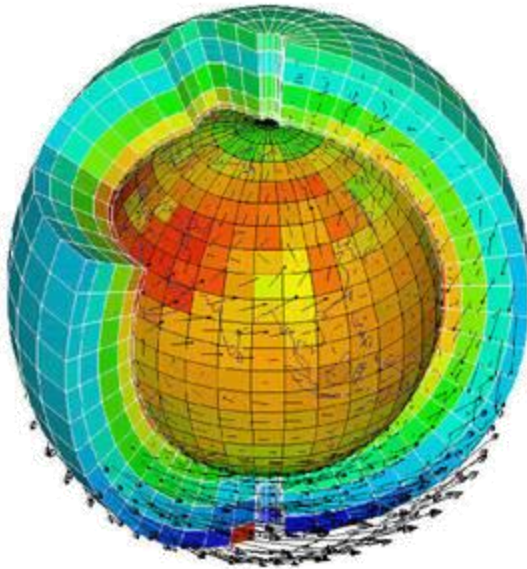


Model-Data comparison of heat and momentum fluxes over tropical oceans



VS.



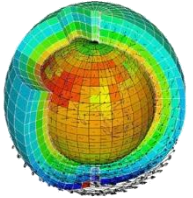
Alina Găinușă-Bogdan, Pascale Braconnot

Laboratoire des Sciences du Climat et de l'Environnement, Saclay, France



Data...

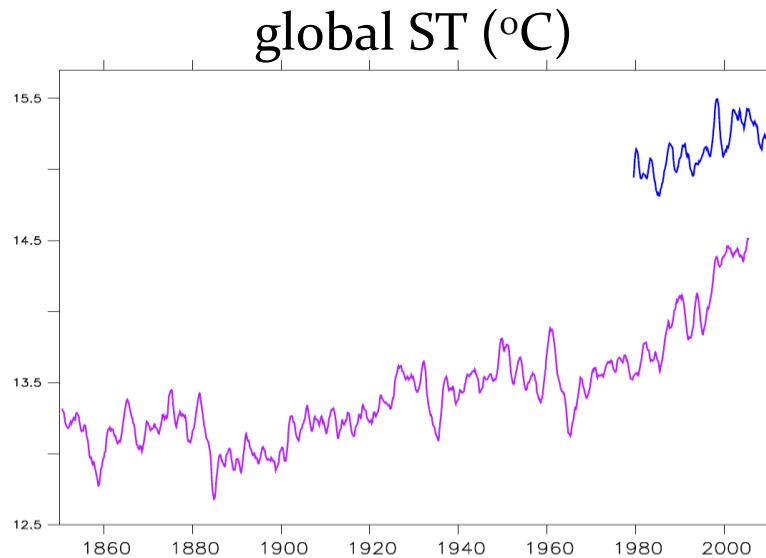
Data...



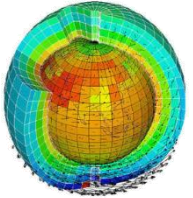
IPSL historical simulations:

Coupled – “IPSL-CM5A” (3 exp.)

Atmosphere stand-alone – “AMIP” (5 exp.)



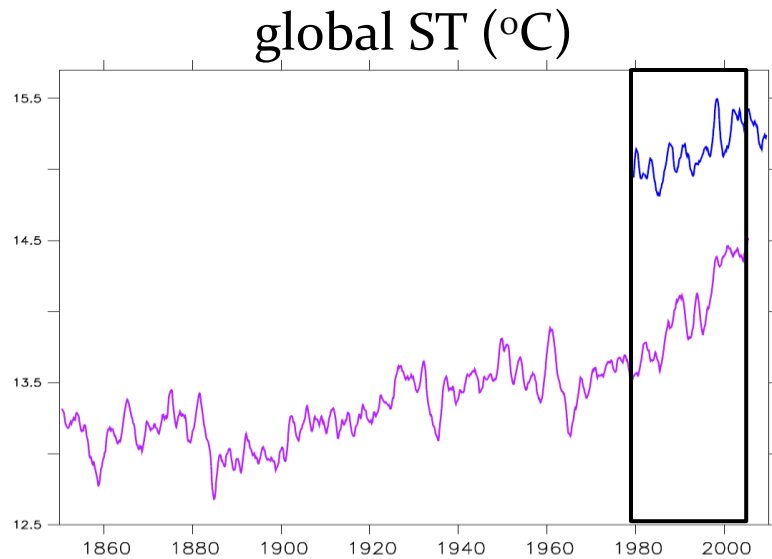
Data...



