Update on CMIP6 Experiments
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IITM-ESM : Model Configuration

Atmosphere : GFS (Global Forecast System)

T62 ; vertical: 64 sigma – pressure hybrid levels

Resolution ~200 km

Model top 0.2 mb

Prescribed MAC-v2 aerosols

–Revised Simplified Arakawa-Schubert convection (Han & Pan)

–Non-local PBL (Pan & Hong)

–SW radiation (Chou, modifications by Y. Hou)

–Prognostic cloud water (Moorthi, Hou & Zhao)

–LW radiation (GFDL, AER)

IITM-ESM : Model Configuration

Land surface : Noah LSM

Ocean: Modular Ocean Model v4p1 (MOM4p1)

Tripolar; 360x200 ; 1 deg poleward ; 0.33 deg near equator

50 levels ; Top grid cell 5m

Ocean Biogeochemistry : TOPAZ

Ice Model : Sea Ice Simulator

Timeline for CMIP6 Experiments

Experiment	Time Line
Pre-Industrial	Ongoing : To be completed by December 2017
1 %/yr CO_2	January -March 2018
Quadruple CO_2 abruptly, hold fixed	January -March 2018
Historical	April-June 2018
Historical AMIP	April-June 2018
Global Monsoon MIP (GMMIP)	April-June 2018
Scenario MIP	July-December 2018
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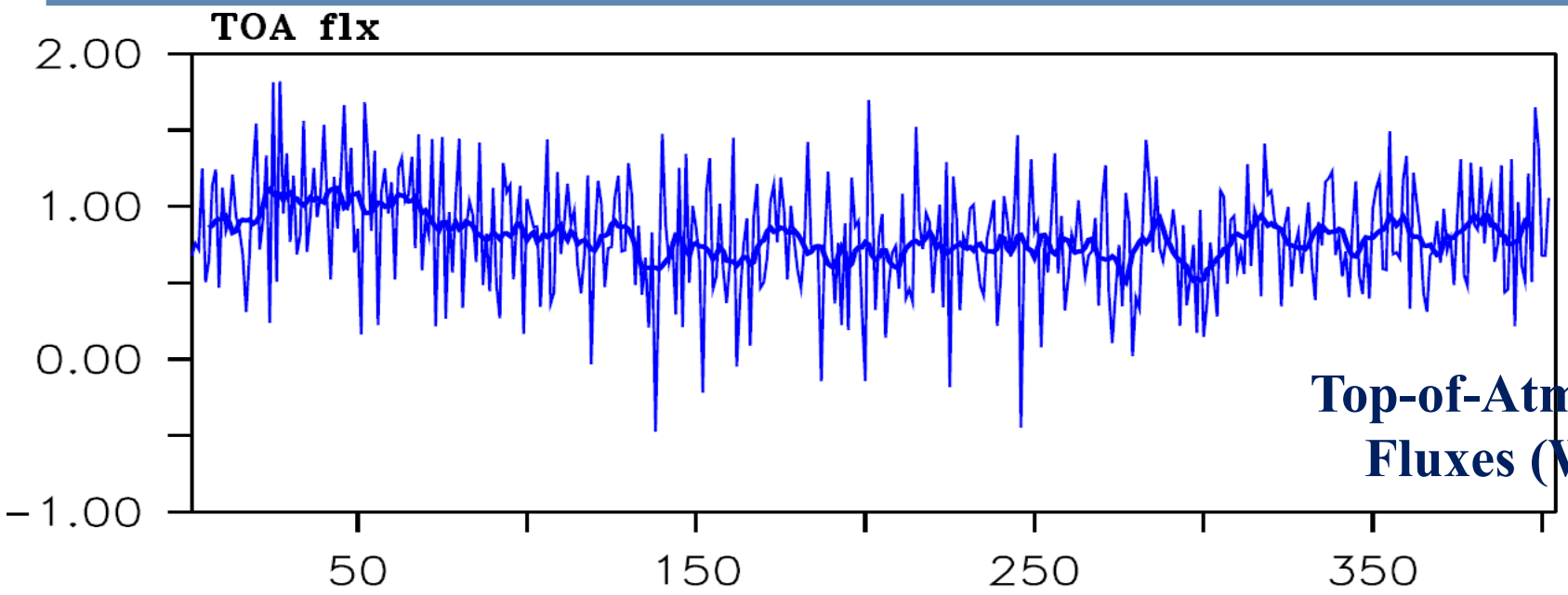
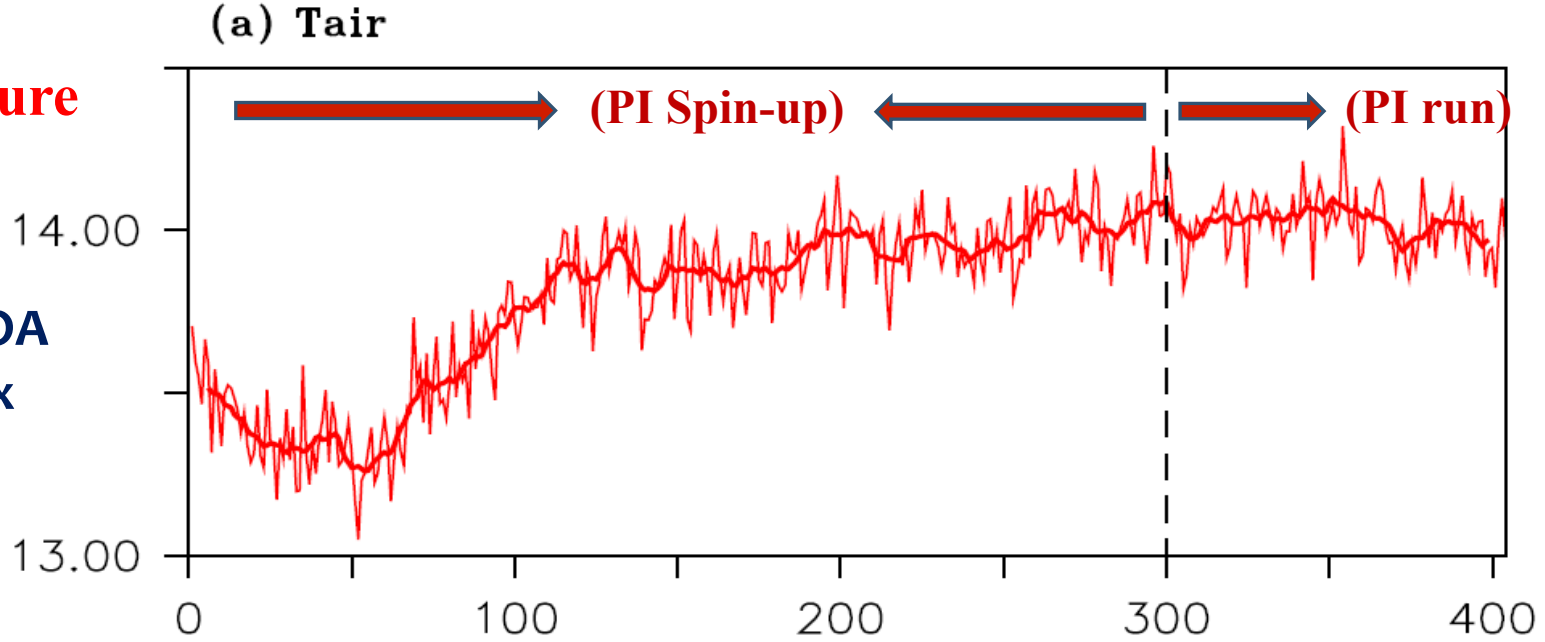
Feedbacks to WGCM

- **Brief overview of the CMIP6 model : Swapna et al (2017, to be communicated to JAMES)**
- **Experience with CMIP6 forcings : No**
- **Have you yet started any simulations, and if so which ones? Yes , PI simulation**
- **First results from CMIP6 simulations : Yes**
- **When are you planning to submit model output from the DECK to the ESFG : May 2018**
- **When are you planning to submit model output from the CMIP6 historical simulations to the ESGF : August 2018**
- **When are you planning to submit CMIP6-Endorsed MIPs experiments to the ESGF : December 2018**
- **Have you yet started filling the ES-DOC questionnaire : Yes**
- **Any additional feedback to the WGCM and CMIP Panel : Finalization of data request**

