

EGU GENERAL ASSEMBLY - 2024

**STRUCTURAL EVOLUTION OF THE BLACK SEA BASIN
USING SECTIONED COMPUTATIONAL MODELS**

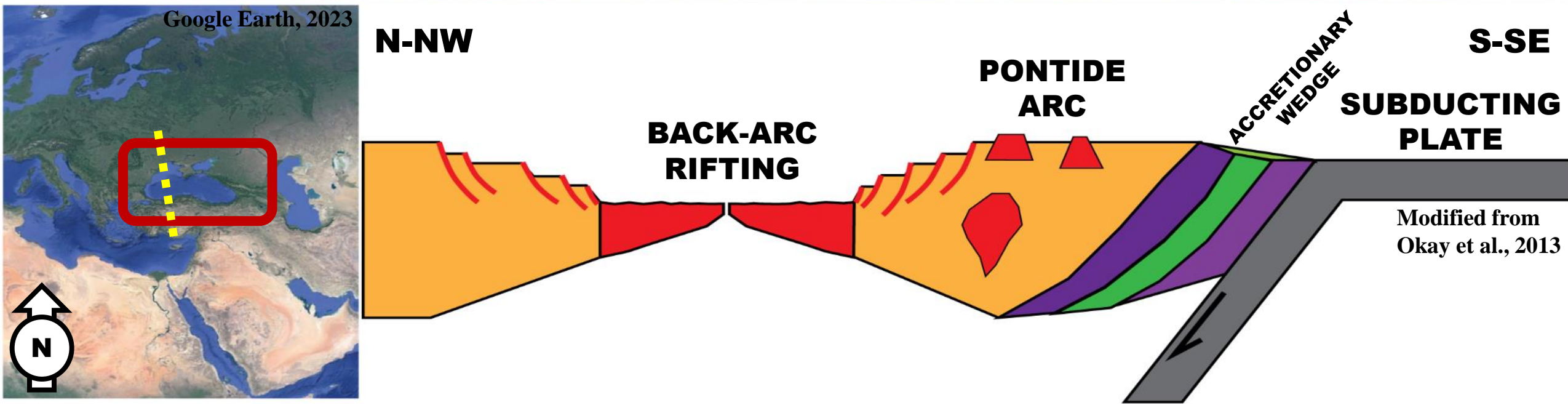
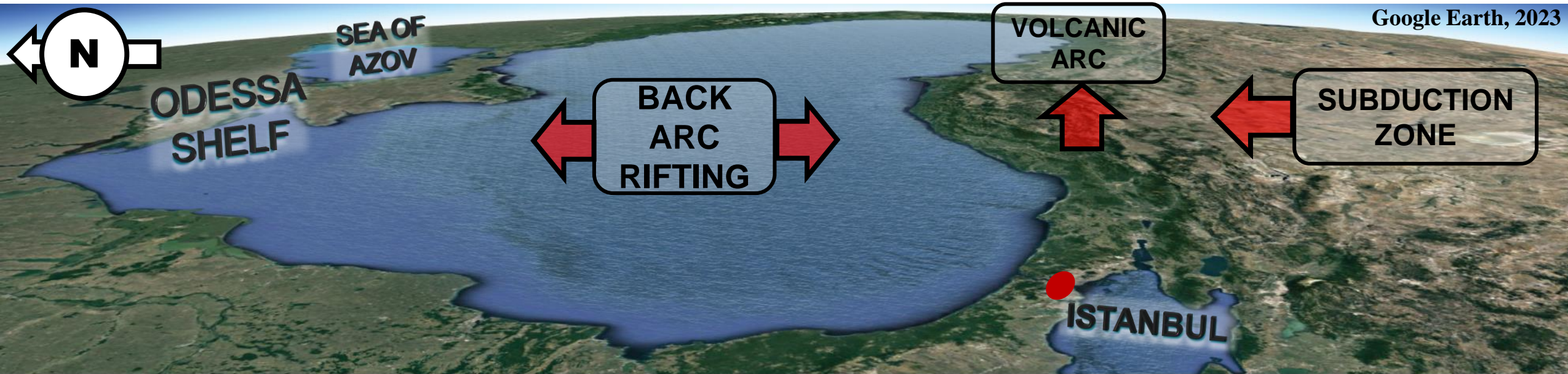
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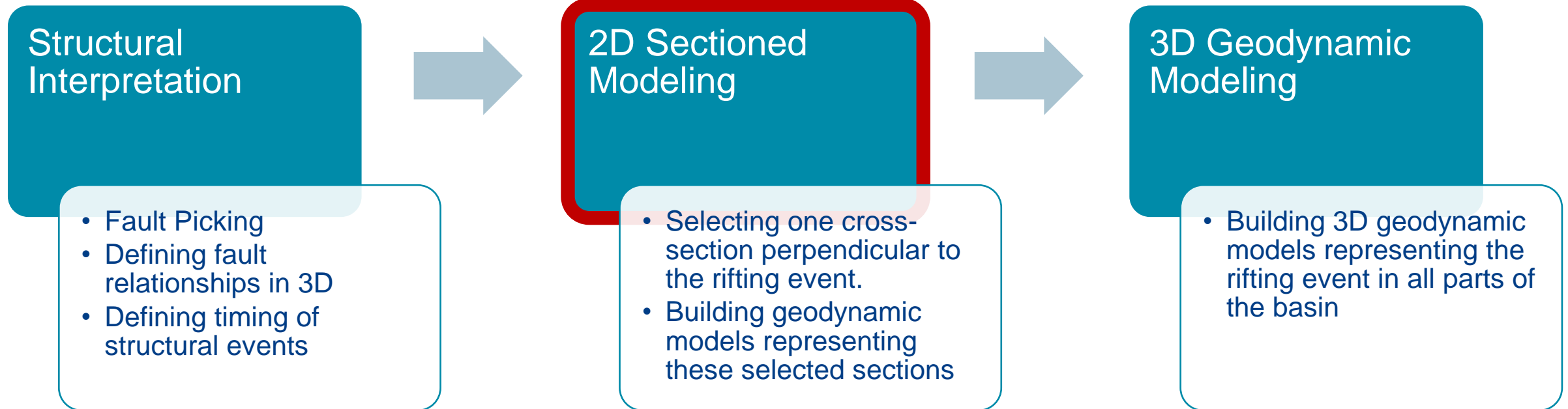
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AREA & GEOLOGICAL SETTING



