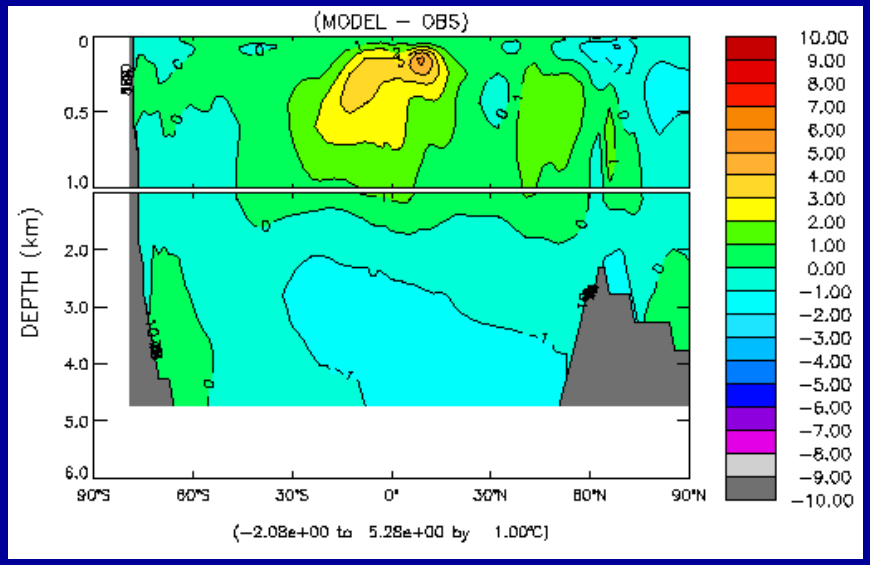
Low Resolution POP

- x3 POP physics ≈ x1 POP physics (no overflows, horizontally-varying vertical diffustivity, …)
- Move to 60-layer vertical grid?



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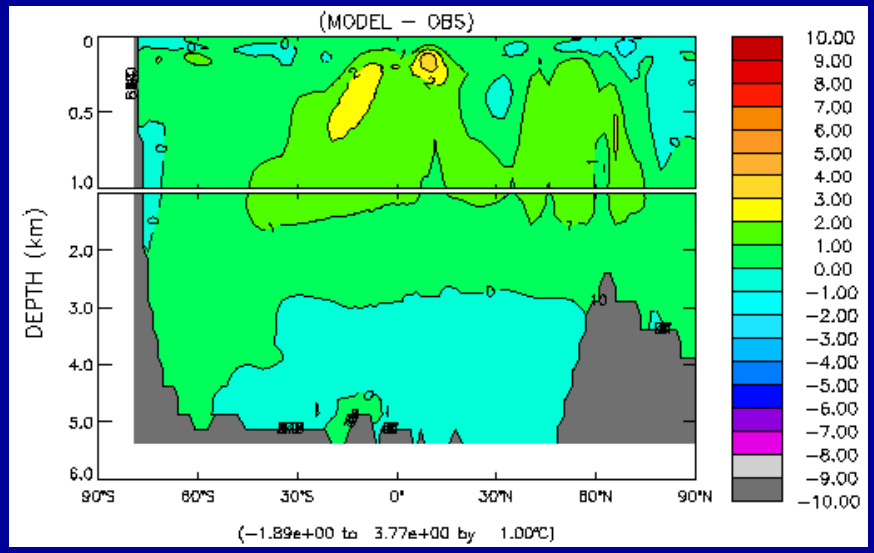

