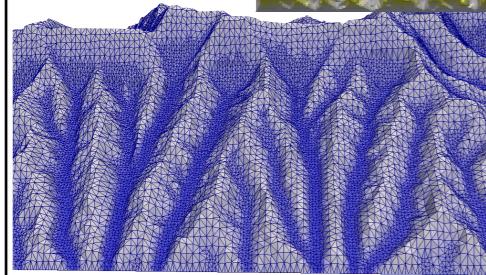
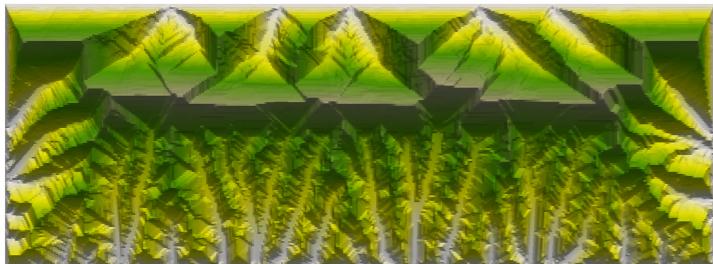
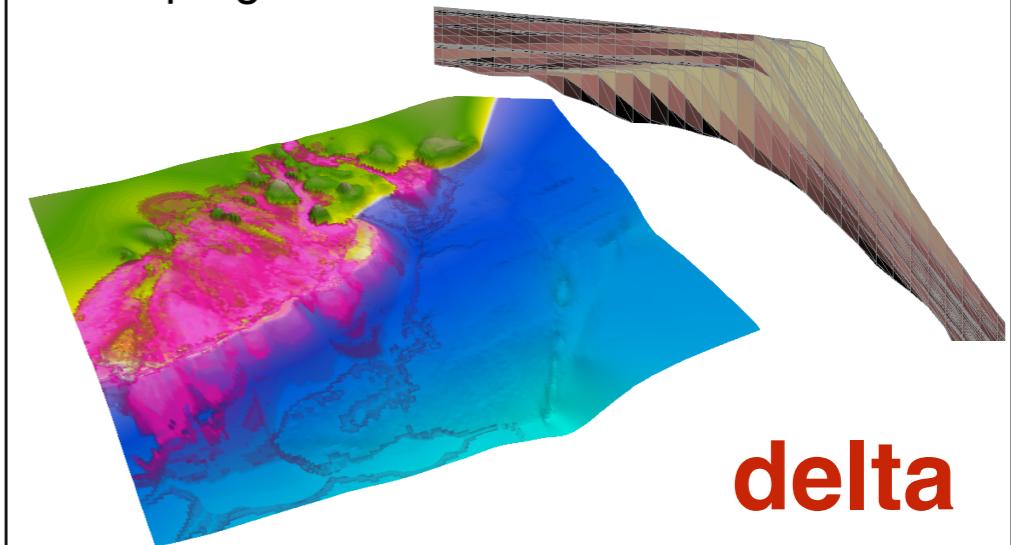


Ridge formation



ridge

Delta progradation

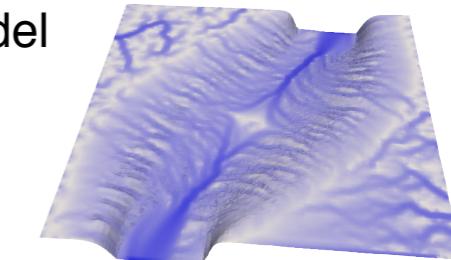


delta

LECODE

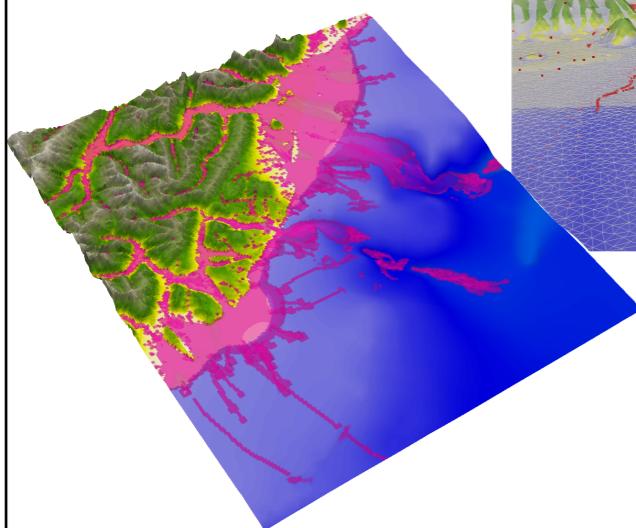
Landscape
Evolution
Climate
Ocean
Dynamic
Earth

