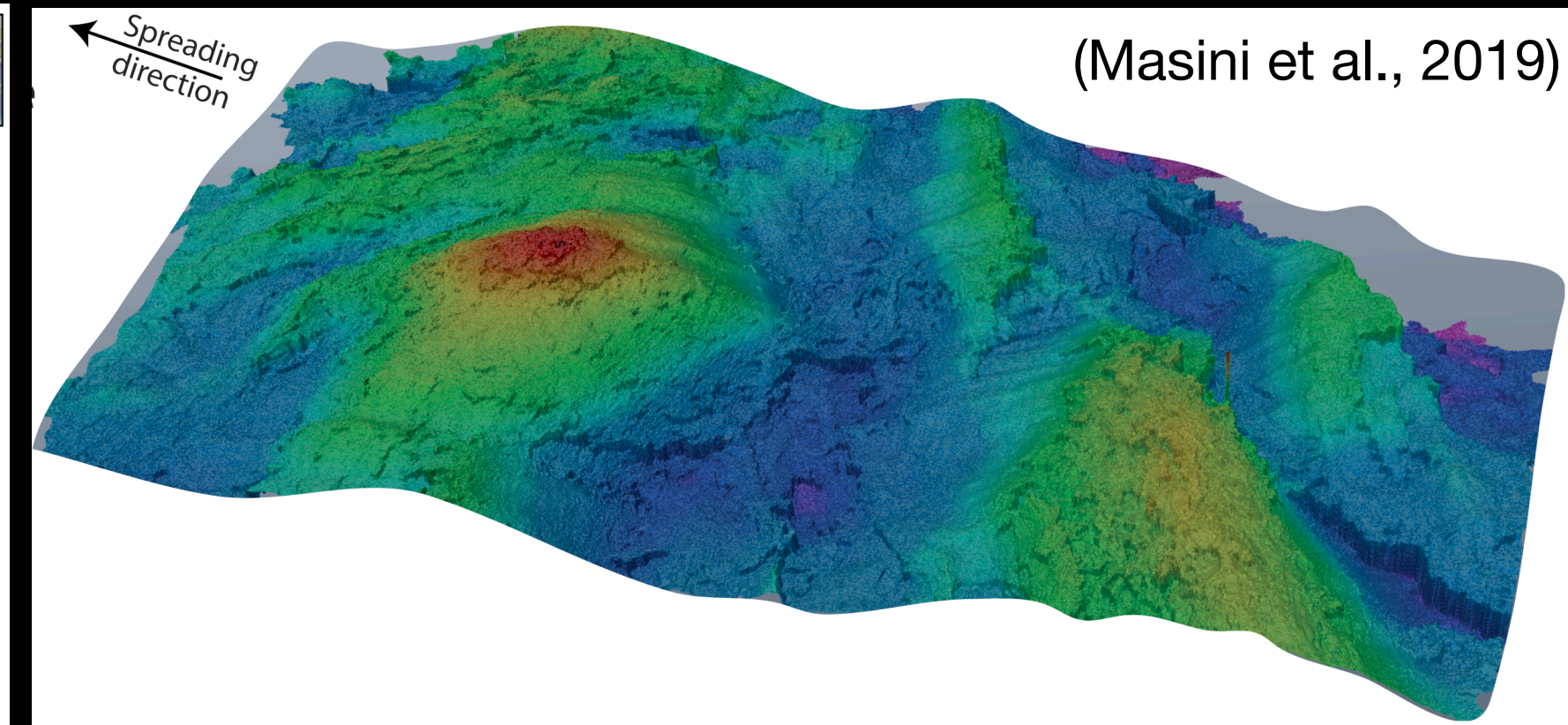