Pre-industrial Control Simulation



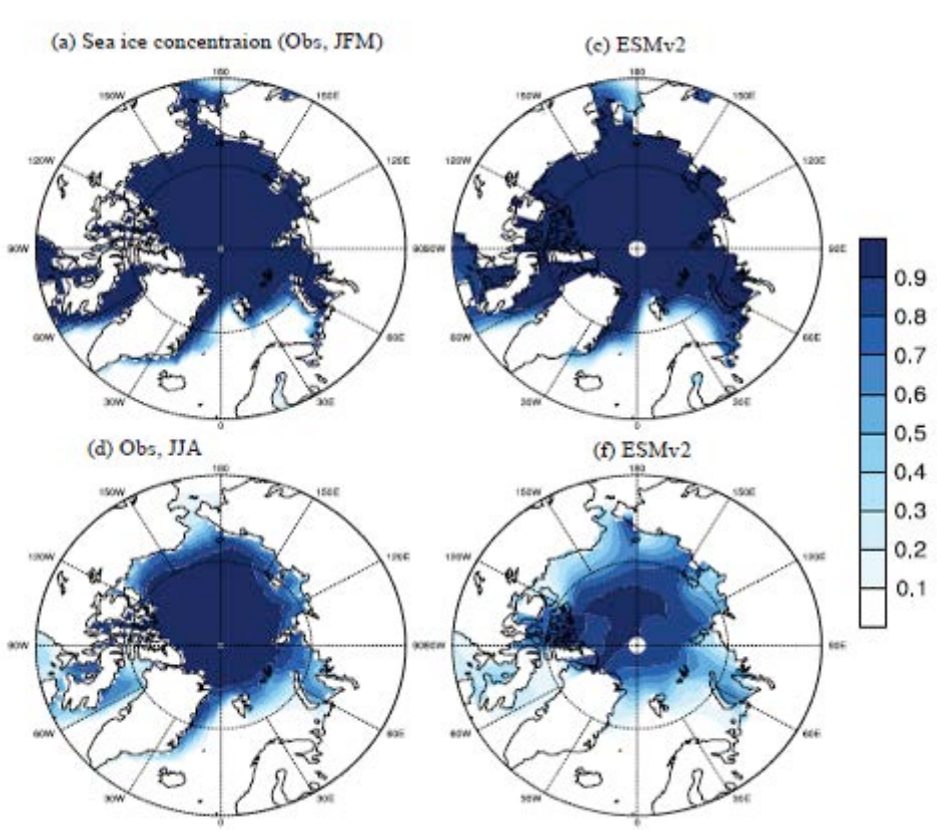
Top-of-Atmosphere Fluxes (W/m2)