IPSL historical simulations:

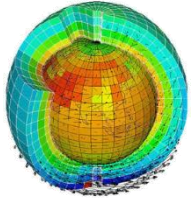
Coupled – “IPSL-CM5A” (3 exp.)

Atmosphere stand-alone – “AMIP” (5 exp.)



1979 - 2005

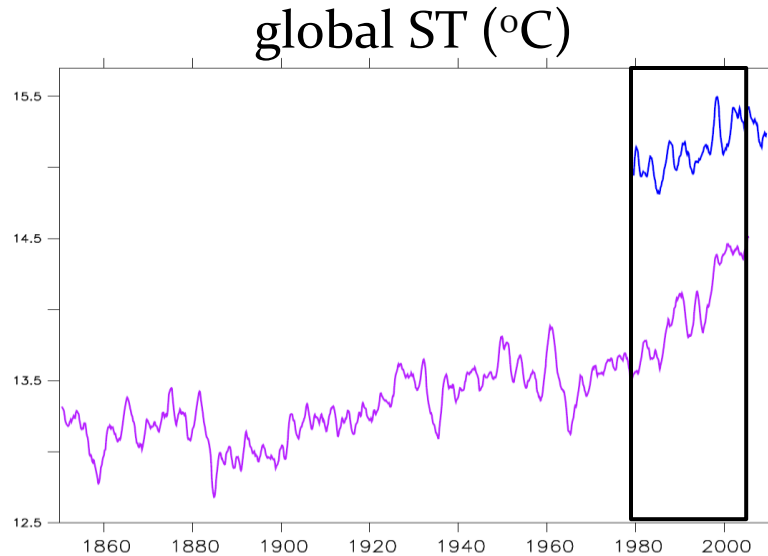
Data...



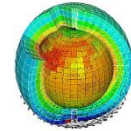
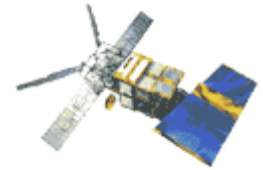
IPSL historical simulations:

Coupled – “IPSL-CM5A” (3 exp.)

Atmosphere stand-alone – “AMIP” (5 exp.)



1979 - 2005



HOAPS₃ (1988-2005)

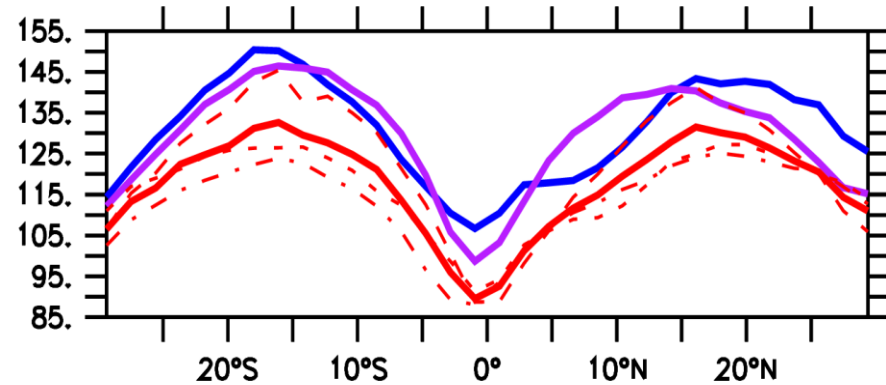
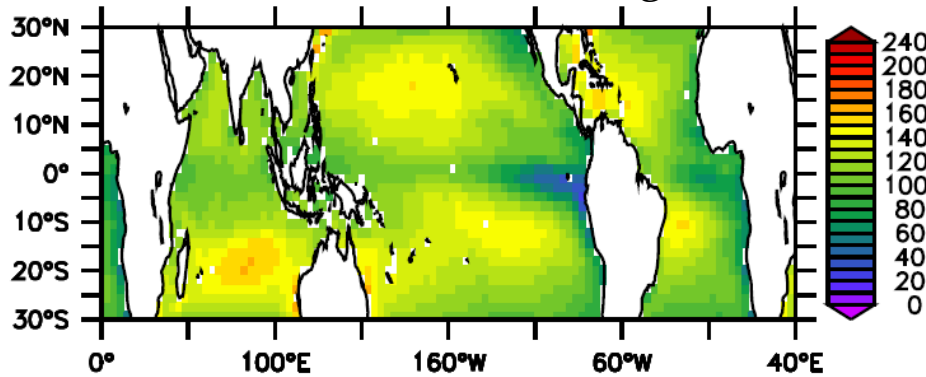
Da Silva (1945-1989)

