

Oceanic Climate Systems

Sloane Garelick

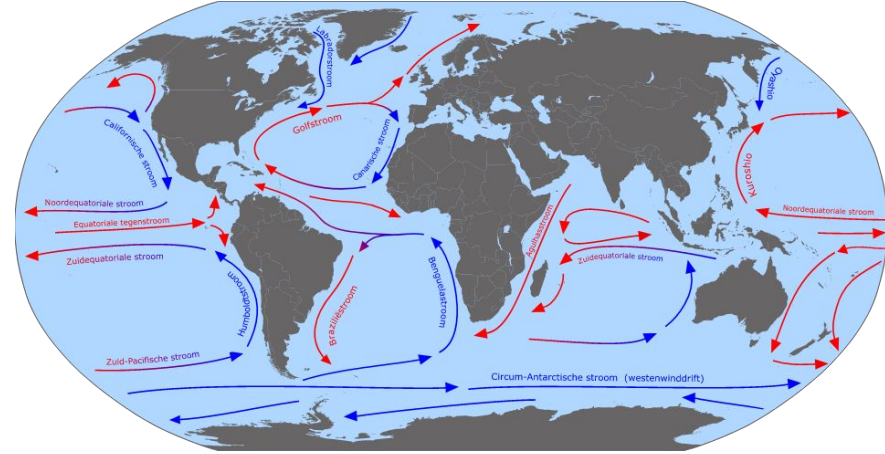


Climatematch
Academy —

Surface Ocean Currents



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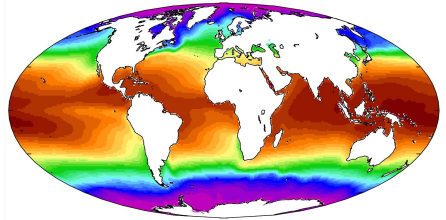


Currents in the upper 100 meters of the ocean are driven by wind

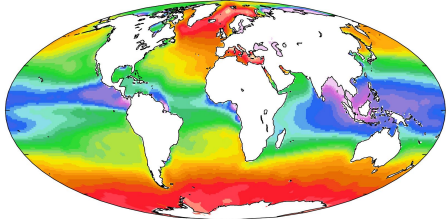


Deep-Water Ocean Circulation

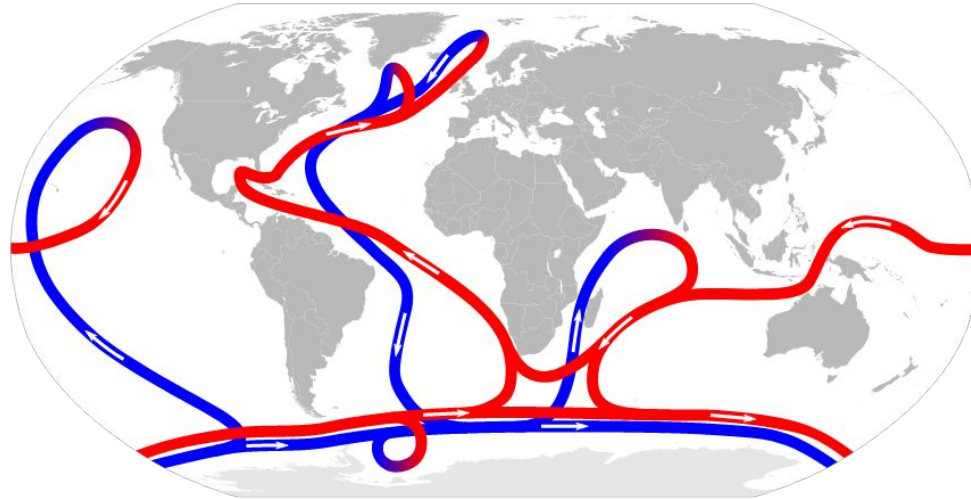
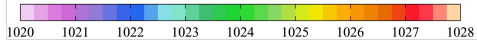
Deep-ocean currents are driven by differences in water density, controlled by water temperature and salinity



Sea-surface temperature [$^{\circ}\text{C}$]



Sea-surface density [kg m^{-3}]

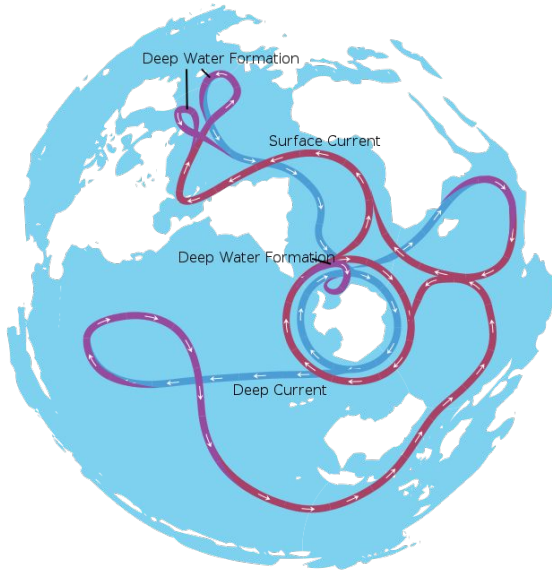


(Plumbago CC BY-SA 3.0; Simmon, CC BY-SA 3.0)



