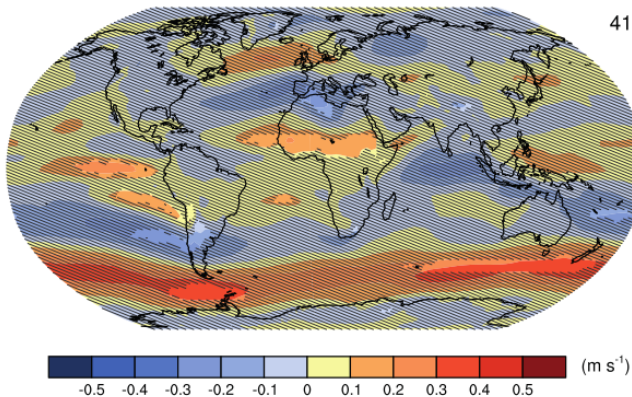


# Climate Change Scenario

we explore the independent and isolated impacts of the following three changes in forcing of the MOC on the circulation and explore the climatic implications

## WINDS

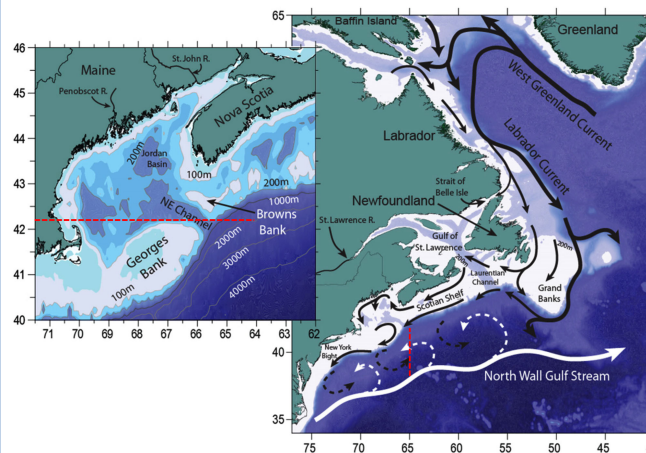
- studies suggest Southern Ocean winds will get stronger and shift south
- we explore how this will impact AMOC and PMOC
- ref: IPCC\_AR5\_Chapter11\_FINAL.pdf



**Figure 11.15** | CMIP5 multi-model ensemble mean of projected changes ( $\text{m s}^{-1}$ ) in zonal (west-to-east) wind at 850 hPa for 2016–2035 relative to 1986–2005 under RCP4.5. The number of CMIP5 models used is indicated in the upper right corner. Hatching and stippling as in Figure 11.10.

## Surface heating in North Atlantic

- studies predict Northwest Atlantic where deep waters form will warm up
- whether AMOC gets weaker or stronger is not settled, and we explore here
- ref: North\_Atlantic\_Climate\_change.pdf



## Surface freshening around Antarctica

- studies suggest land and sea ice loss will freshen up the Southern Ocean
- we explore how this will impact the MOC
- ref: Rintoul\_Nature\_2018.pdf

