

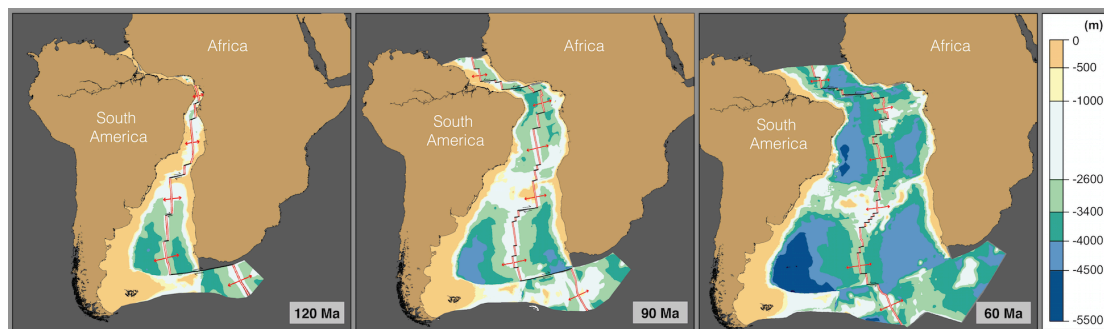
Highs and lows of the South Atlantic

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It is no surprise that the opening of the South Atlantic Ocean is one of the most extensively researched problems in geodynamics. After all, it was the similarity of the coastlines of South America and Africa that inspired the basic foundations of plate tectonic theory. An accurate representation of the plate motions that led to the growth of this ocean basin is crucial to understanding the dynamics of its margins, the formation of petroleum systems and the driving mechanisms behind present and past water circulation patterns. However, for a fuller understanding, the evolution of depth through time also needs to be considered.

Changes in continental configurations exert a critical control over the dynamics of oceans and, with them, global climate, nutrient distribution and subsequent floral and faunal evolution. We have, for the first time, produced a series of well-constrained paleobathymetric reconstructions for the South Atlantic, detailing the opening and closure of oceanic gateways and the evolution of submarine topography. These reconstructions illustrate the central role that this ocean has played in the formation of Antarctic ice sheets and the development of deep bottom water currents leading to the establishment of global ocean circulation.



Read more about this work:

Pérez-Díaz, L. and Eagles, G., (2017). South Atlantic paleobathymetry since early Cretaceous. *Scientific Reports*, **7**, 11819, <https://tinyurl.com/south-atlantic>