

Why do Atlantic and Pacific water masses differ ?

- Premise : with identical initial conditions, present day Atlantic and Pacific basins would evolve differently.
- Premise : two identical ocean basins, symmetrical in longitude, separated by identical continents would not evolve differently.

Question ?

- What are the key differences between these two configurations that are responsible for the different evolution ?

Hypotheses

- Atlantic Connection to the Arctic.
- Basin size.
- Basin geometry.
- Atmospheric moisture transport across Central America to the Pacific.
- Aghulas salinity transport to Atlantic.

Base Experiment

- Featureless continents.
- Sector oceans with correct widths, and geographic positions.
- Realistic ACC Passages.

Similar base evolution

- Add continental features (mountains).
- More realistic ocean basins.

Different base evolution

- Center basins 180° apart in longitude.
- Two identical Drake Passages.
- Similar Arctic connections.