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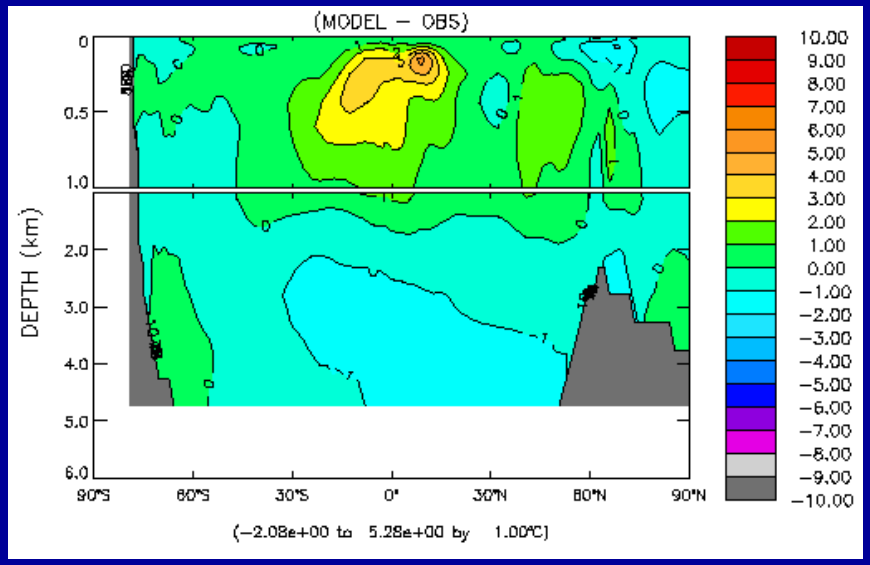
Zonal Global T

Low Resolution POP

- Move to 60-layer vertical grid?



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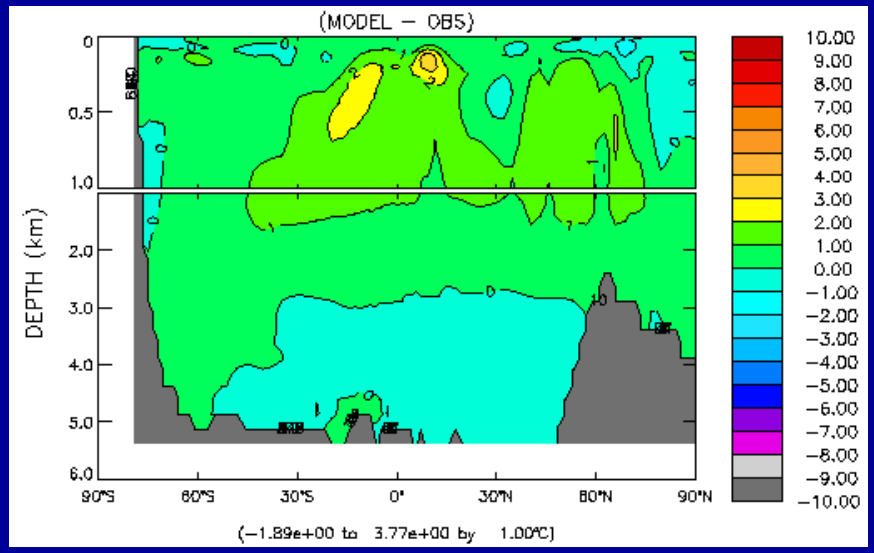

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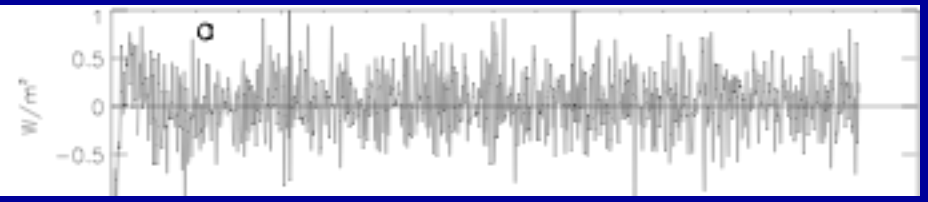
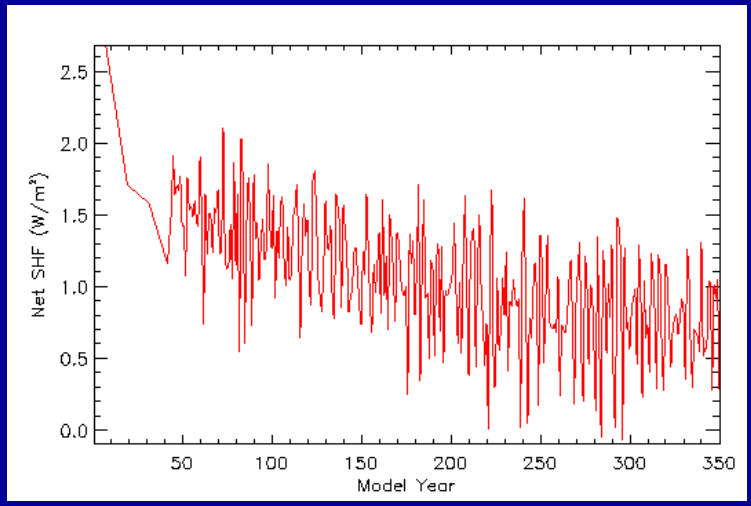
	25	60
UNCOUPLED (1 bf node):	350 sim. yr/day	194 sim. yr/day
COUPLED (2 bf nodes):	51 sim. yr/day	51 sim. yr/day