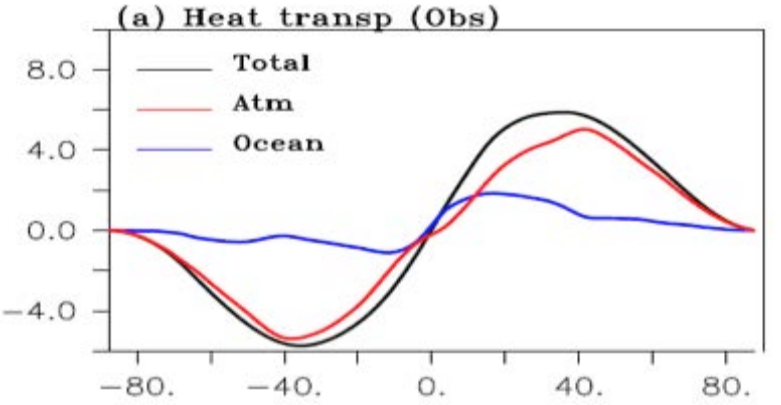


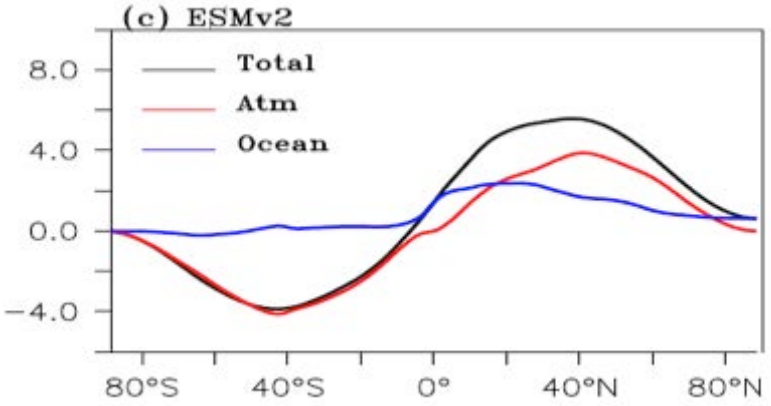
Air temperature (deg C)

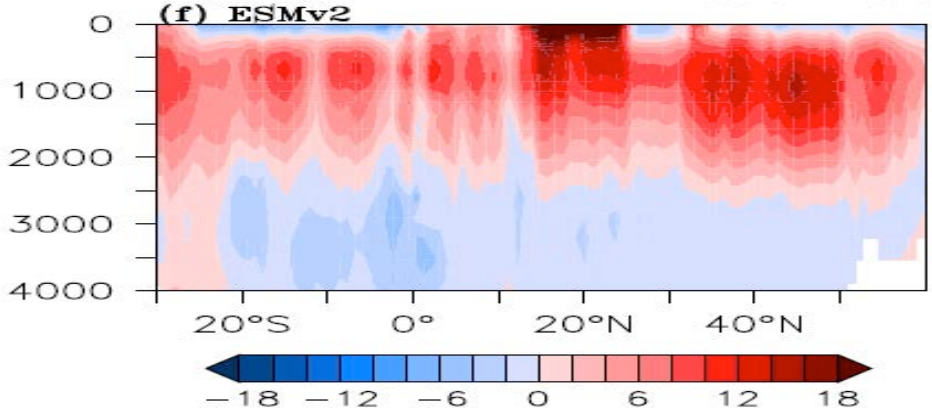
Difference in TOA and Surface flux is 0.01 Wm-2

