Extratropical-**T**ropical **IN**teraction (ETIN) Model Intercomparison Project

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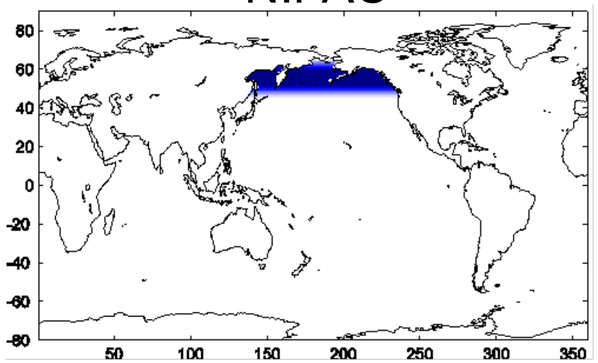
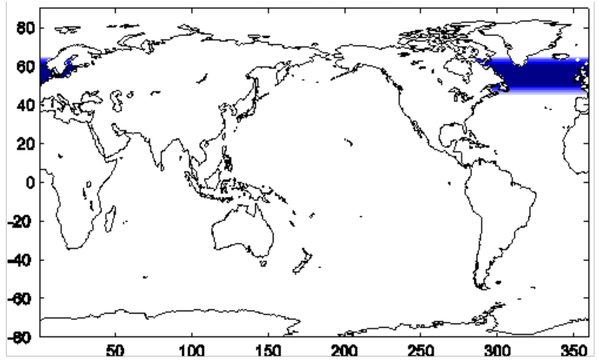
Tier 1 experiments

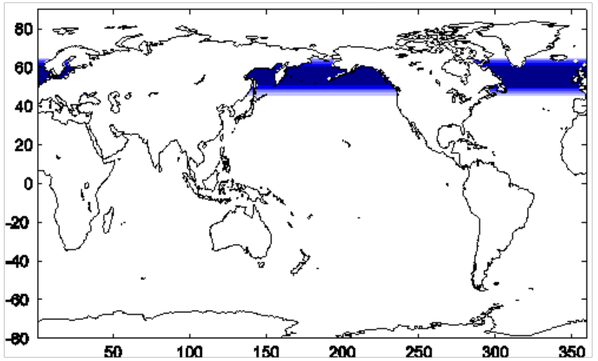
N.PAC



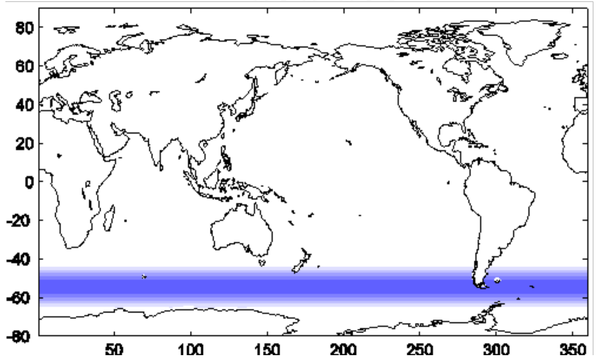
N.ATL



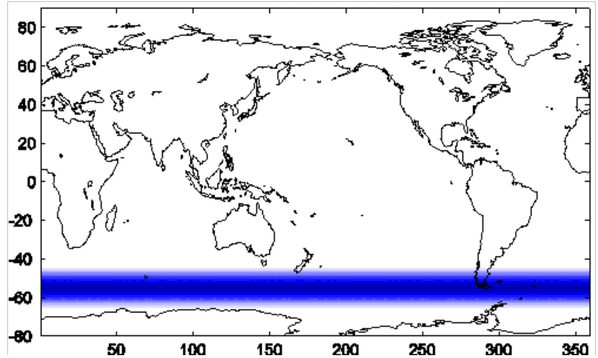
N.OCN



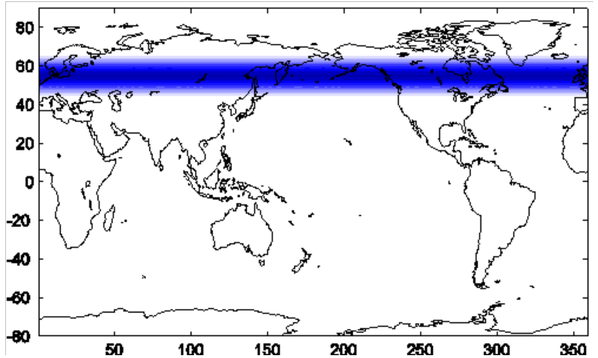
S.OCN



S.TOA



N.TOA



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Experiment design

Experiment	# of years	Notes
CTRL	150	Preindustrial control run as in CMIP5
S.OCN	100	Cooling oceanic regions over 45°S-65°S
N.OCN	100	Cooling oceanic regions over 45°N-65°N (=N.PAC+N.ATL)
N.PAC	100	Cooling oceanic regions over 45°N-65°N in the Pacific basin
N.ATL	100	Cooling oceanic regions over 45°N-65°N in the Atlantic basin
S.TOA	100	Reduce solar flux over 45°S-65°S
N.TOA	100	Reduce solar flux over 45°N-65°N

Confirmed participation

GFDL model (AM4+FLOR), HadGEM, NCAR CESM, CNRM-CM

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Tier 2 experiments

- Slab ocean experiments
- Vary forcing magnitude
- Add lower latitude perturbed experiments
- Perform warming experiments

Core science questions

- How sensitive is the partitioning of energy transport (atmosphere vs ocean) to the region of forcing and the type of forcing (surface vs TOA)?
- How does the tropical response to extratropical forcing vary in coupled and uncoupled experiments?
- How linear is the climate response to the sign and magnitude of forcing?
- How much does the inter-model response vary to different forcings and what does this tell us about (a) the causes of bias in the climatology of those models and (b) the likely fidelity of their future projections?