CCSM3 T31x3

CCSM4 T31x3





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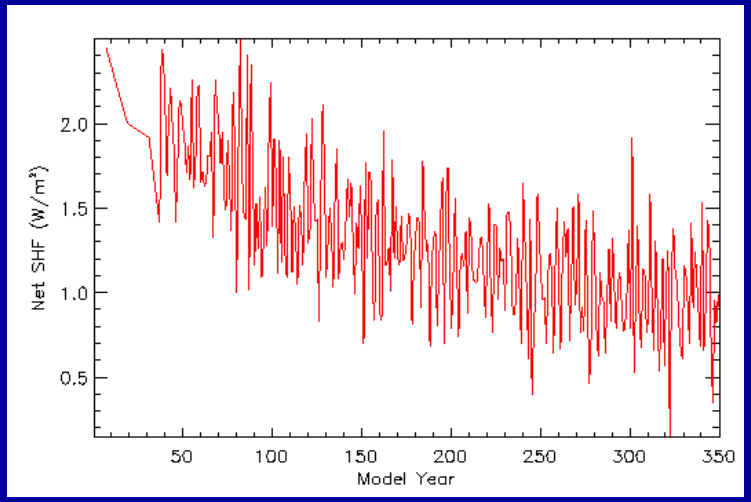

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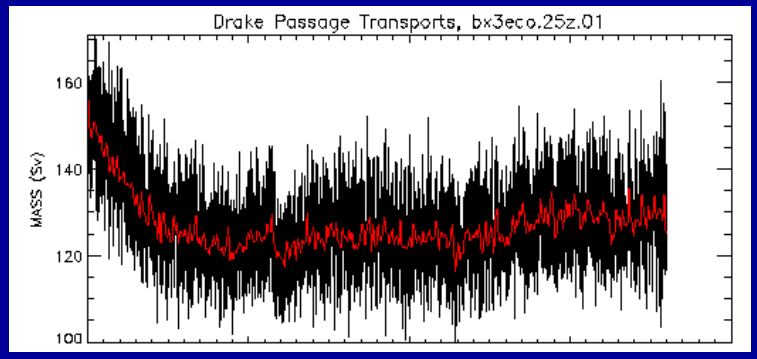
Net SHF

CCSM3 T31x3

CCSM4 T31x3



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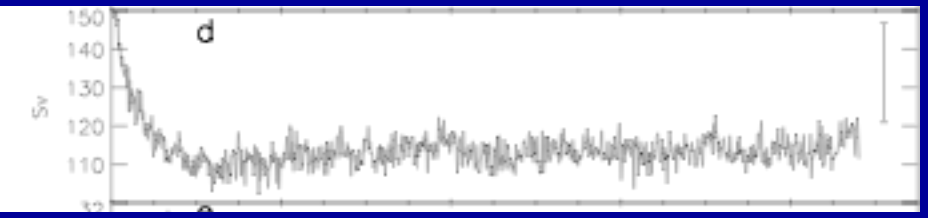