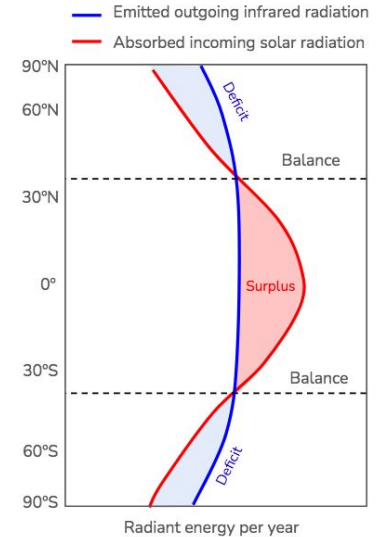
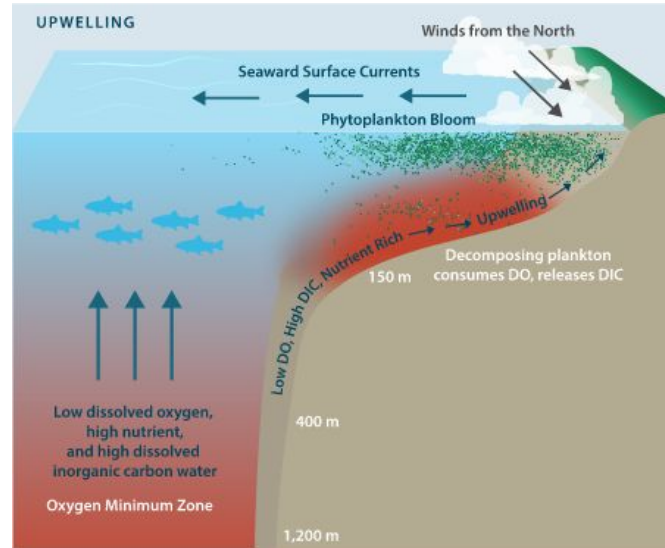
Surface and Deep-Water Interactions

North Atlantic Deep Water (NADW) and
Antarctic Bottom Water (AABW)

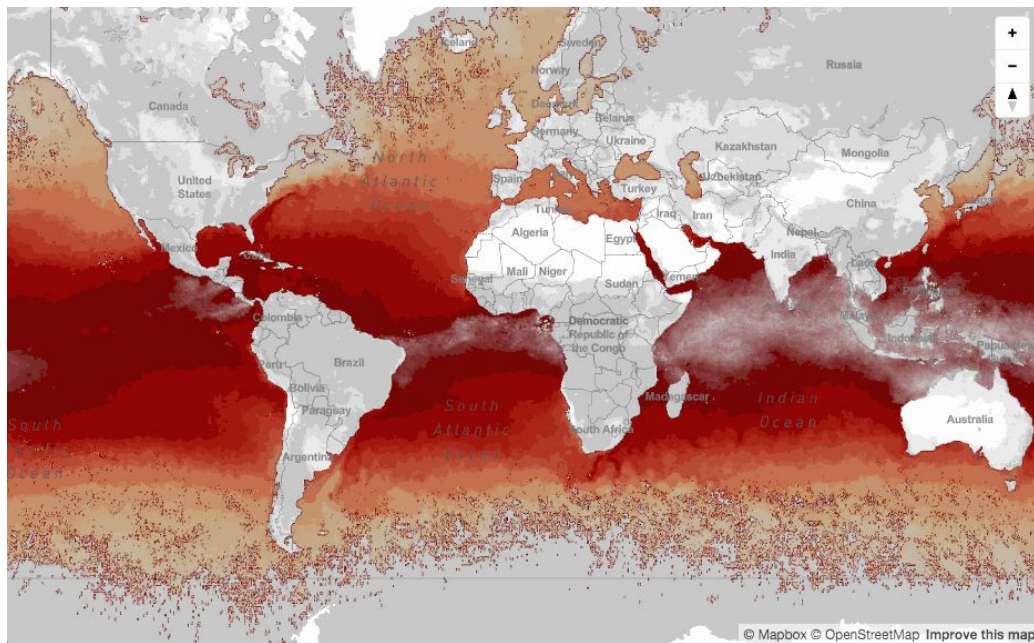


(Avsa, CC BY-SA 3.0; Francis Chan, et al., CC BY-SA 4.0)

Ocean Upwelling



Tutorial 4: Arithmetic and Aggregation Methods



(Jothirnadh and Krishna, CC BY-SA 4.0)

- In this tutorial, we'll explore monthly global sea surface temperature (SST) data from the Community Earth System Model v2 (CESM2)
- We'll create a map of SST and use various arithmetic and aggregation methods to interpret the data