Large Scale Features

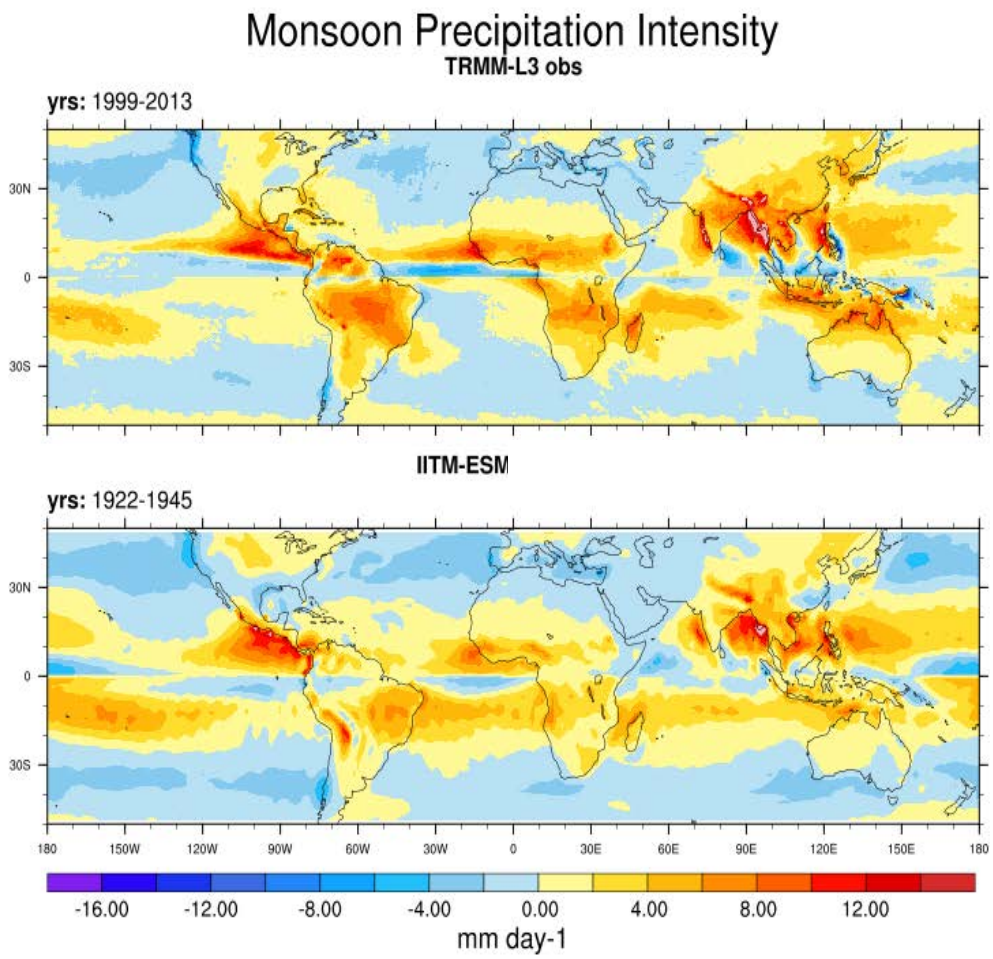


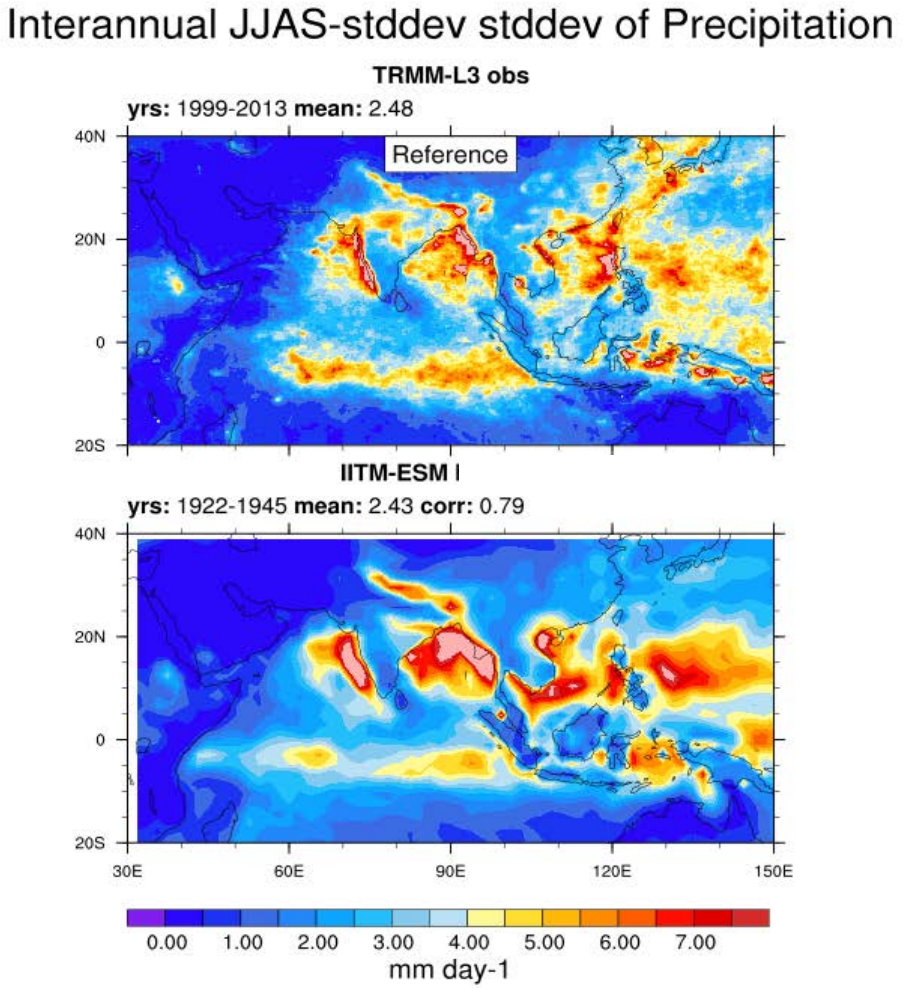