WORKFLOW



STRUCTURAL GEOLOGY REINTERPRETED

Fault Interpretations

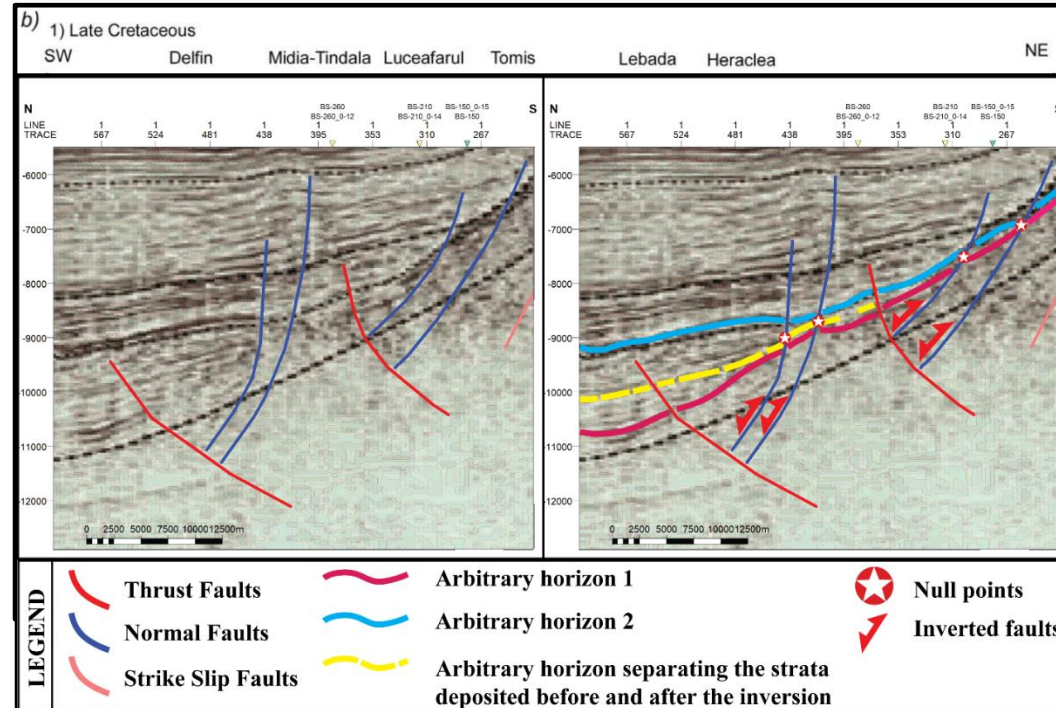
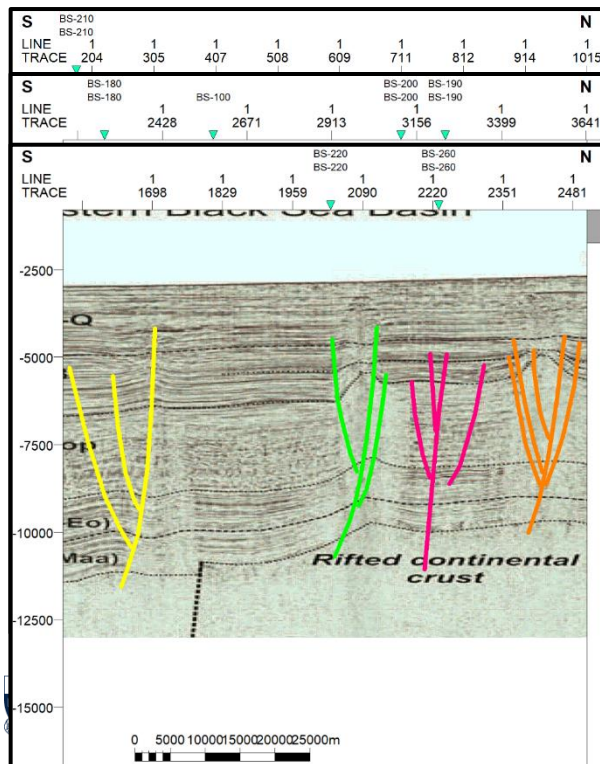
- Normal, reverse, and strike-slip systems
- Timing of events