OAF_{lux} (1958-2009)

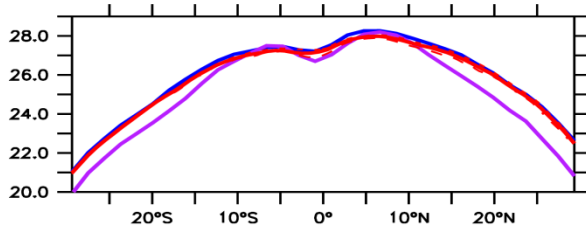
ERS (1993-1998)

Latent heat flux – climatological annual mean [W/m^2]

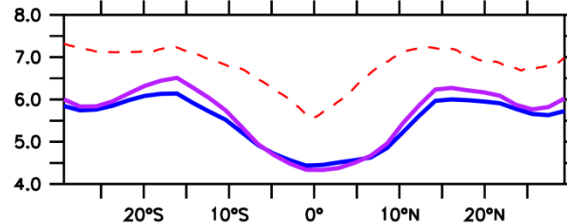
Observational average



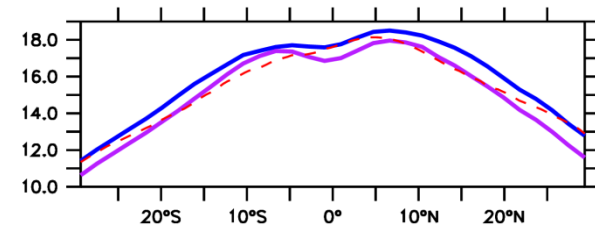
Sea surface temperature [$^{\circ}\text{C}$]



Surface wind [m/s]



Specific humidity [g/kg]

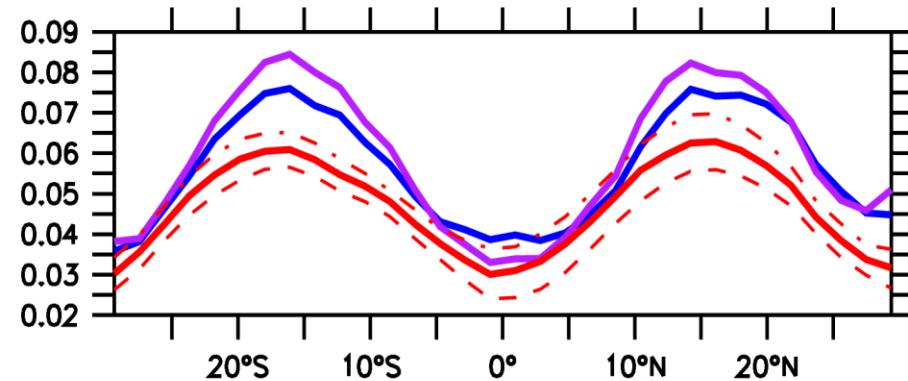
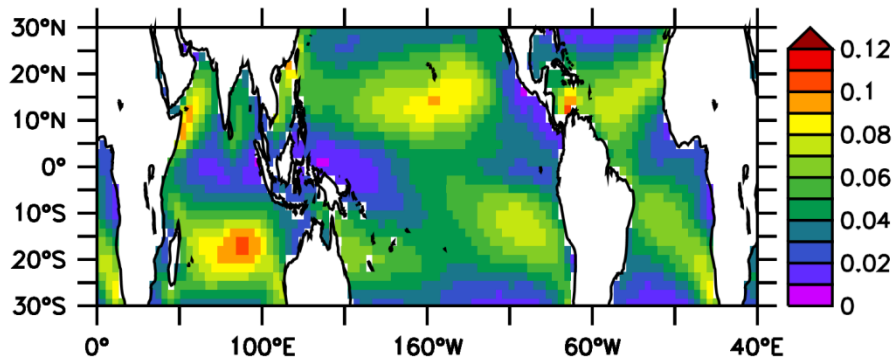