Rift model



rift

Source 2 sink model



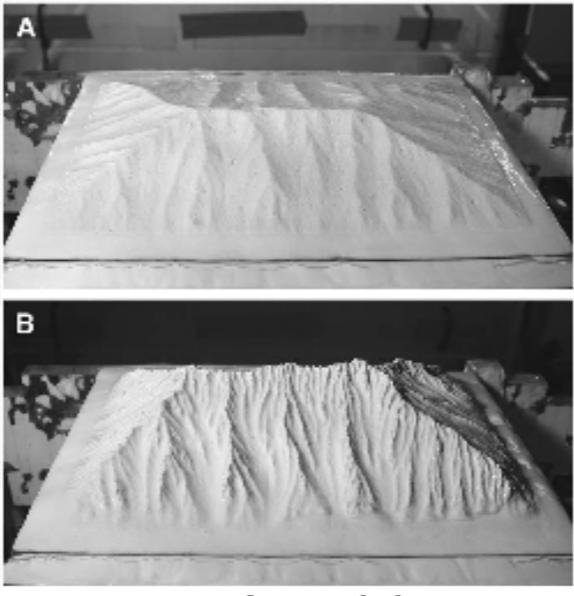
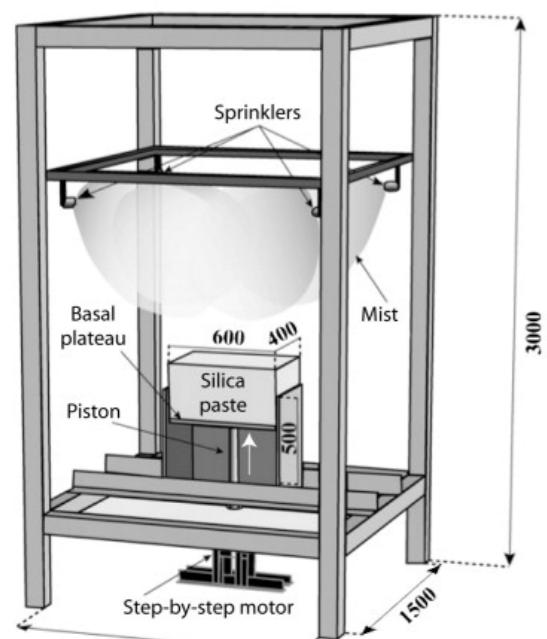
src2sk