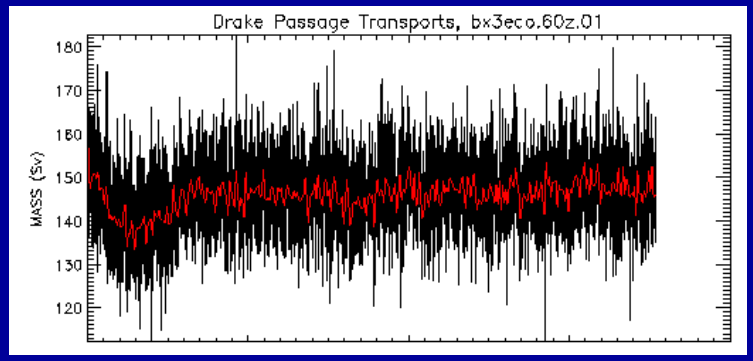

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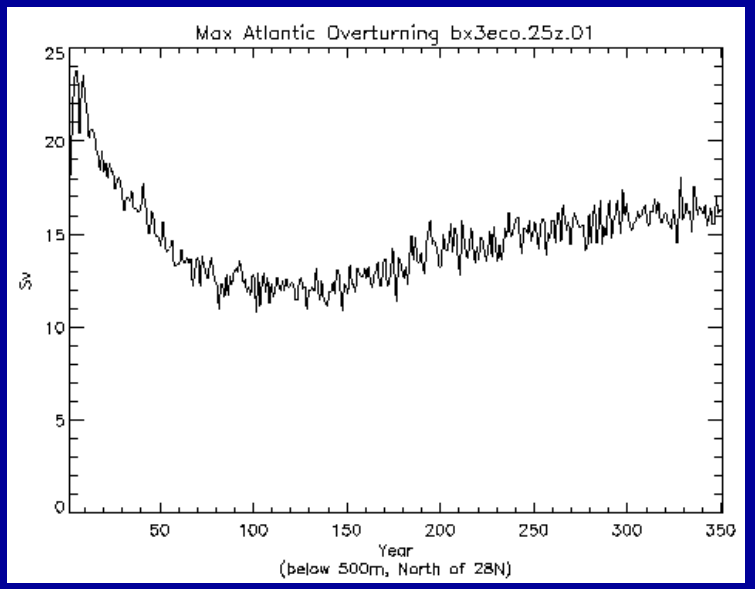
ACC

CCSM3 T31x3

CCSM4 T31x3



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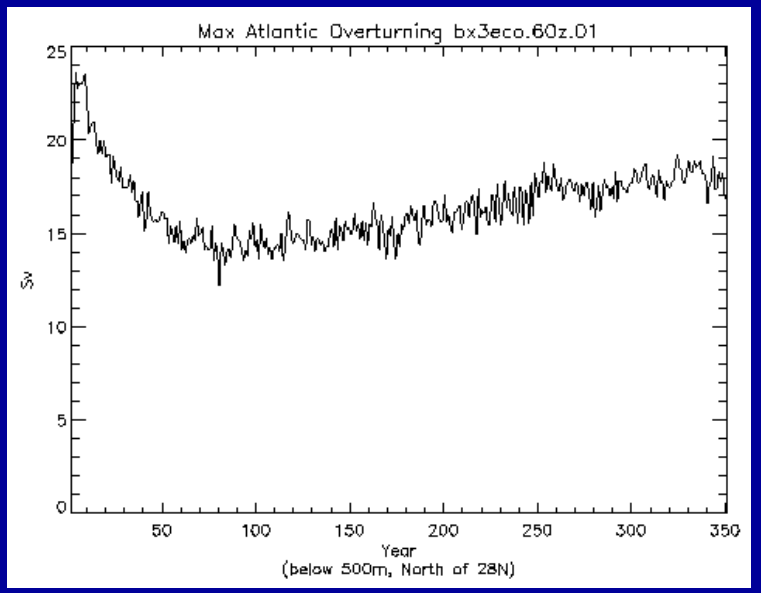