— Atmospheric model (1979-2005)
— Coupled model (1979-2005)
— Observational average

- - - HOAPS (1988-2005)
- . - Da Silva (1945-1989)
- - - OAFux (1958-2009)

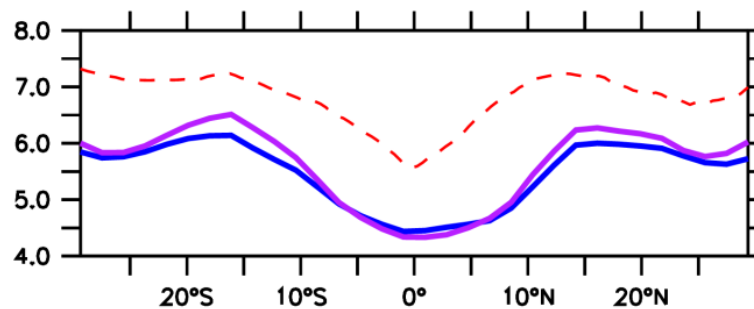
Surface wind stress – climatological annual mean [Pa]

Observational average



--- ERS (1993-1998)
--- Da Silva (1945-1989)

Surface wind [m/s]

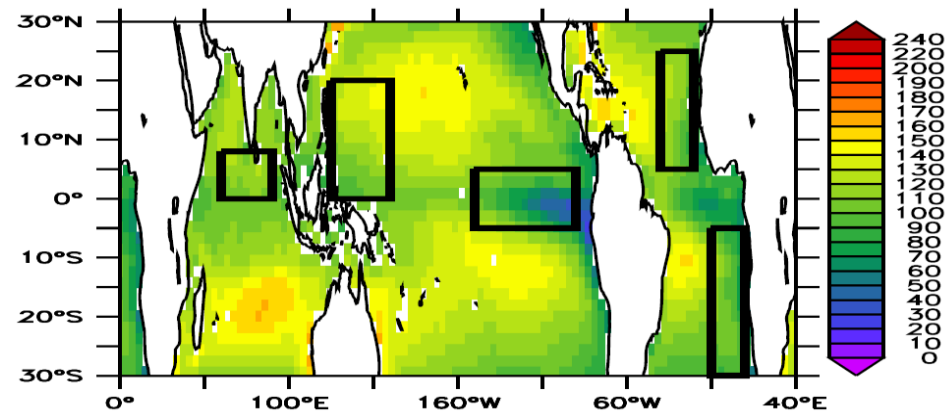


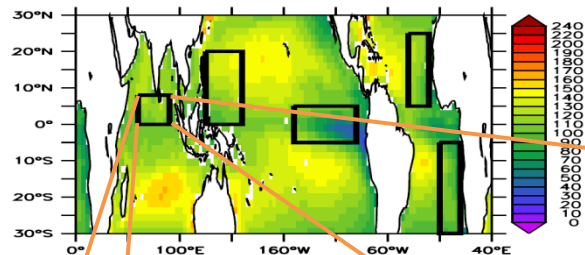
— Atmospheric model (1979-2005) --- HOAPS (1988-2005)
— Coupled model (1979-2005)
— Observational average

Latent heat flux

Seasonal variations

Latent heat flux – climatological annual mean [W/m^2]