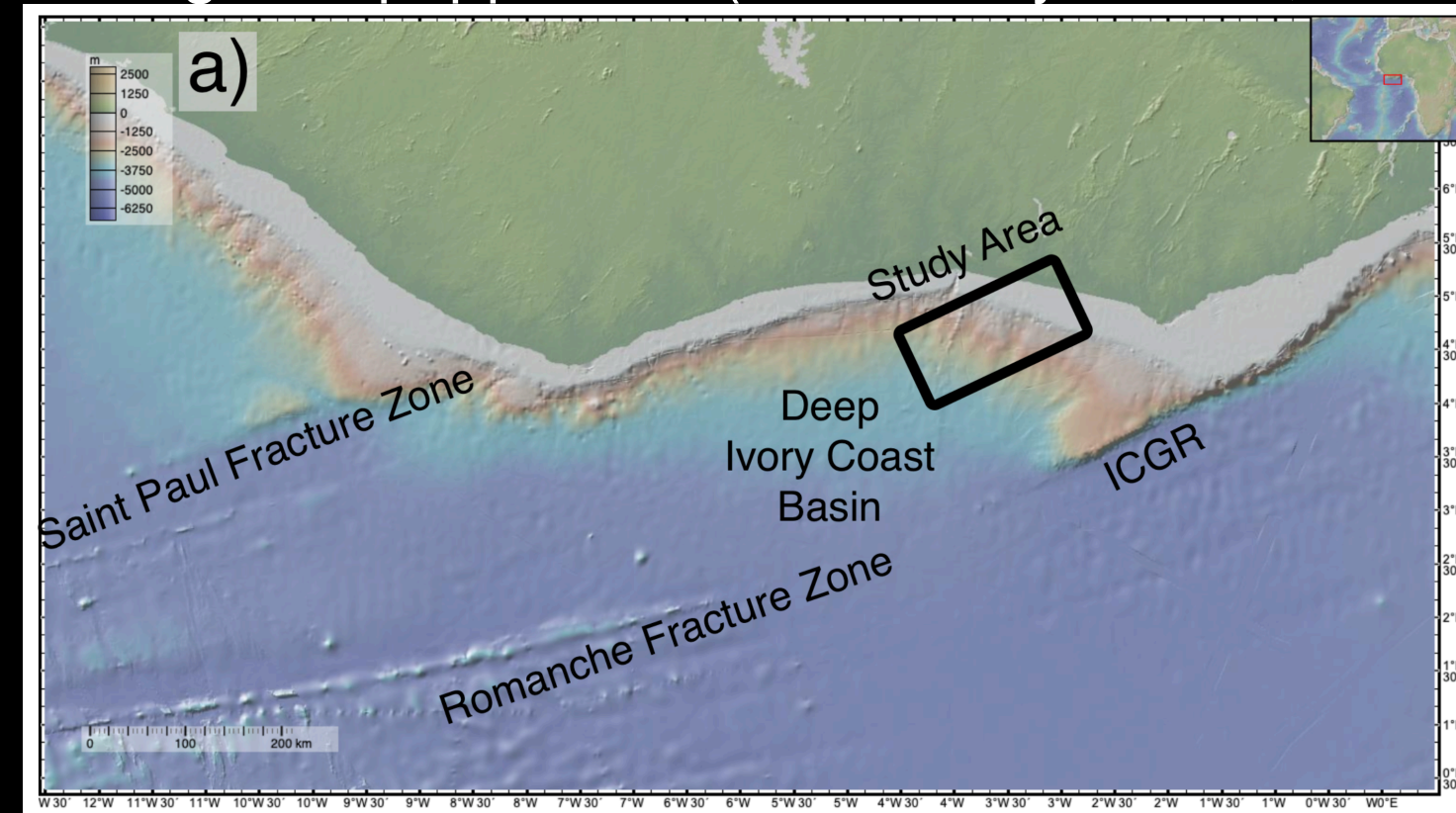