LECODE
hands-on examples

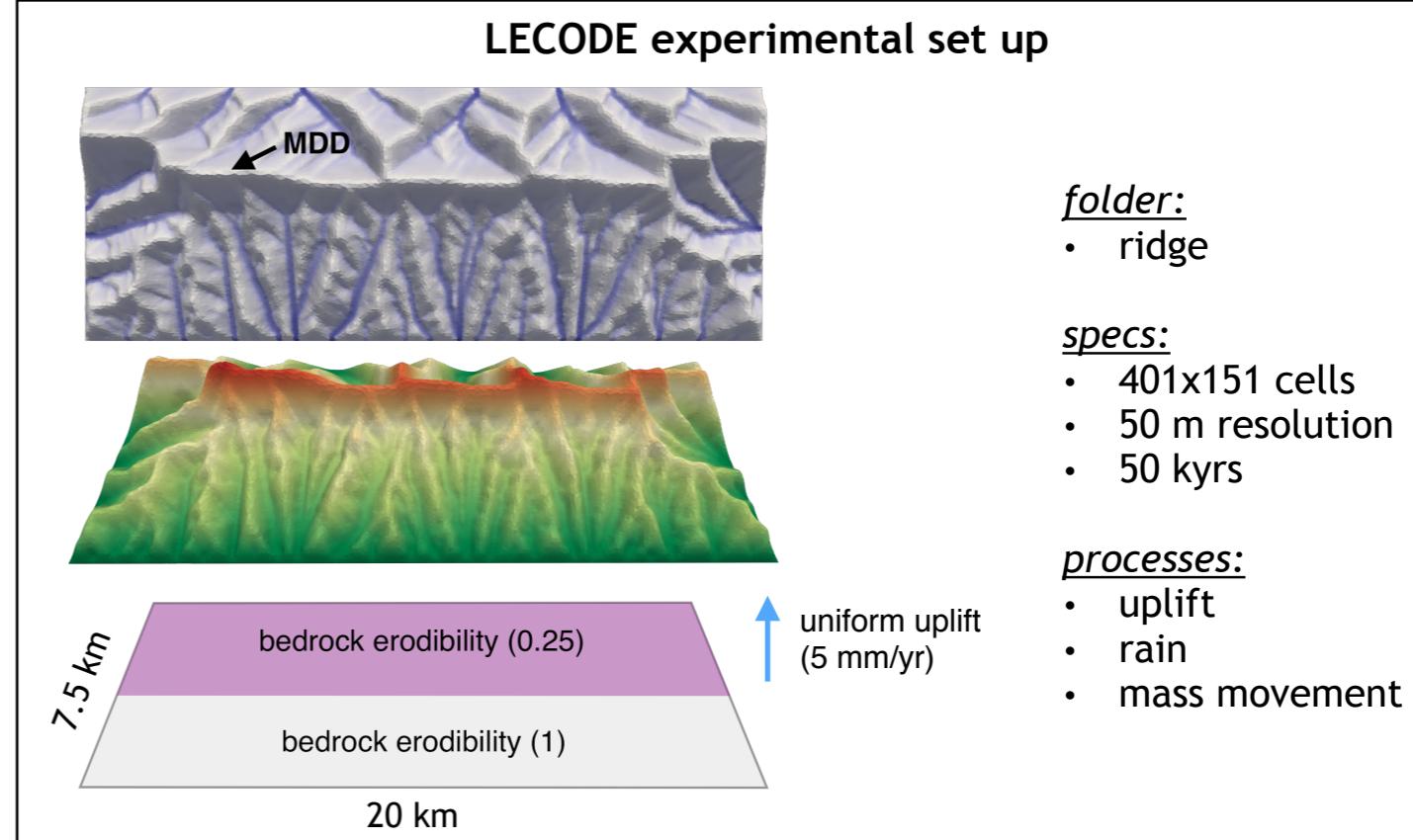
tristan.salles@csiro.au

Ridge formation - Migration of drainage basins with varying rock erodibility

Climate and tectonic forcing



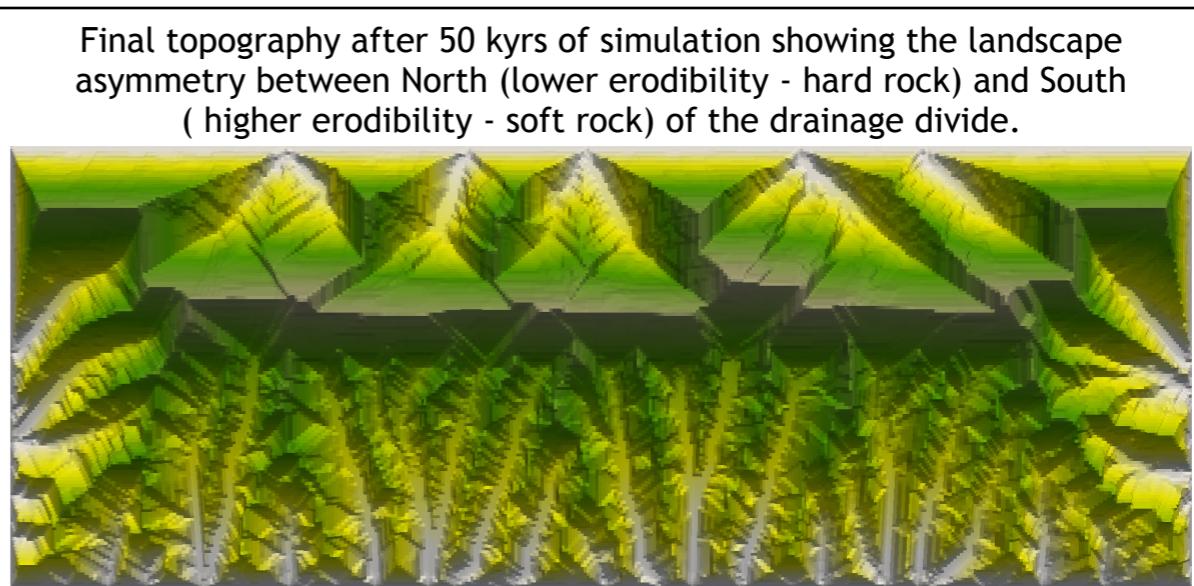
