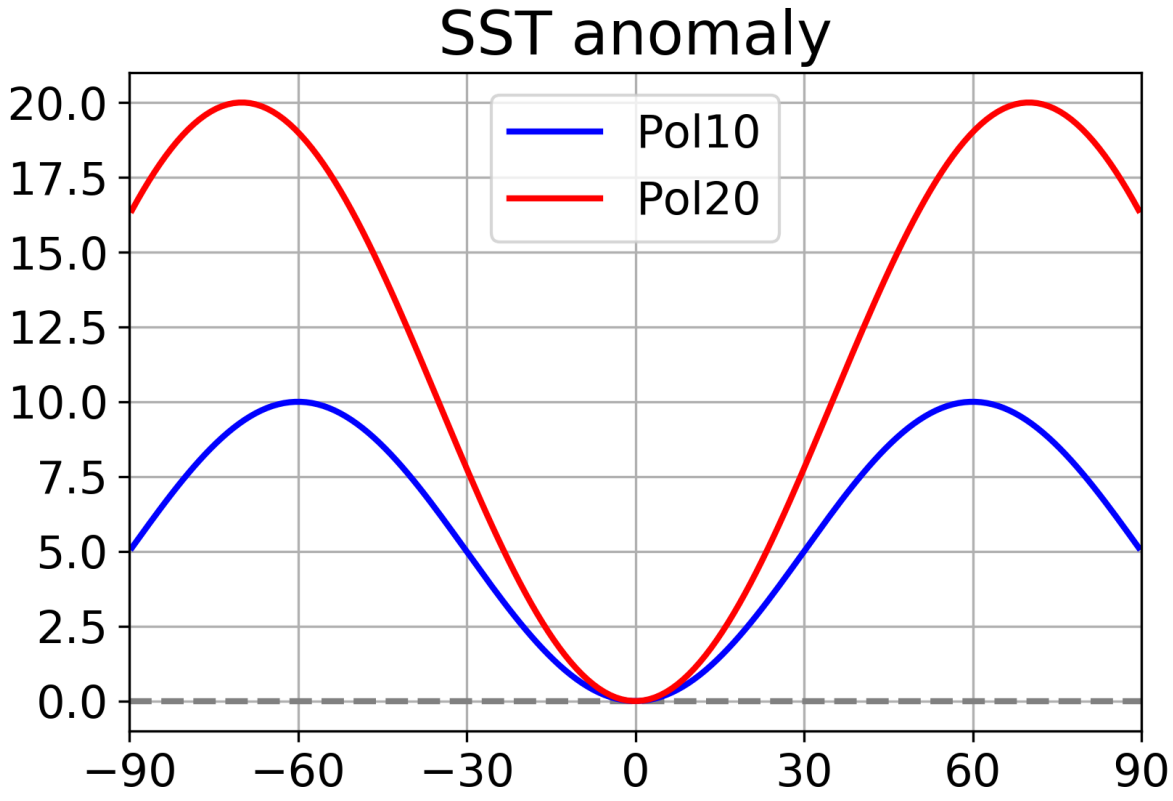
Polar Amplification AMIP experiment



Impose SST anomaly:

- With sea ice fixed at modern;
- With sea ice removed

Goal:
Diagnose responses to past warm climates (Eocene);
Understand polar amplification.

Personnel:
Steve Sherwood, Dan Lunt, Rob Colman, Deepashree Dutta

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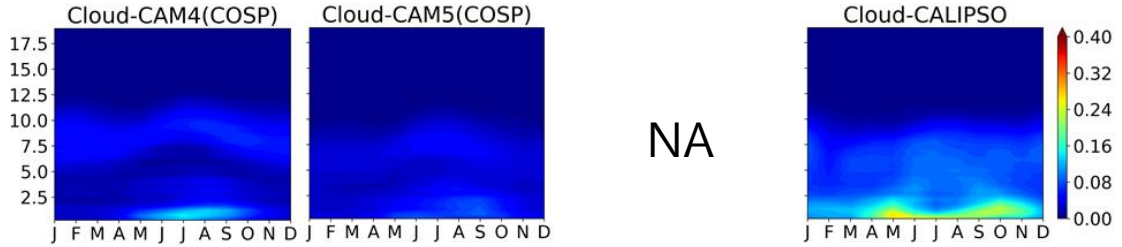
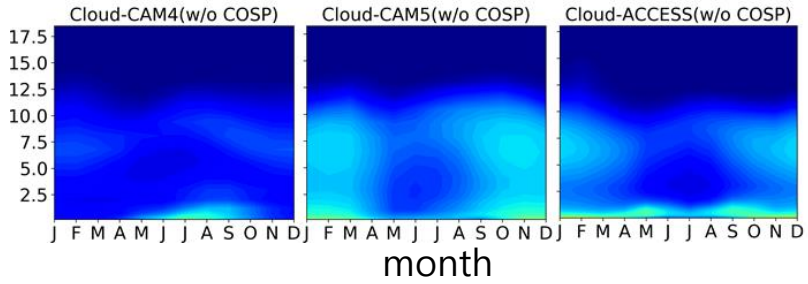
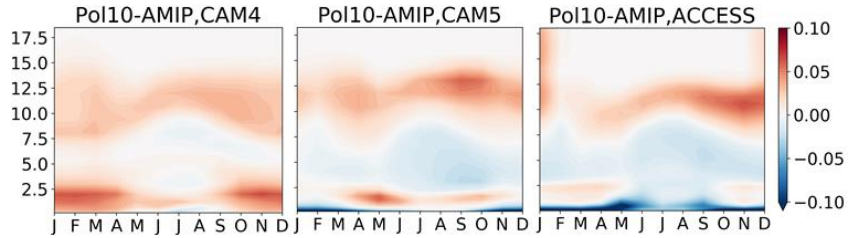
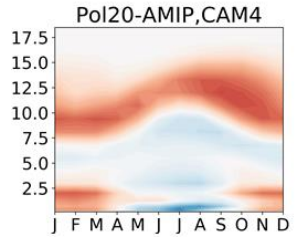
Evaluation of cloud cover (Arctic, 70°-81°N)

HadCM3	CAM4	CAM5	ACCESS	CALIPSO
NA		NA		COSP-CALIPSO
(being rerun)				Model cloud fraction

Response of clouds to POL10/20 SST and sea-ice removal

HadCM3.	CAM4	CAM5	ACCESS
(being rerun)			Pol10-AMIP
			Pol20-AMIP

Polar Amplification AMIP experiment

Initial manuscript in prep (Dutta et al. 2020)

Summary:

- Arctic cloud POL10 responses are similar among the models, except for low clouds, whose responses seems to reflect the global responses to global warming (but only 4 models…)
- Some models (CAM5) are unstable with POL20.
- Removal of sea ice has greater impact on the polar atmosphere than ΔSST in POL10 (not shown).