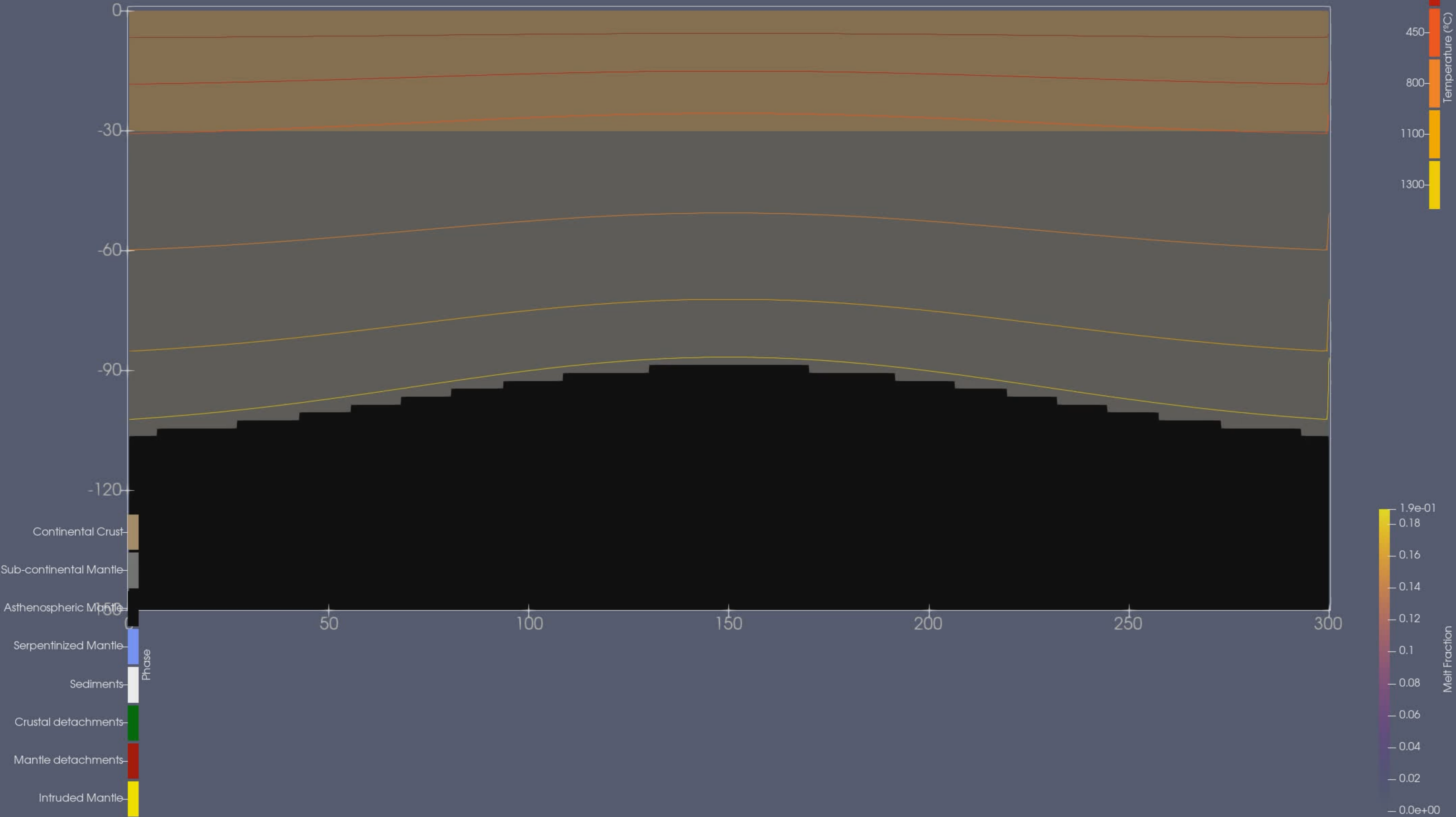


- 3D seismic experiment in the Deep Ivory Coast Basin.
- Seaward-dipping detachment faults hyperextend the continental lithosphere.
- Increasing thickness of volcanoclastics and lava flows.
- Out-of-sequence, anastomosing, landward dipping faults lead to doming of the mantle.
- Sheared gabbros/heavily intruded mantle in the footwall of anastomosing system.
- Layered oceanic crust.