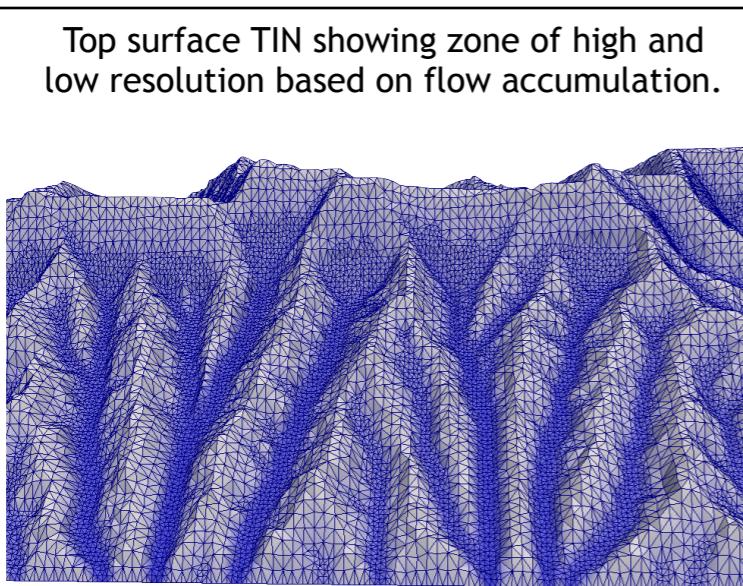
The ridge experiment is a sort of upscaled version of the work from Bonnet & Crave (2003).



folder:
• ridge

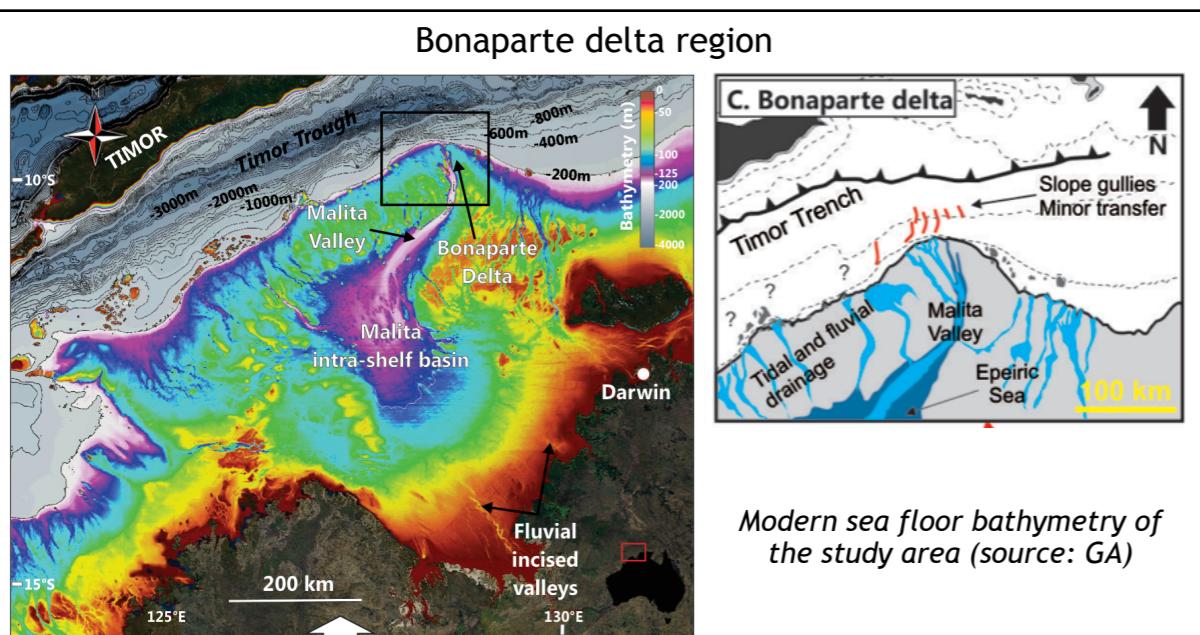
specs:
• 401x151 cells
• 50 m resolution
• 50 kyrs