Tectonic Inversion

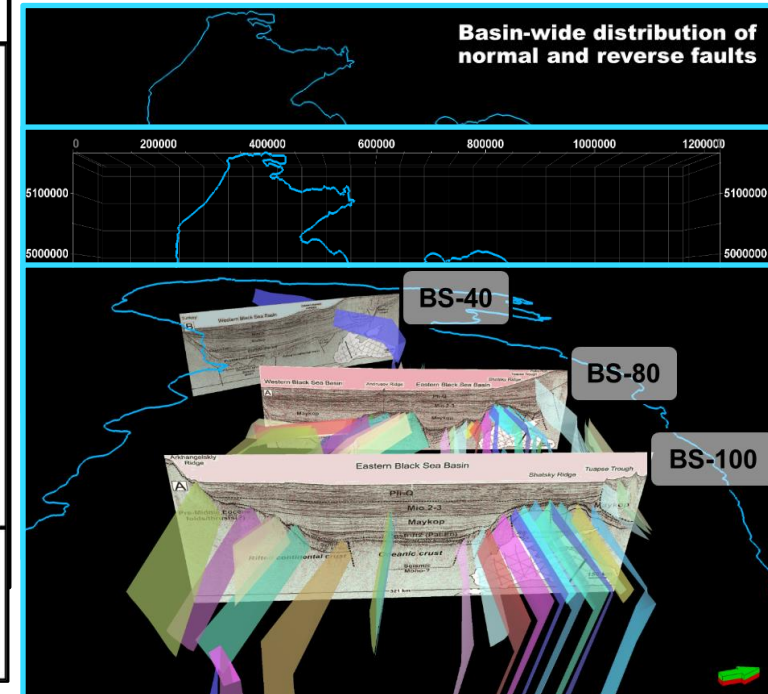
- Extent of inversion tectonics

Fault Network

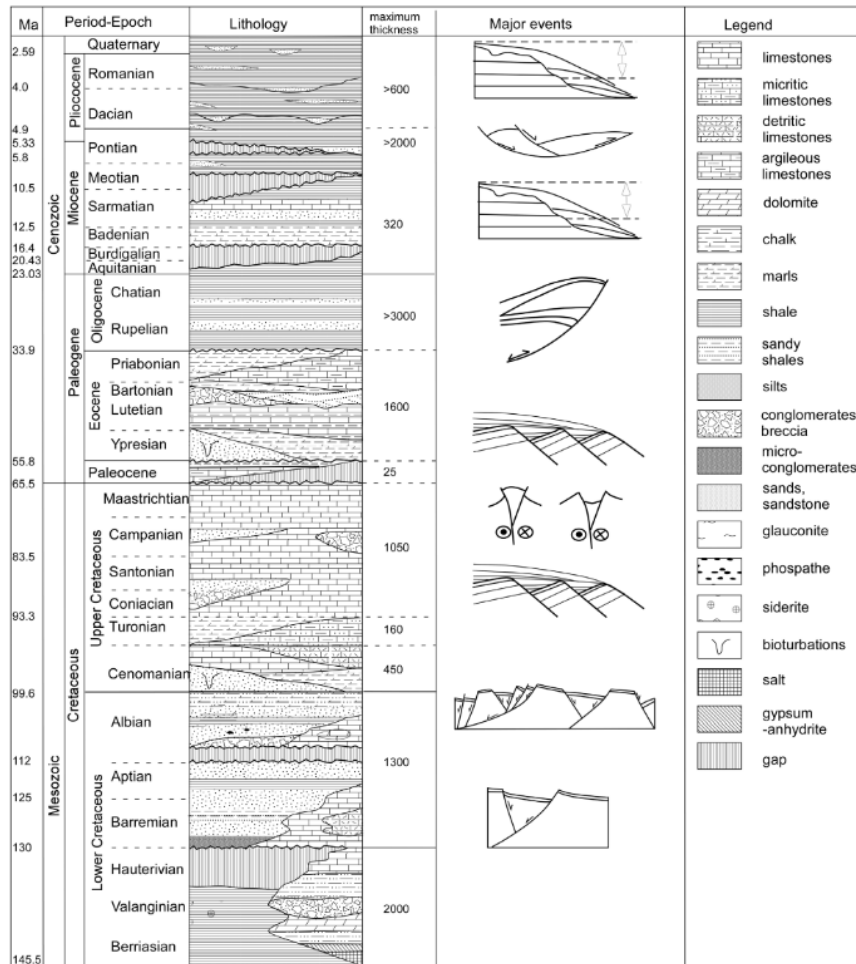
- Fault network in 3D



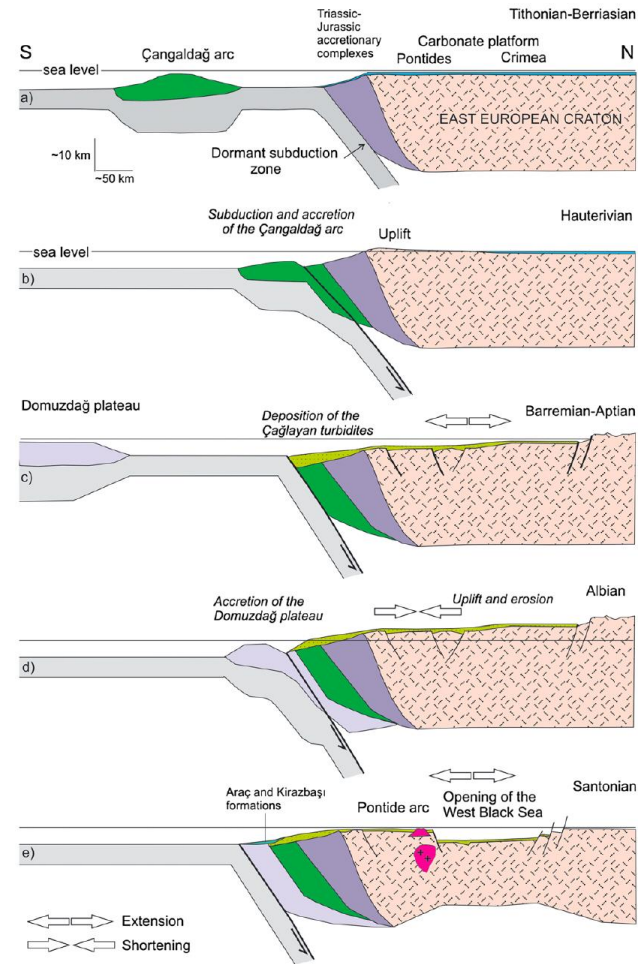
Seismic lines modified from Nikishin et al, 2014