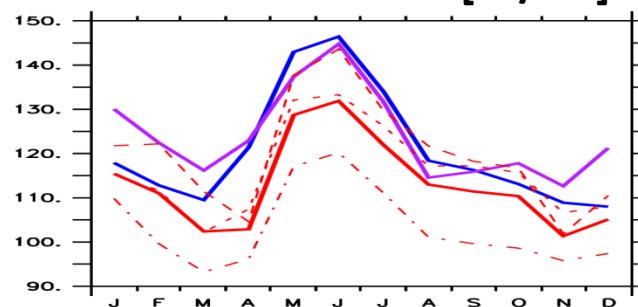




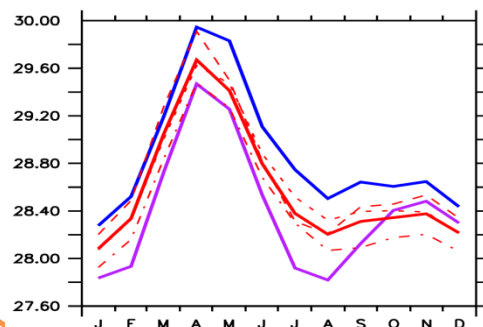
Latent heat flux Seasonal variations

Indian Ocean (60°E - 90°E ; 0°N - 8°N)

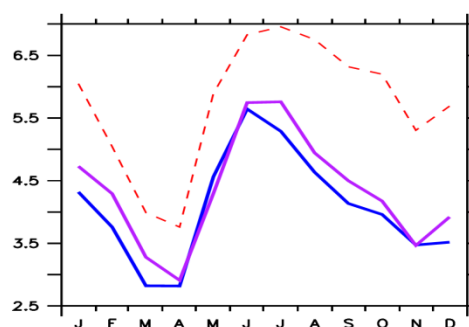
Latent heat flux [W/m^2]



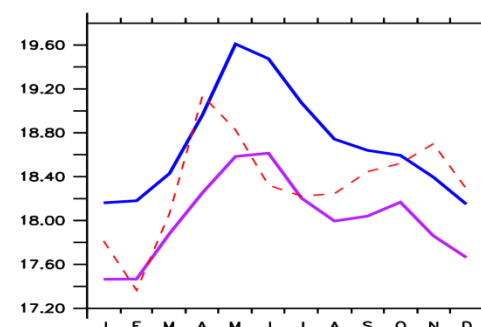
Sea surface temperature [$^\circ\text{C}$]



Surface wind speed [m/s]



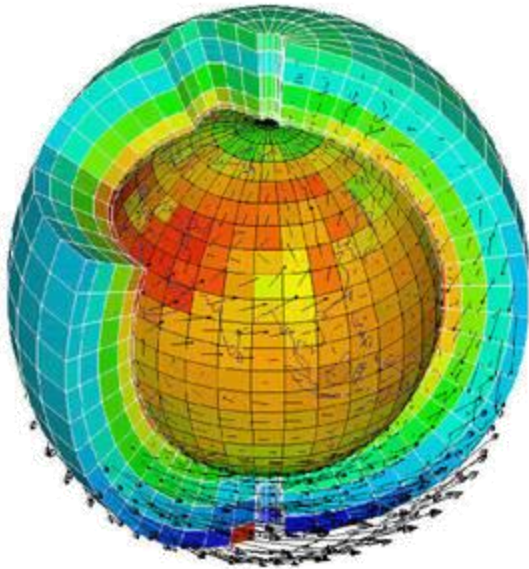
Specific humidity [g/kg]



— Atmospheric model (1979-2005)
— Coupled model (1979-2005)
— Observational average

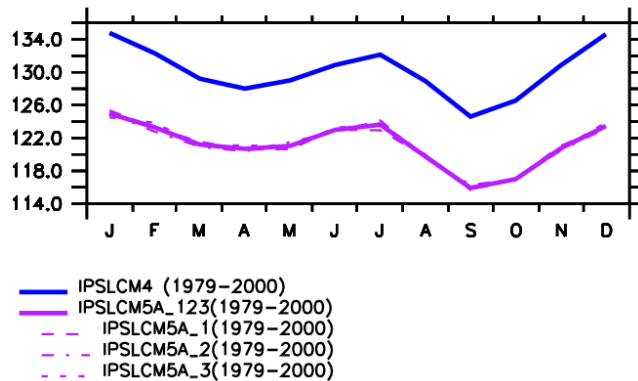
- - - HOAPS (1988-2005)
- - - Da Silva (1945-1989)
- - - OAF flux (1958-2009)

Thank You!