processes:
• uplift
• rain
• mass movement

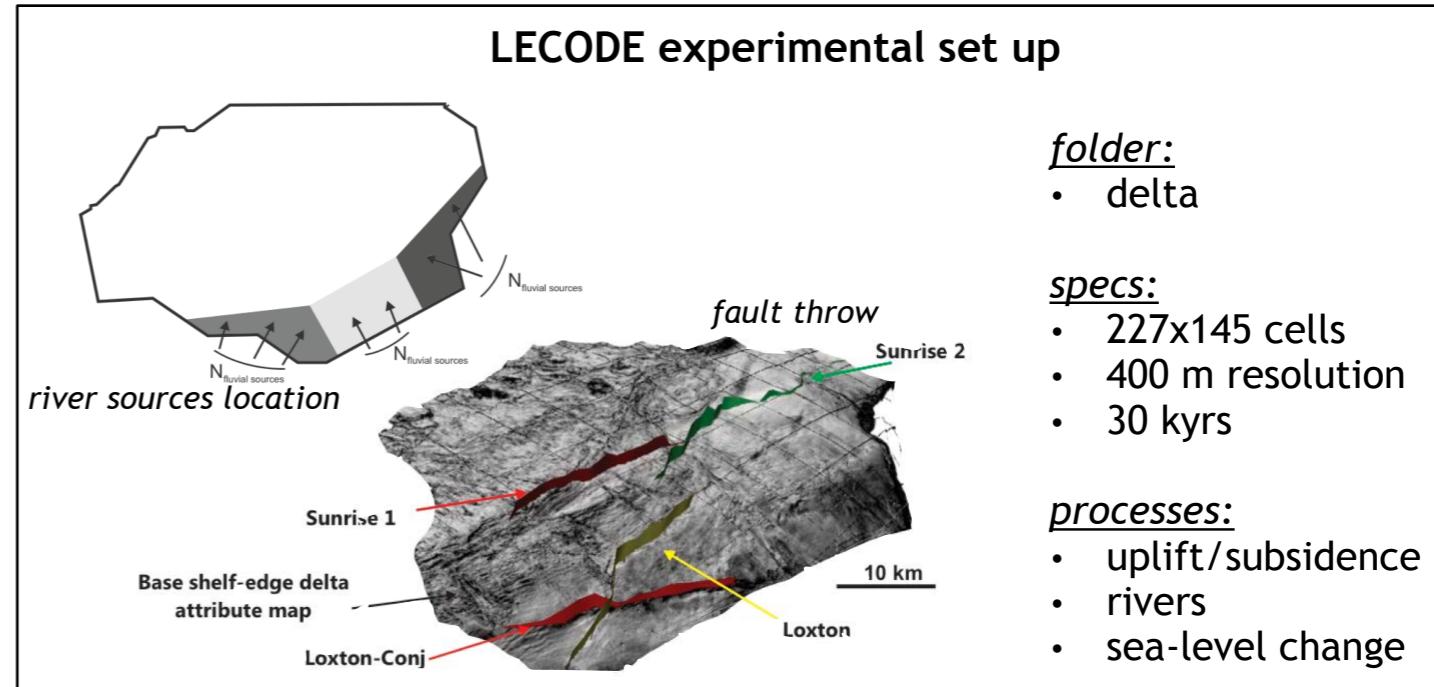


See Salles & Duclaux, 2014 for additional information regarding landscape morphometrics, sediment yielding, channel sedimentation & alluvial terraces.