TECTONIC EPISODES



Munteanu et al, 2011

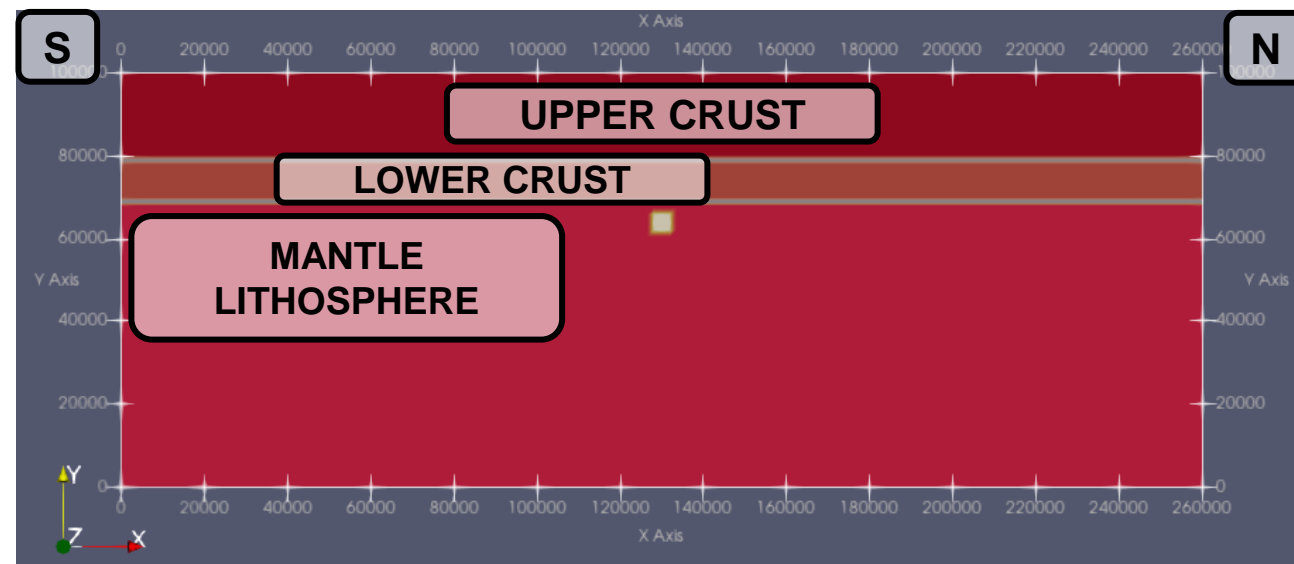