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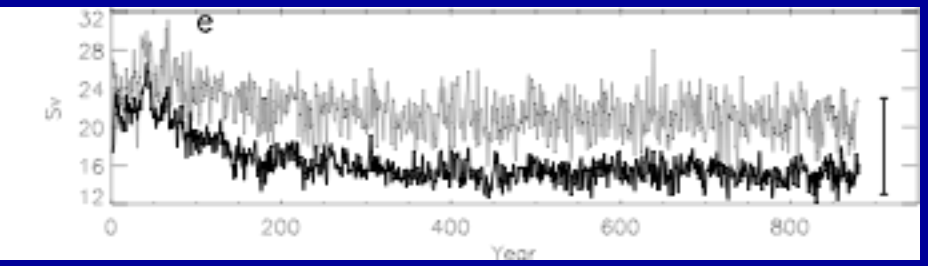
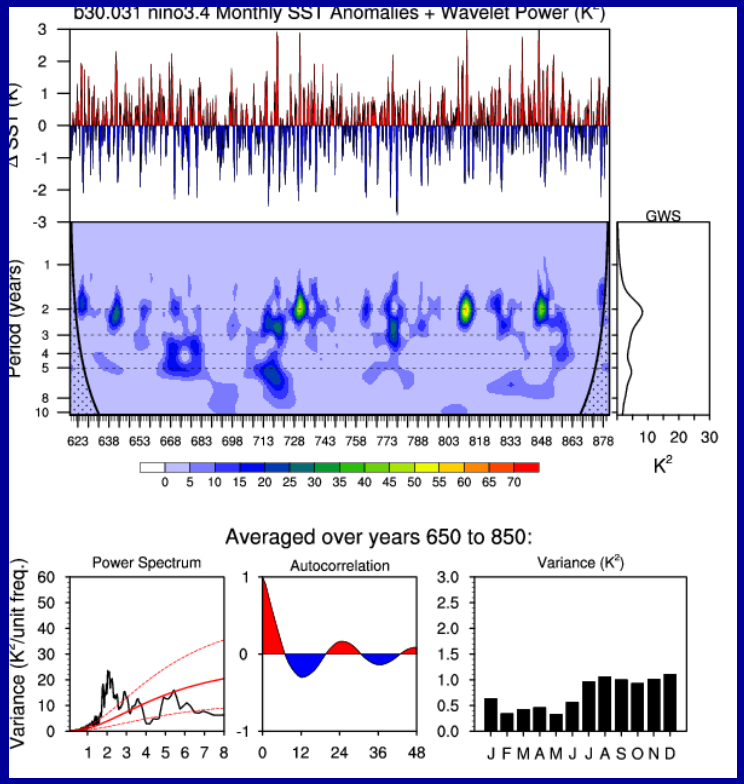
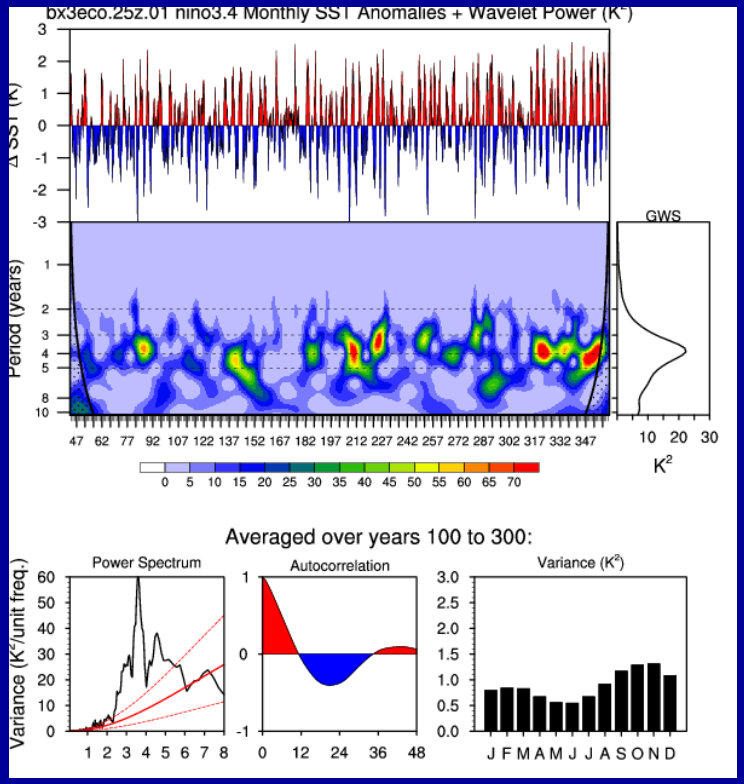