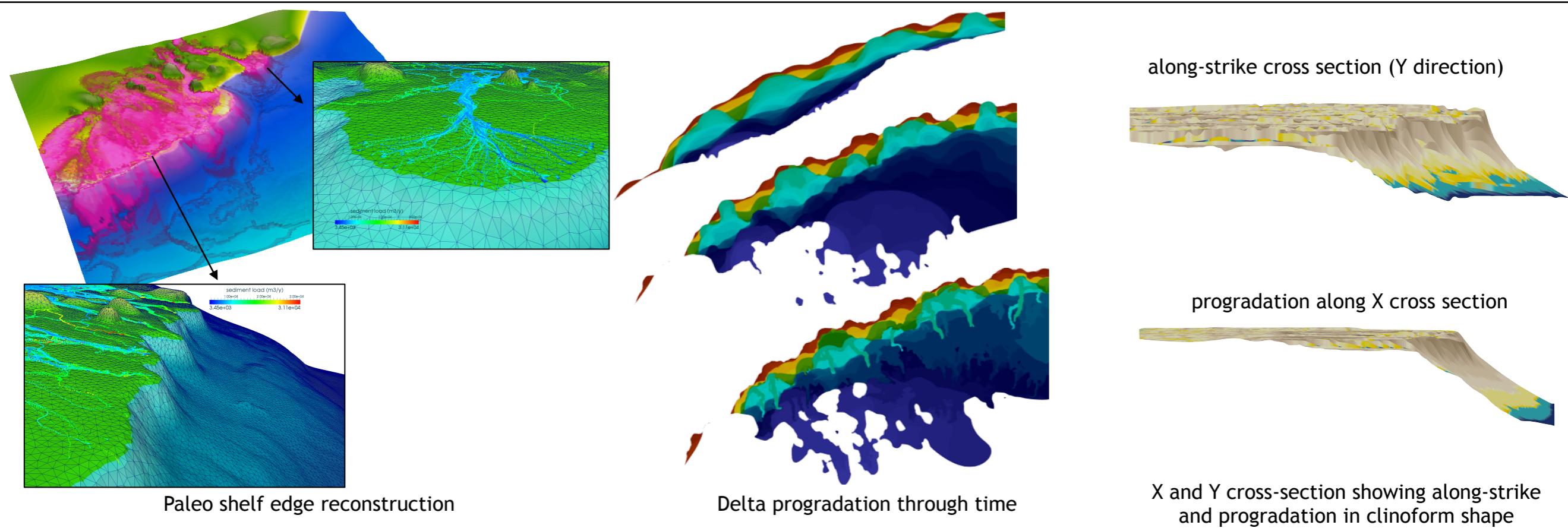
Delta progradation - First phase in Bonaparte delta evolution



The Bonaparte shelf edge delta is associated with low sediment input in comparison to the fluvial dominated Niger & Nile.
See Bourget et al. (AAPG 2013) for a more detailed understanding of how LECODE was applied to the Bonaparte delta.



- folder:**
 - delta
- specs:**
 - 227x145 cells
 - 400 m resolution
 - 30 kyrs
- processes:**
 - uplift/subsidence
 - rivers
 - sea-level change