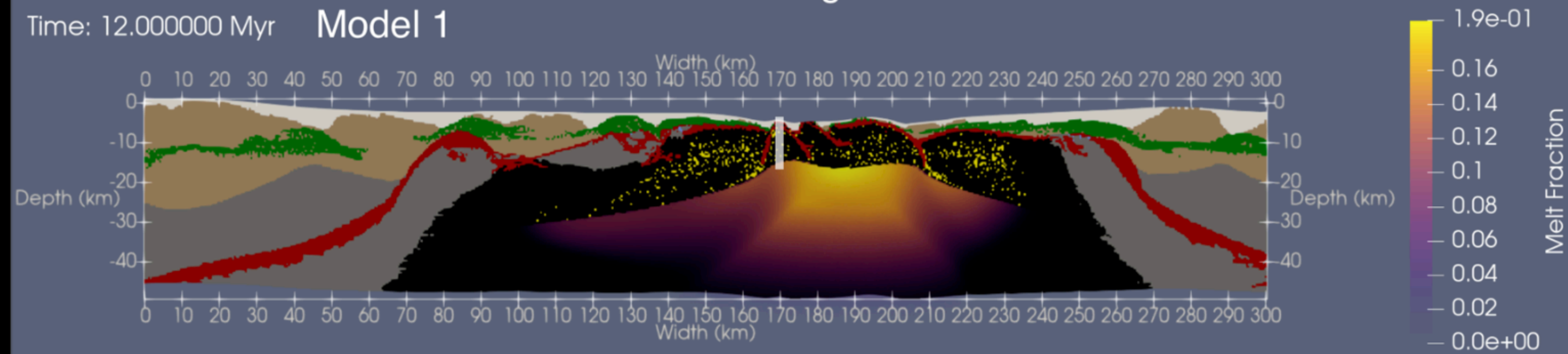
Time: 0.000000 Myr



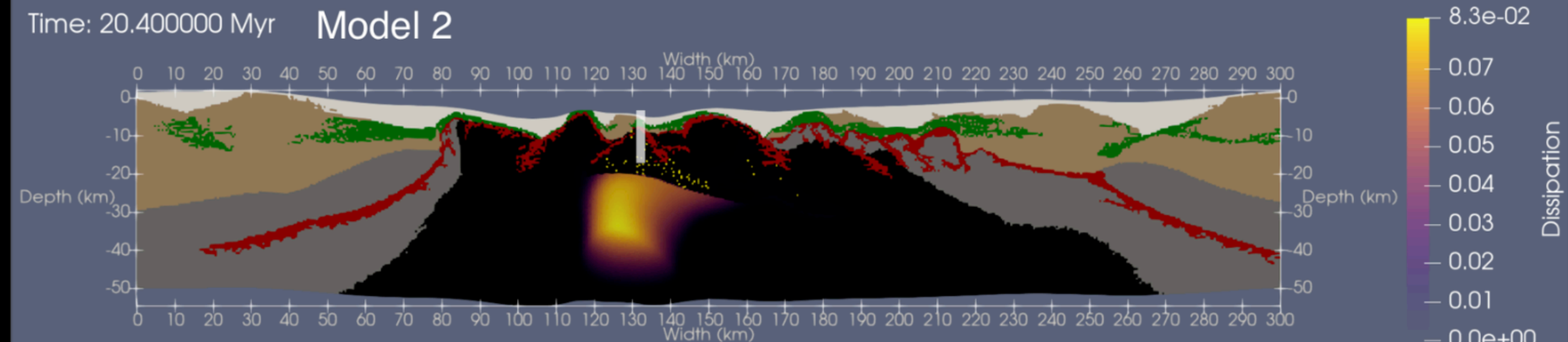


# GeoFLAC Margin Results

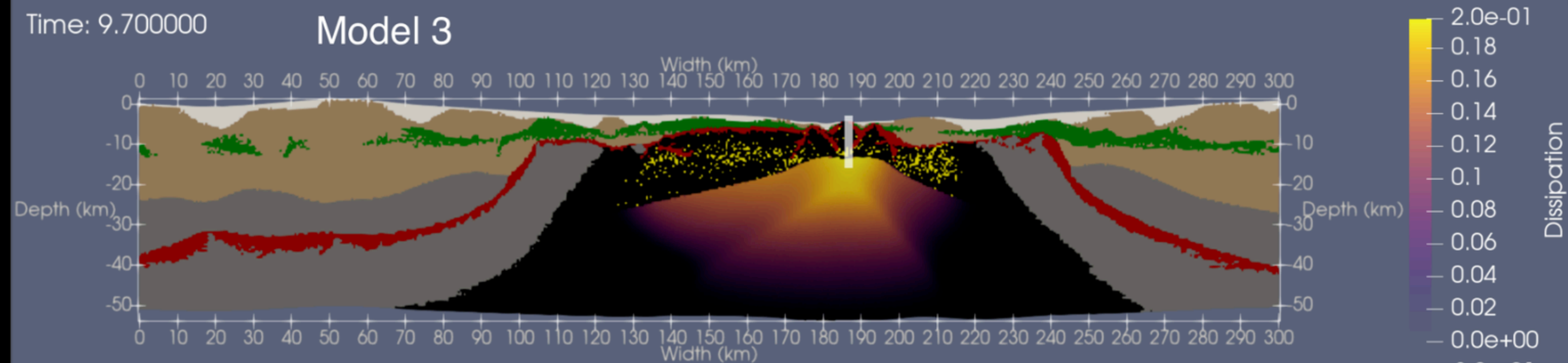