MOC

CCSM3 T31x3

CCSM4 T31x3





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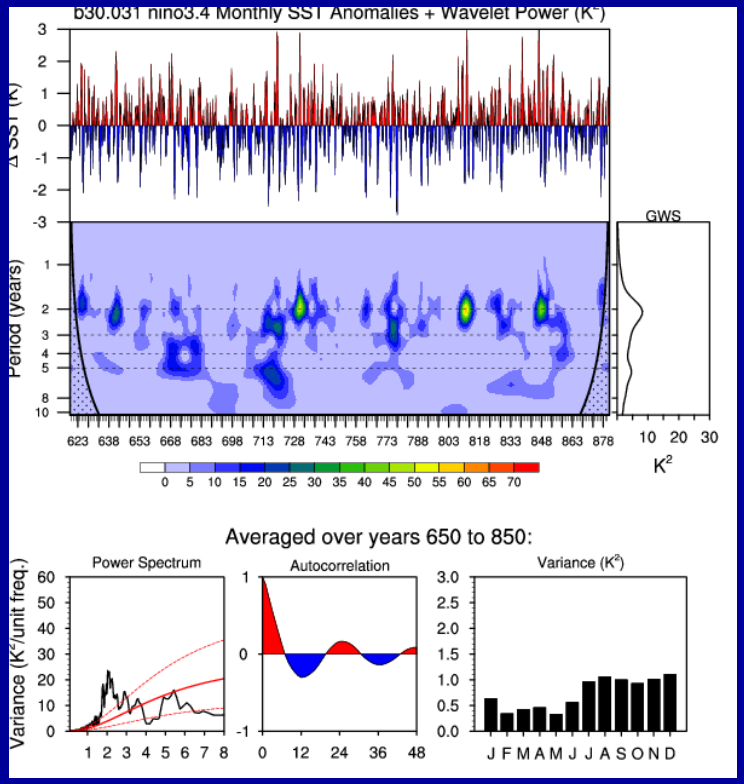
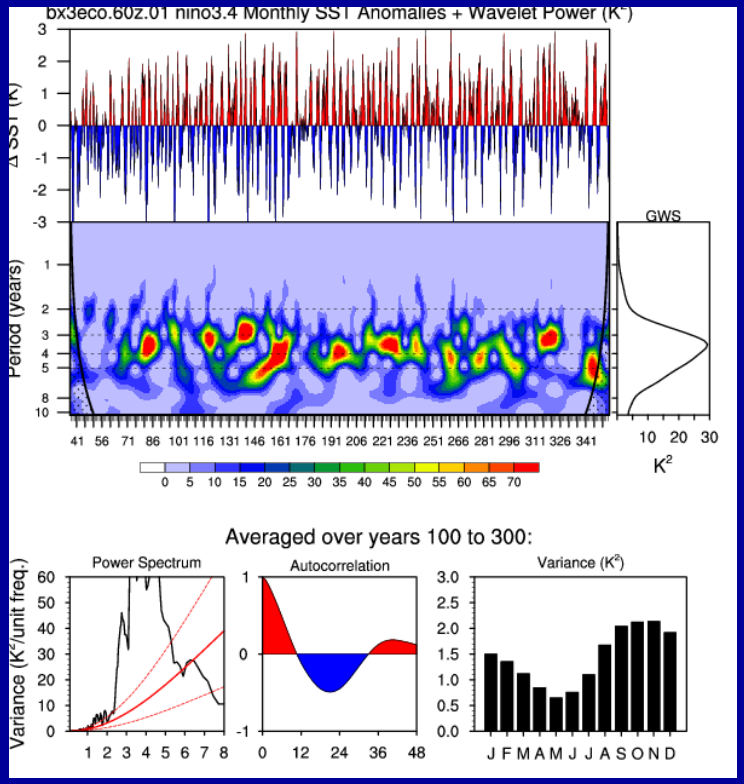
NINO3.4