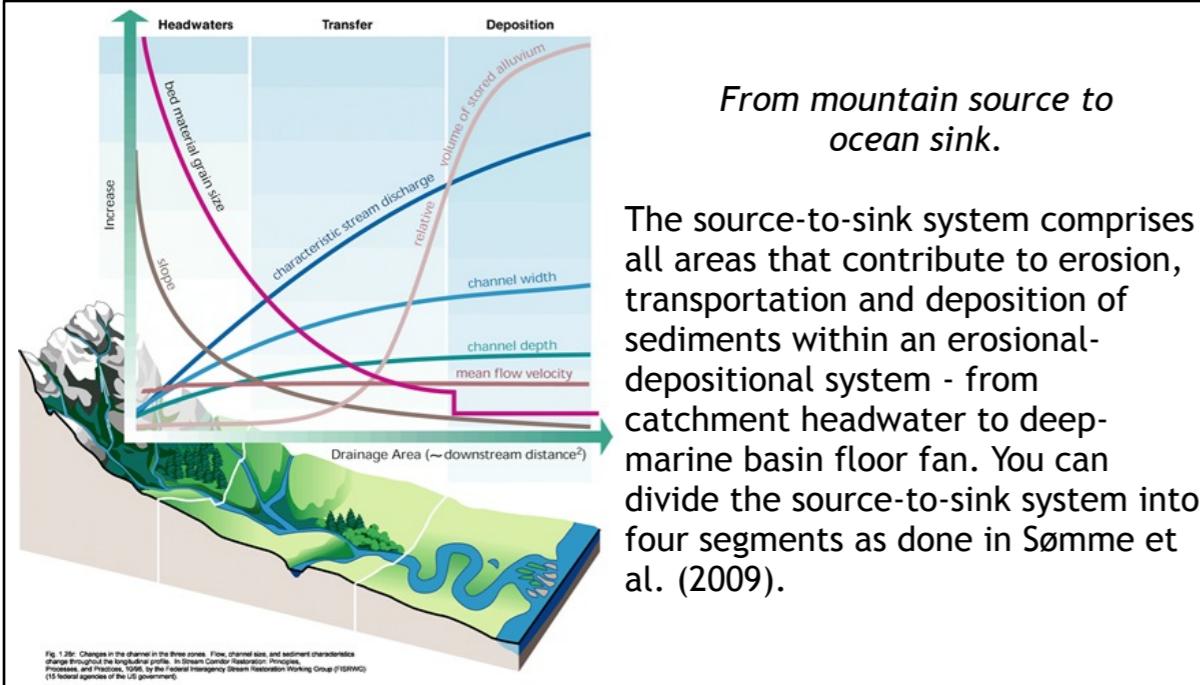


Source 2 sink experiment - From rains to rivers to turbidity currents

LECODE

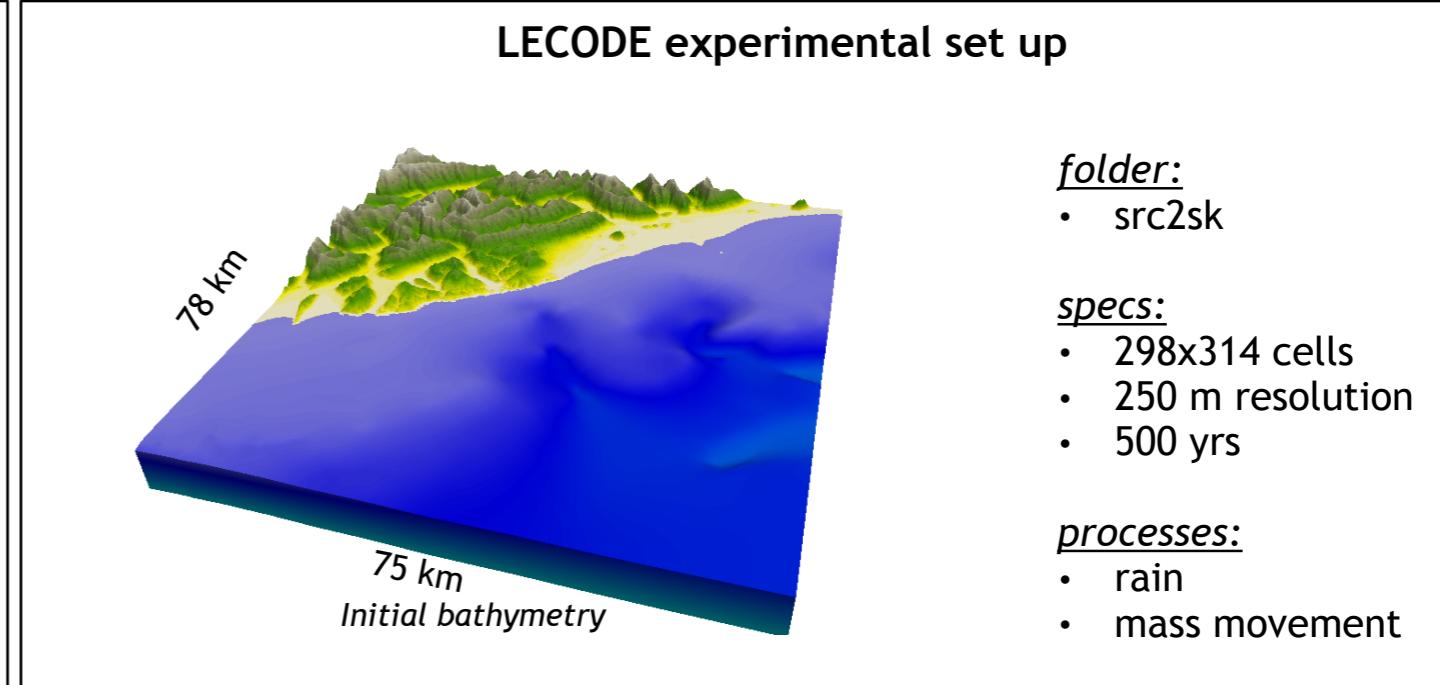


Landscape
Evolution
Climate
Ocean
Dynamic
Earth



From mountain source to ocean sink.