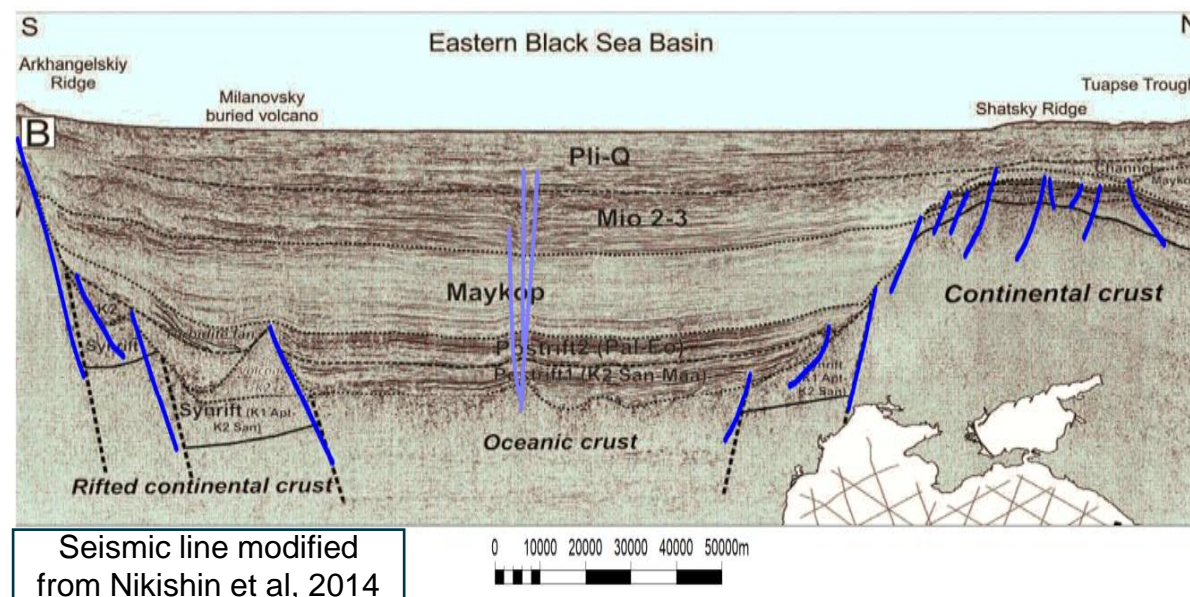
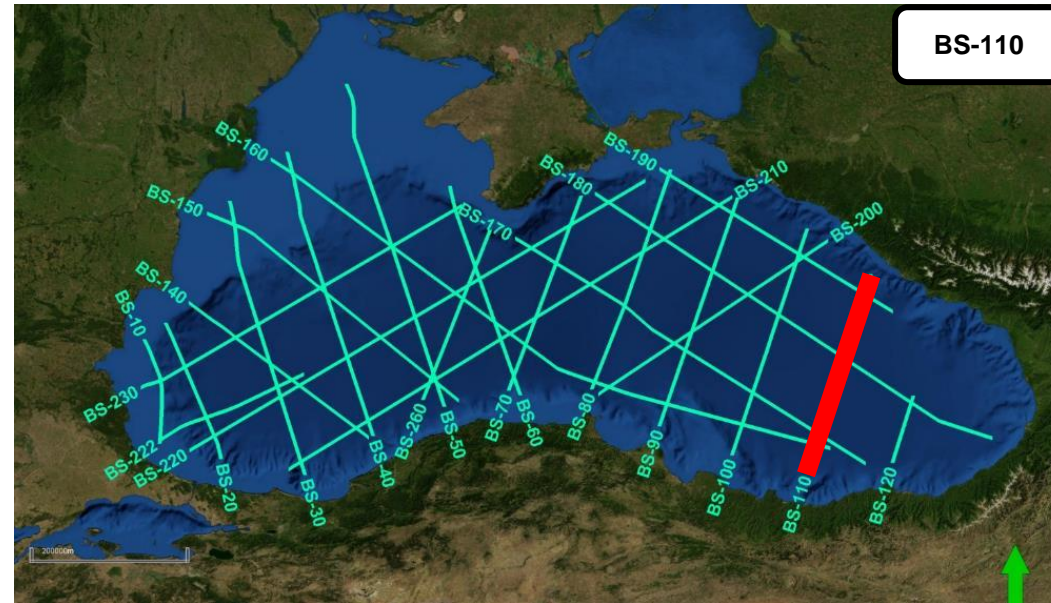