Time: 12.000000 Myr **Model 1**



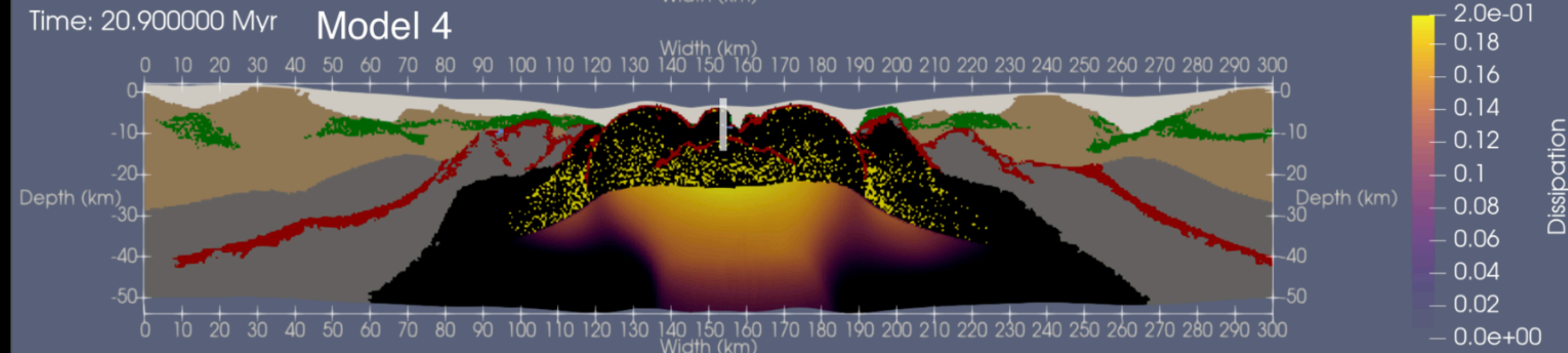
Time: 20.400000 Myr **Model 2**



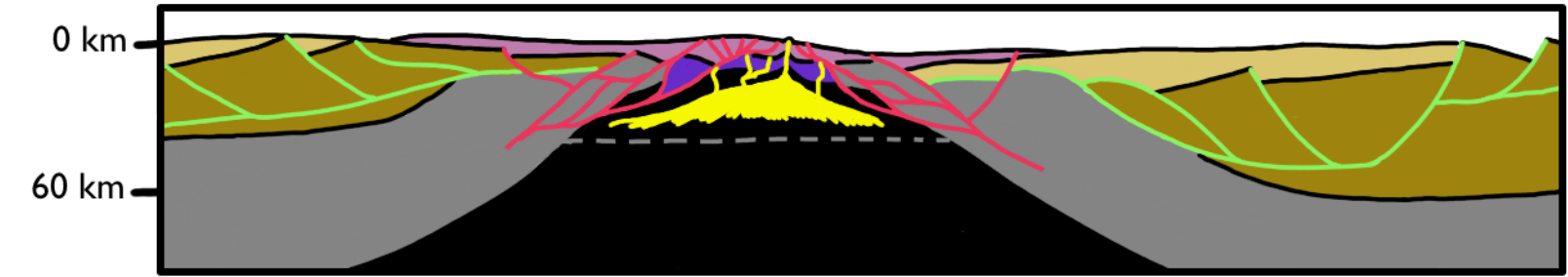
Time: 9.700000 **Model 3**