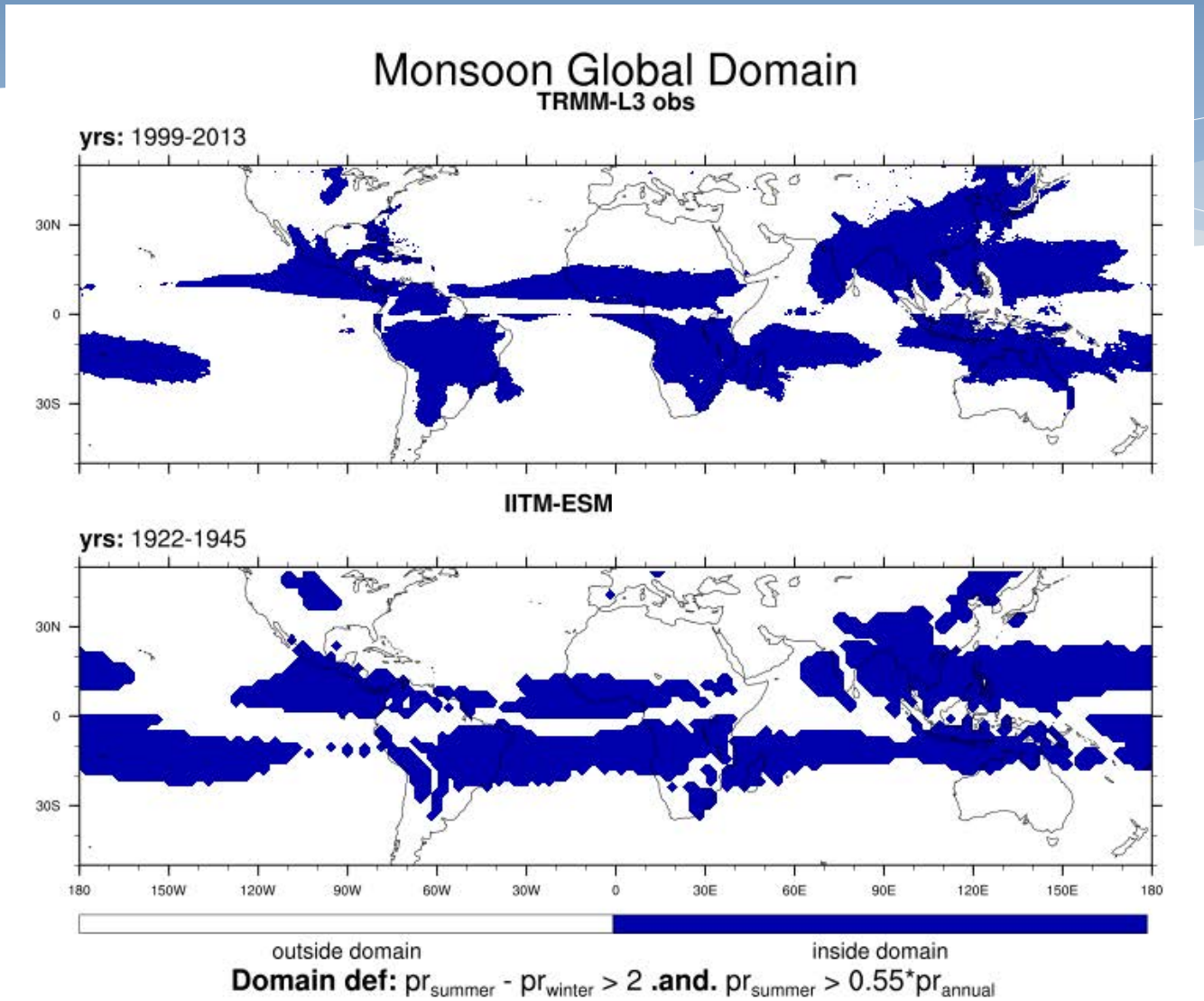
South Asian Monsoon Diagnostics ESM ValTool