The source-to-sink system comprises all areas that contribute to erosion, transportation and deposition of sediments within an erosional-depositional system - from catchment headwater to deep-marine basin floor fan. You can divide the source-to-sink system into four segments as done in Sømme et al. (2009).



folder:

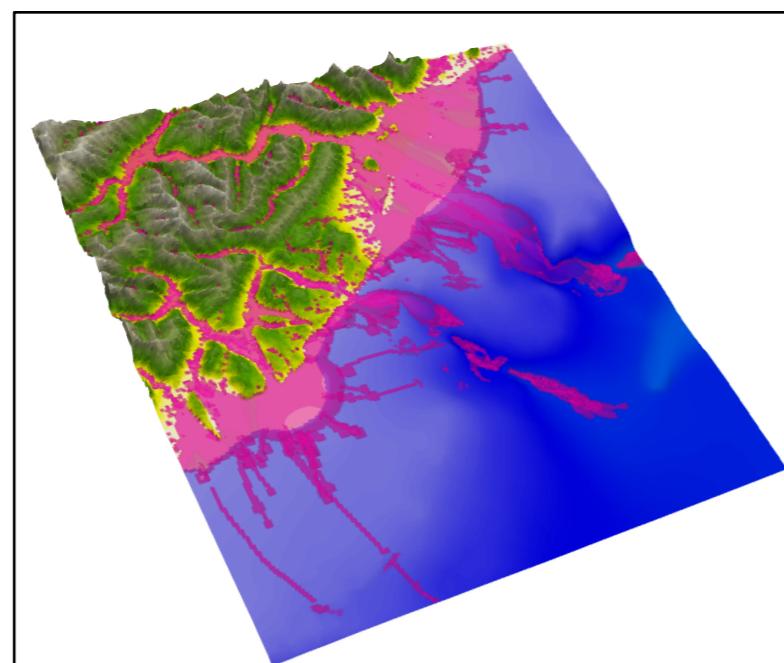
- src2sk

specs:

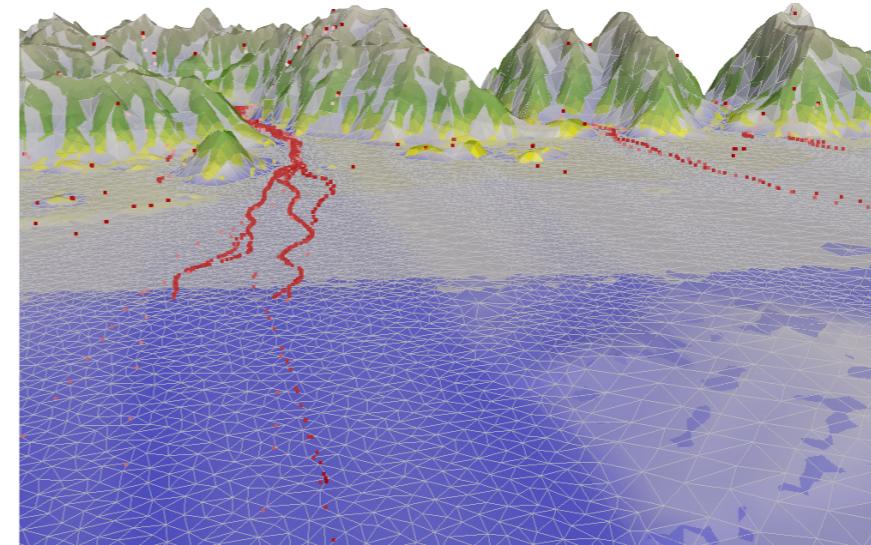
- 298x314 cells
- 250 m resolution
- 500 yrs

processes:

- rain
- mass movement



Sediment transported from erosion by rain to the ocean after 500 years.



Visualisation of river streams coming from the valley to the alluvial plain and plunging to the sea as turbidity currents.

Rift model - Stratigraphic modelling of continental rifting