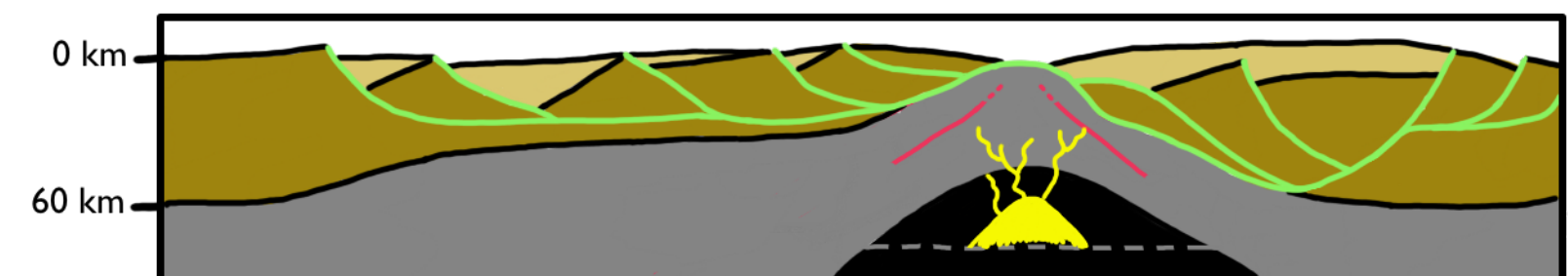
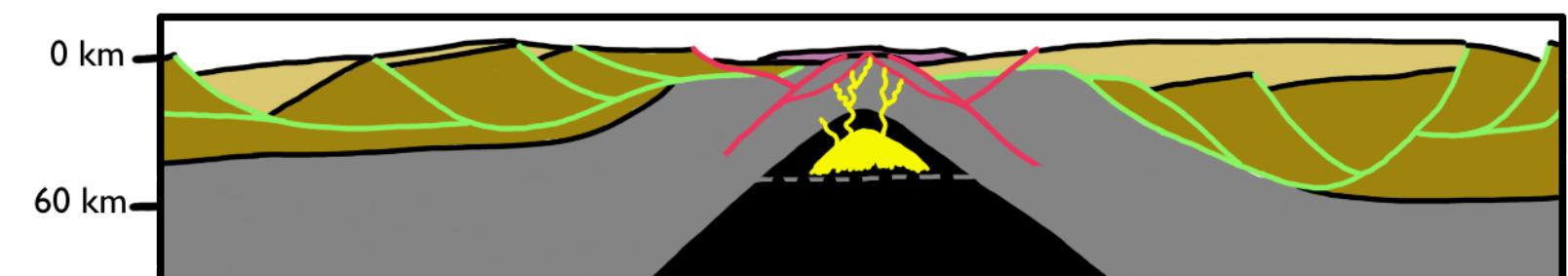
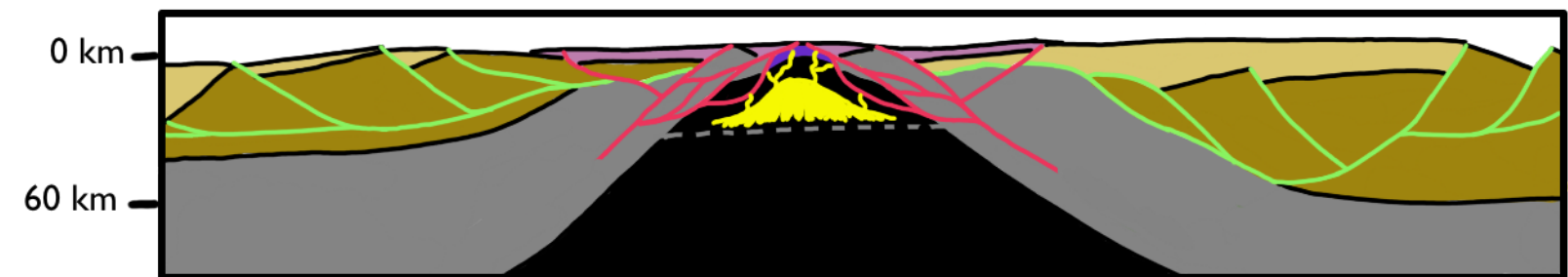
Time: 20.900000 Myr **Model 4**