CCSM3 T31x3

CCSM4 T31x3





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==> Similar to CCSM4 FV2^{o}x1

NINO3.4

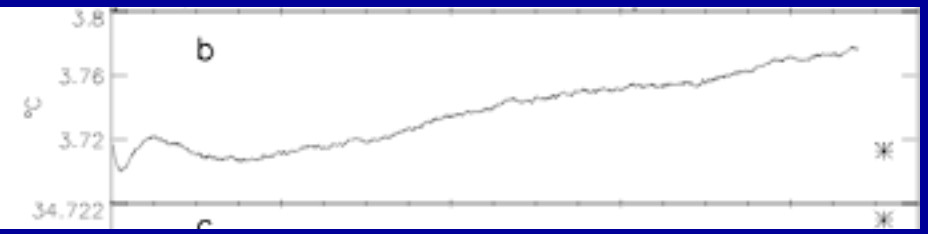
Needed for Low Resolution CCSM4:

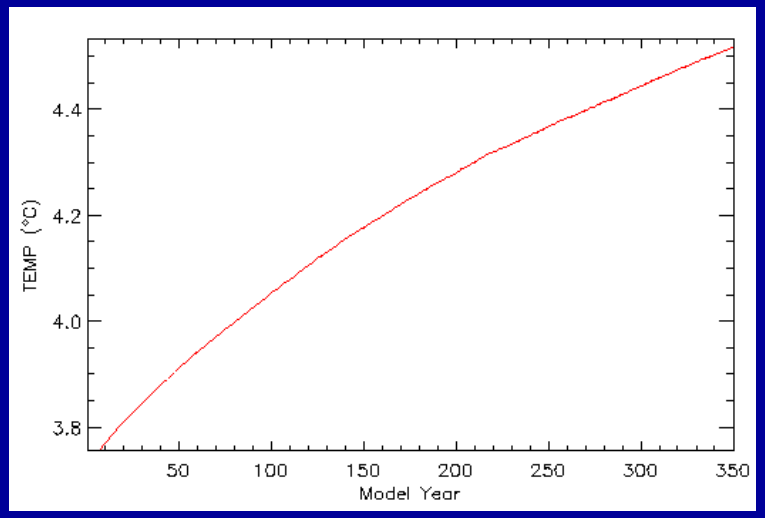
- Supported, tuned low-res CAM
- BGC data and new ocean topography for 60-level x3
- Tune recent ocean parameterizations for x3 (overflows, submesoscale, other?)

✓ Given the wide usage of T31x3 CCSM3 (BGC, paleo, climate sensitivity, low frequency ENSO & MOC variability), it is worth providing an improved low-res version of CCSM4

CCSM3 T31x3

CCSM4 T31x3





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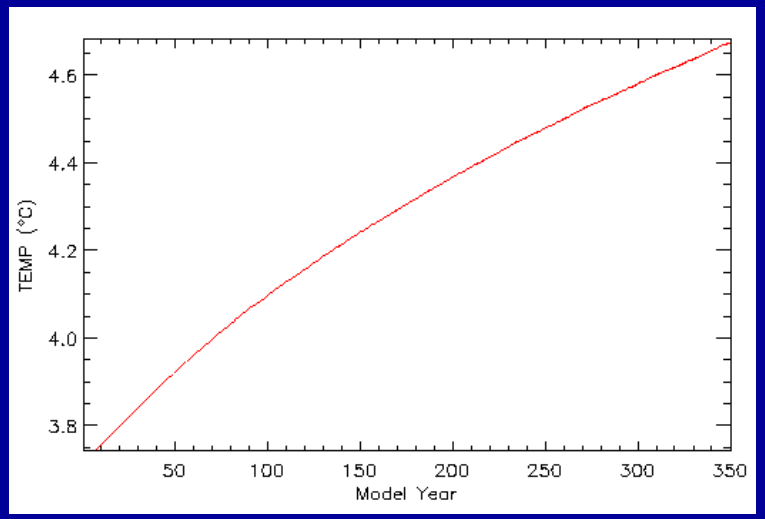

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Ocean TEMP