Okay et al, 2013

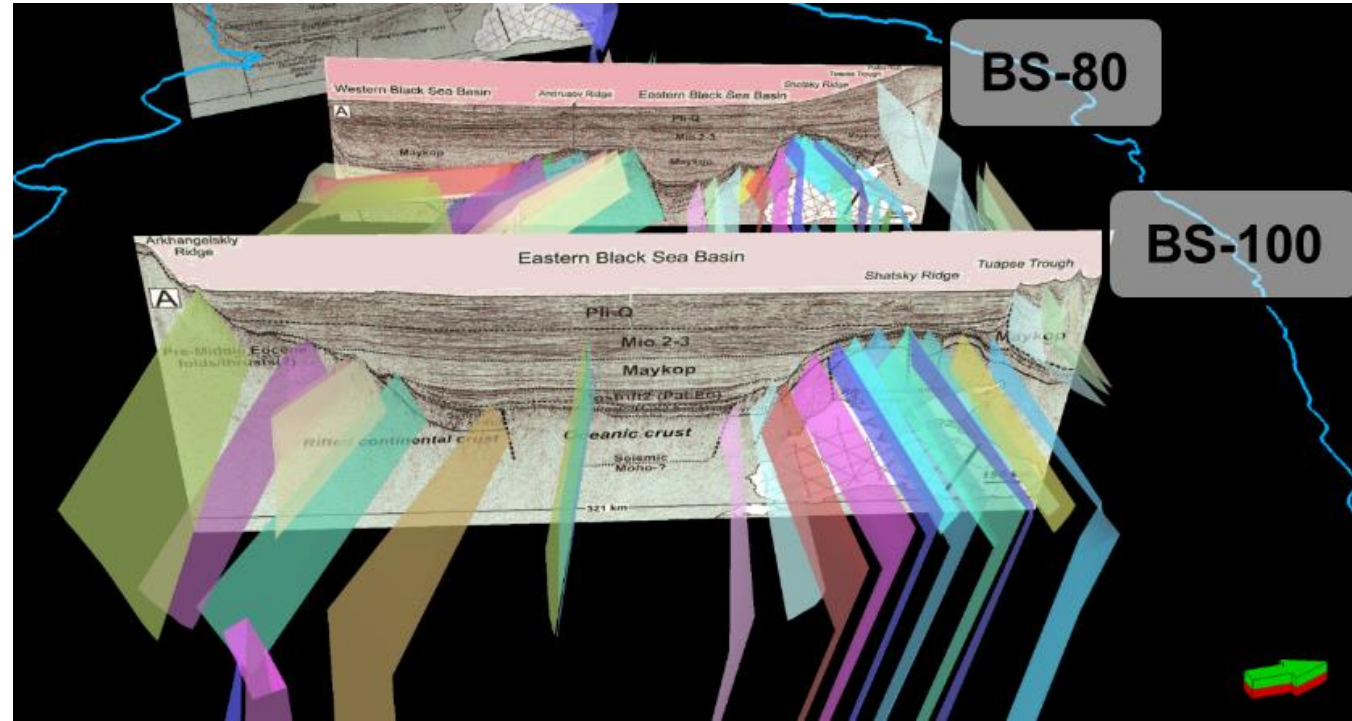
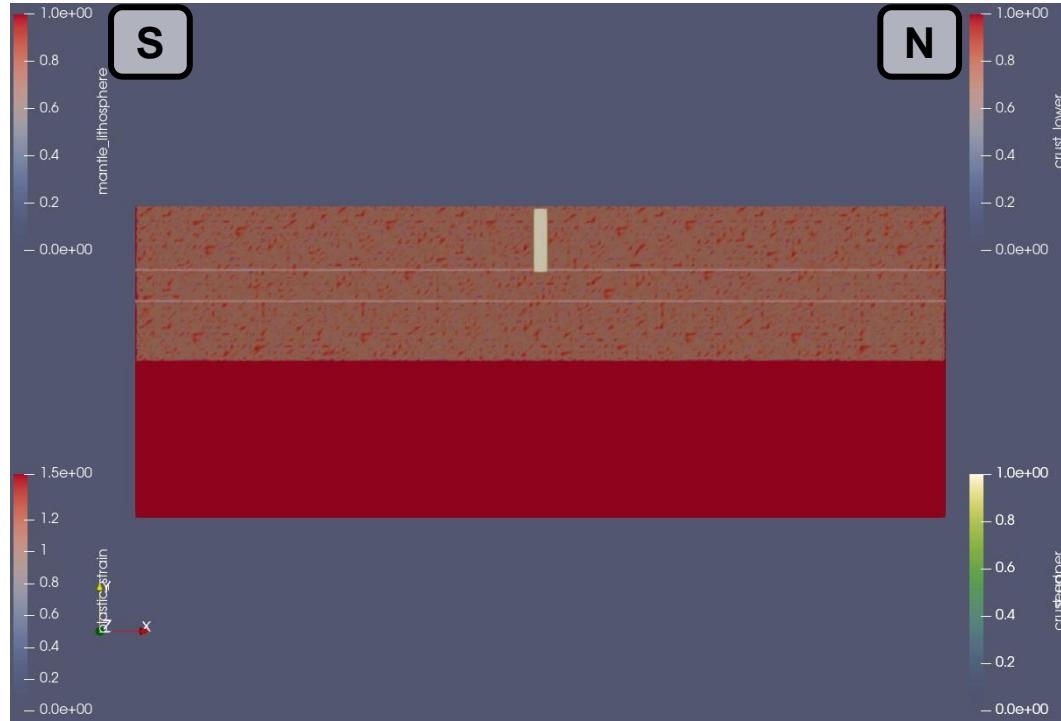
3 Distinct Episodes