~70 km



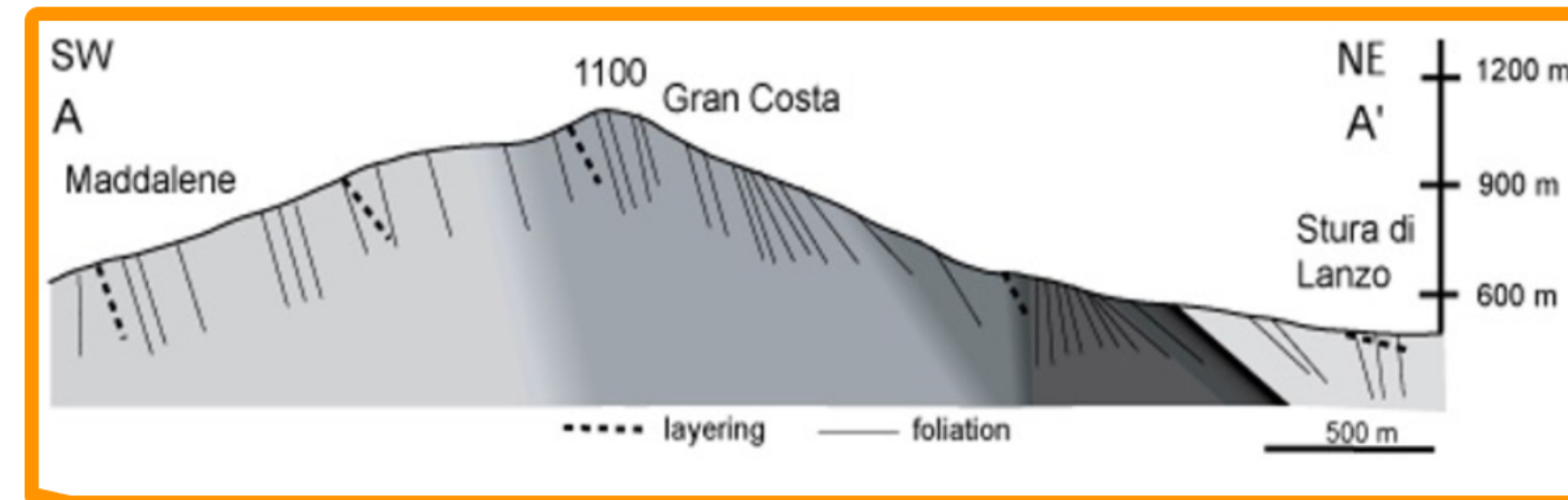
Onset of Seafloor Spreading



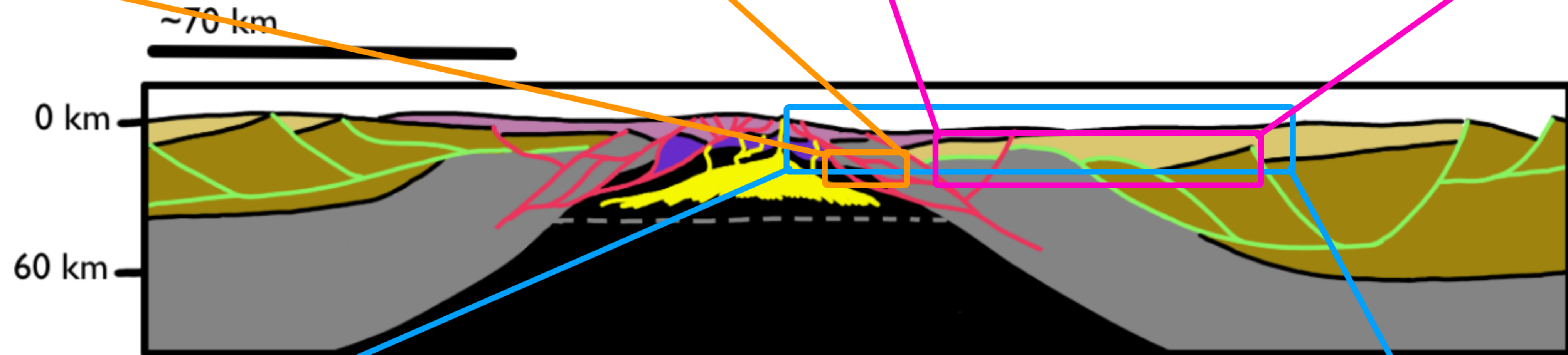
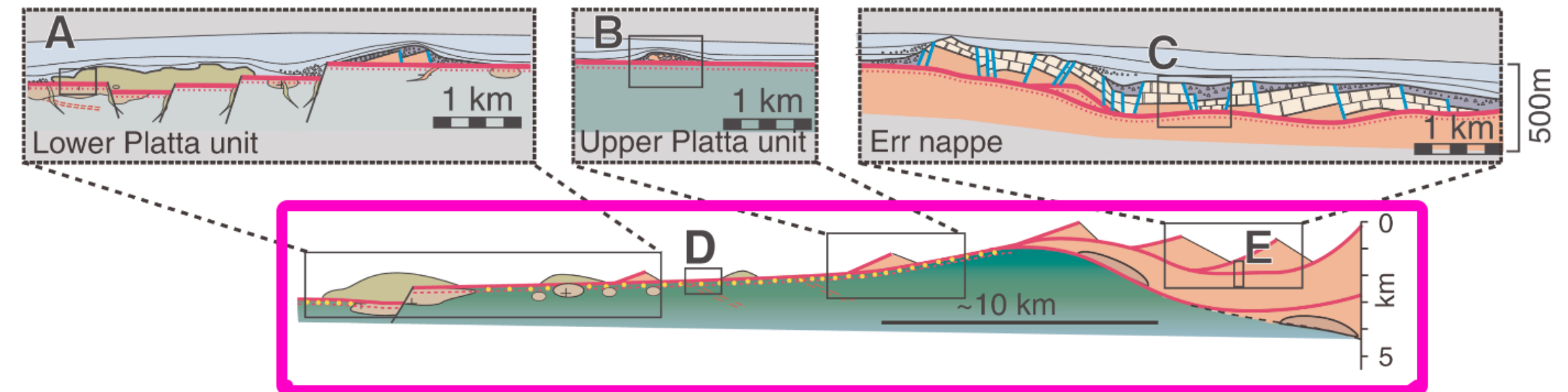
- Continental Crust
- Syn-rift Sedimentary Rocks
- Subcontinental Mantle Lithosphere
- Asthenosphere/Ex-Asthenosphere
