Glacial – Interglacial Transitions
As Analogs for our High-CO2 Future

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- Inconsistency between Climate Models and the Paleo Record
- Blocking the “Leak”
- Role of Winds
- Punch Line: Climate models anticipate a more vigorous hydrological cycle and a more stratified polar ocean. Our paleo analog suggests the opposite. The difference is a feedback, missing in the models, in which a warming climate produces a poleward shift in the mid-latitude westerlies.

- Prediction: We will not see the increase in polar stratification predicted by the models.
Antarctic Halocline as Barrier

Models: Barrier **ON**  
Paleo Obs: Barrier **OFF** \{ in a warming climate \}

EQ
thermocline
remineralized CO₂
Increased Atmospheric CO₂

Stronger ACC, Stronger Upwelling

Tropospheric Warming

Poleward Shifted Westerlies