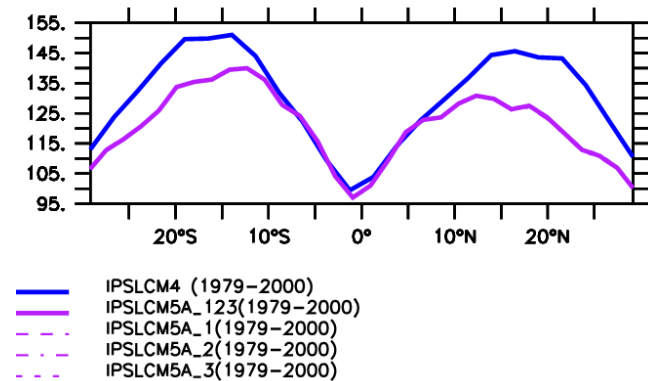


CM5A vs CM4 latent heat flux comparison

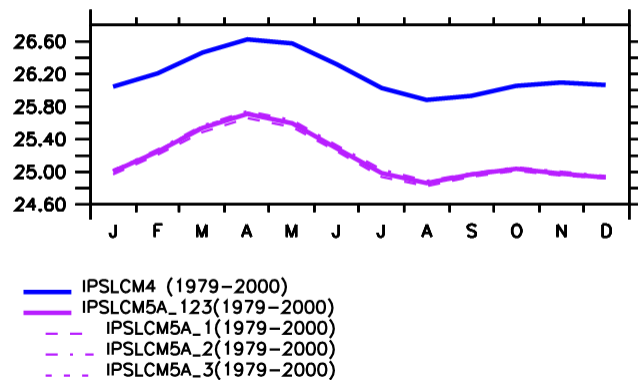
FLAT seasonal cycle over ocean (spatial average) (W/m^2)



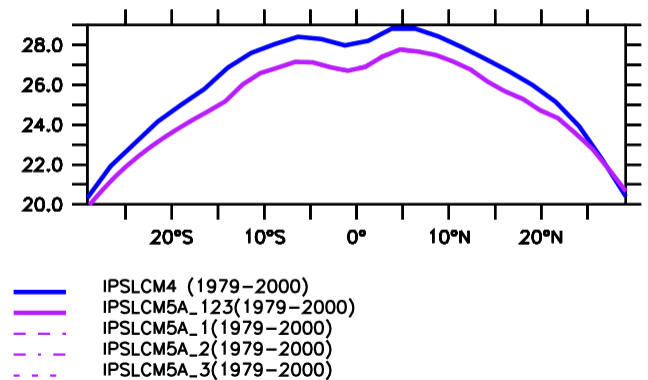
FLAT ANM ocean zonal means (W/m^2)



TSOL seasonal cycle over ocean (spatial average) ($^{\circ}\text{C}$)

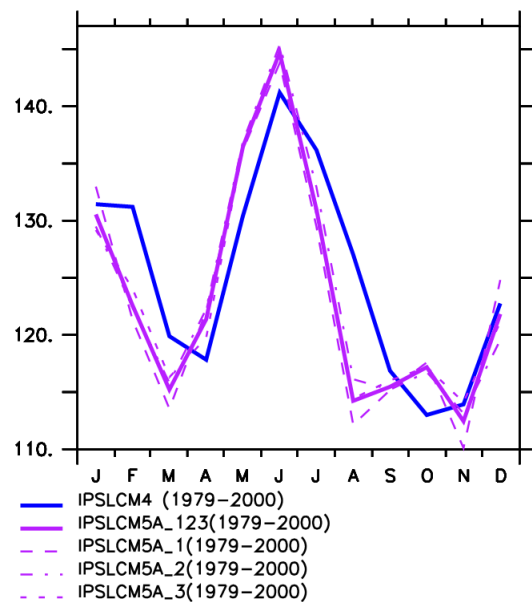


TSOL ANM ocean zonal means ($^{\circ}\text{C}$)



CM5A vs CM4 latent heat flux seasonality over the Indian Ocean

FLAT seasonal cycle Indian Ocean box (spatial average) (W/m^2)



TSOL seasonal cycle Indian Ocean box (spatial average) ($^{\circ}\text{C}$)