- Layer II Oceanic Crust (Lavas/Sill Complex)
- Layer III Oceanic Crust (Sheared Gabbros)
- Magma (Production and Conduits)
- Crustal Detachment Faults
- Out-of-Sequence Detachment Faults



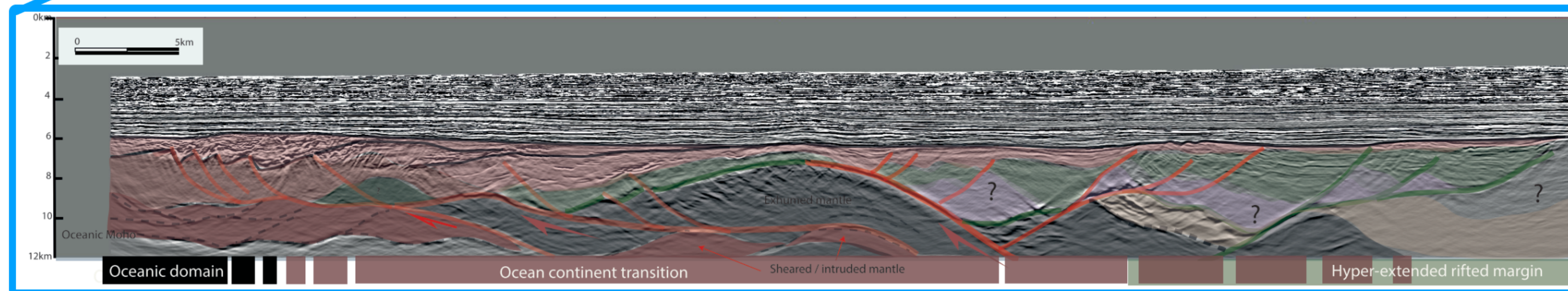
## Lanzo Massif



## Err & Platta Nappes



## Ivory Coast Profile 3





**Thank You!**