- 17MY Extension
- 79MY Extension
- 34MY Compression

SECTIONED COMPUTATIONAL MODELS – MODEL SETUP



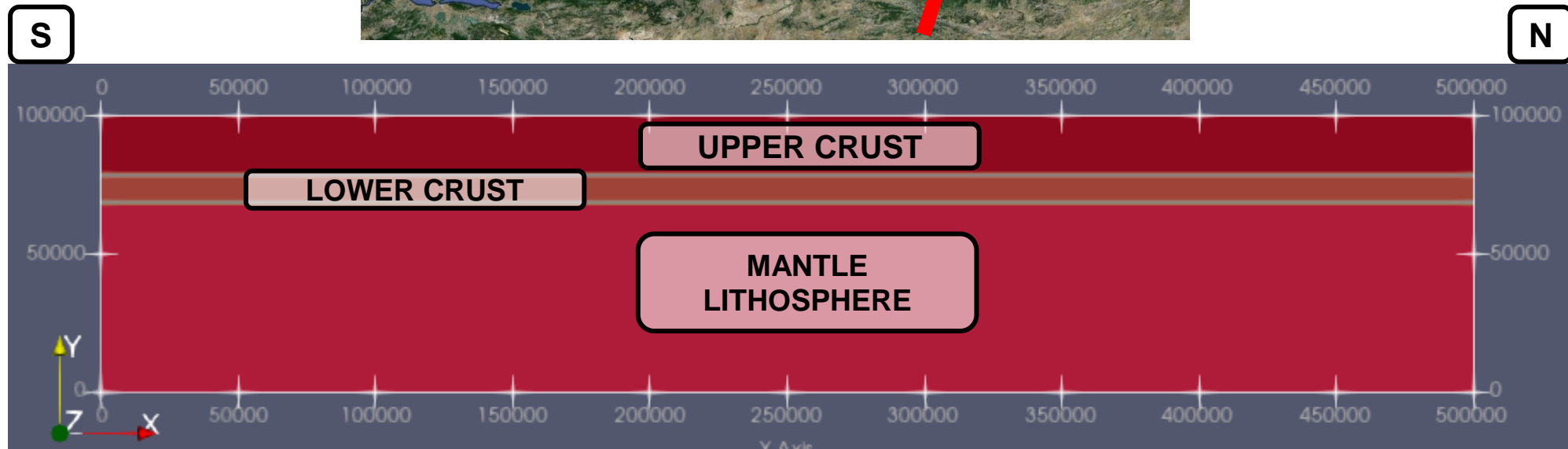
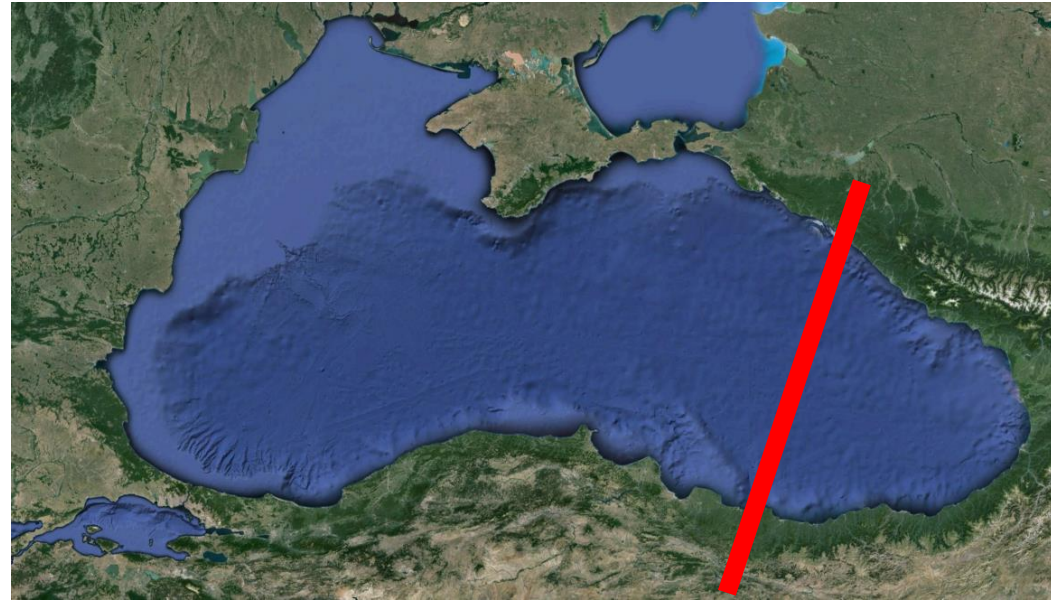
UNDERSTANDING THE VARIABLES THROUGH ITERATIONS



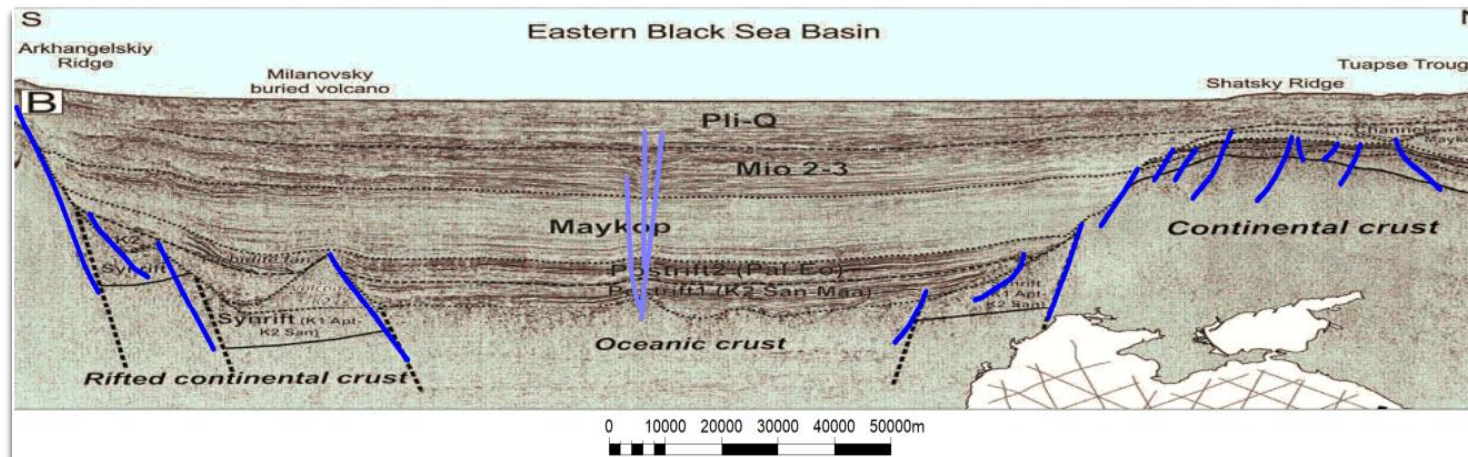
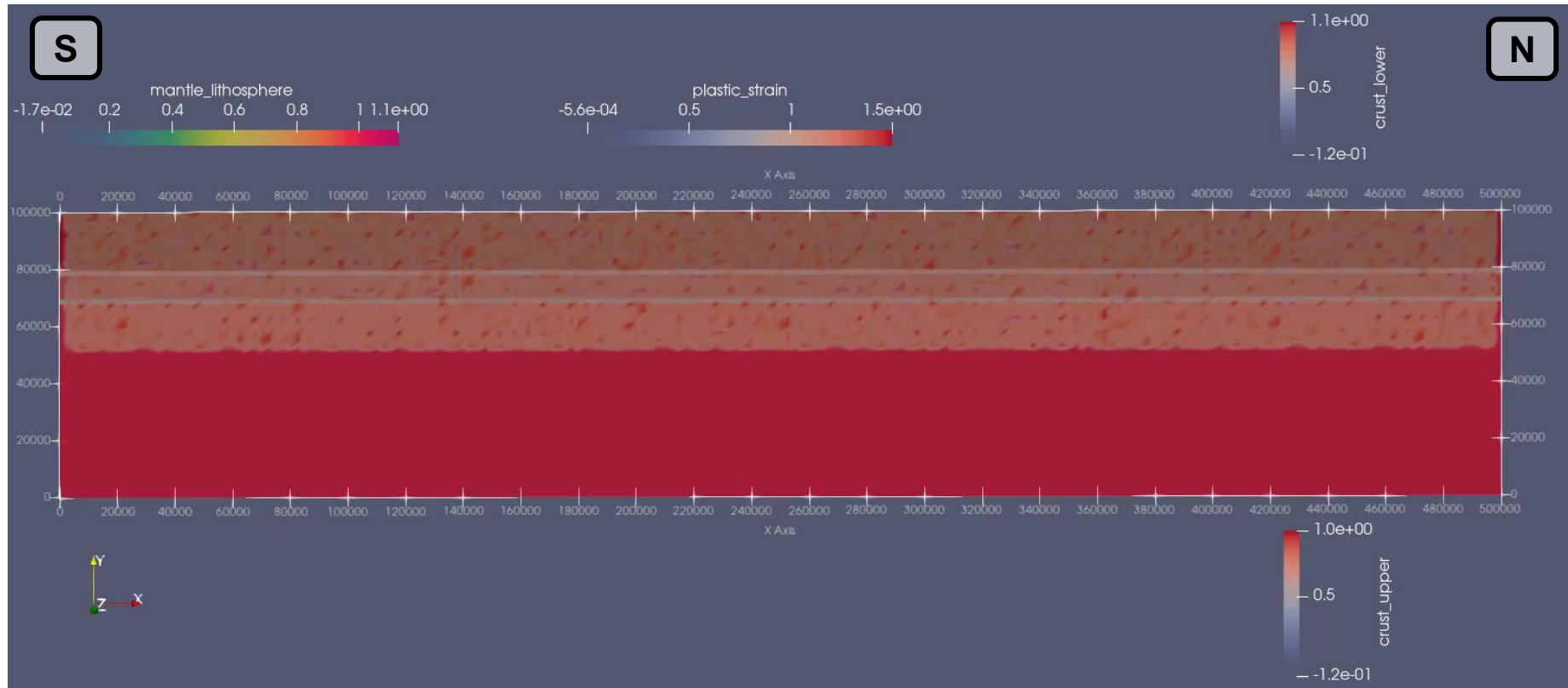
Iterations for:

- Extension rate
- Break-up initiation location
- Stages of extension

SECTIONED COMPUTATIONAL MODELS – MODEL SETUP



MODELS VS REALITY



THANK YOU!