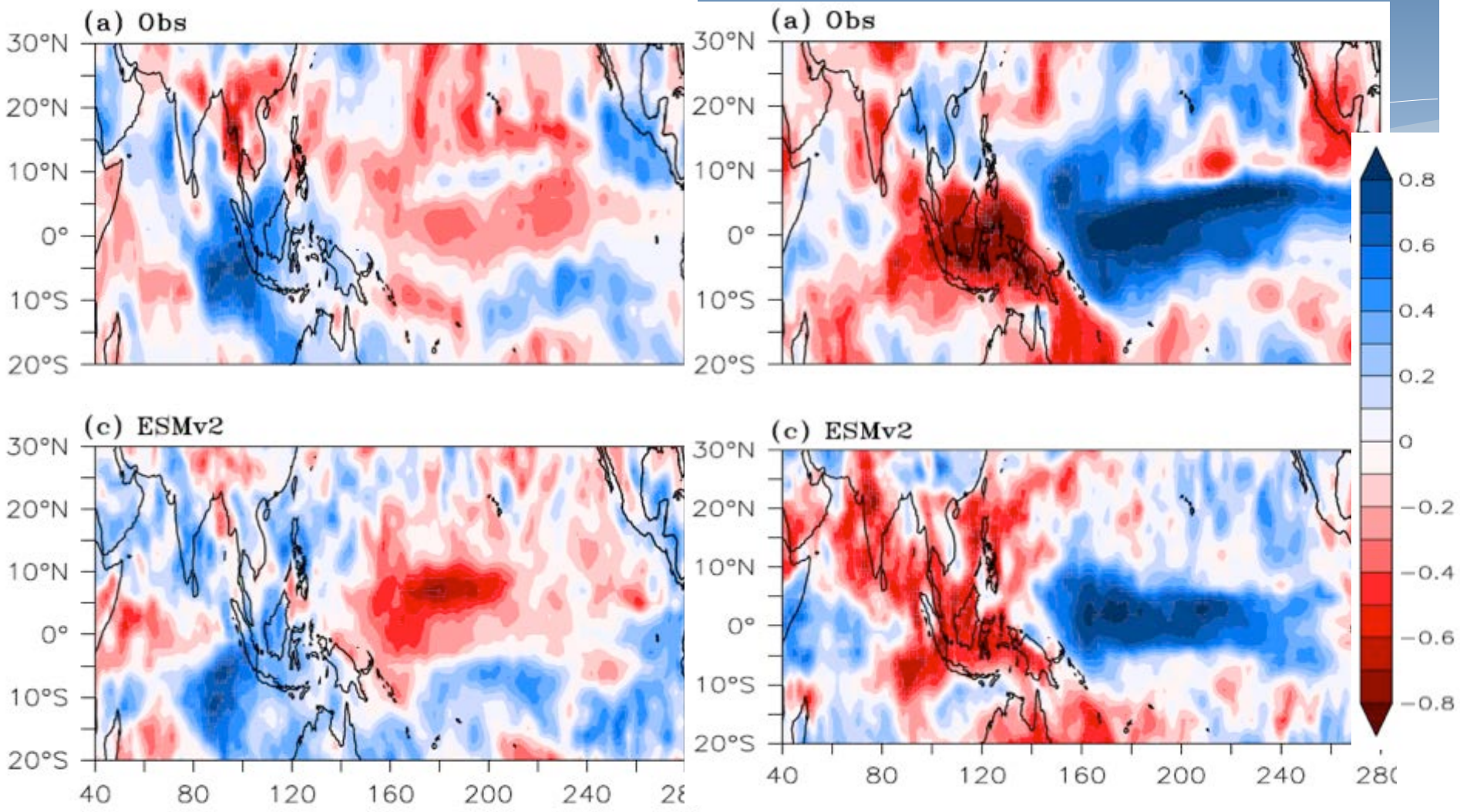


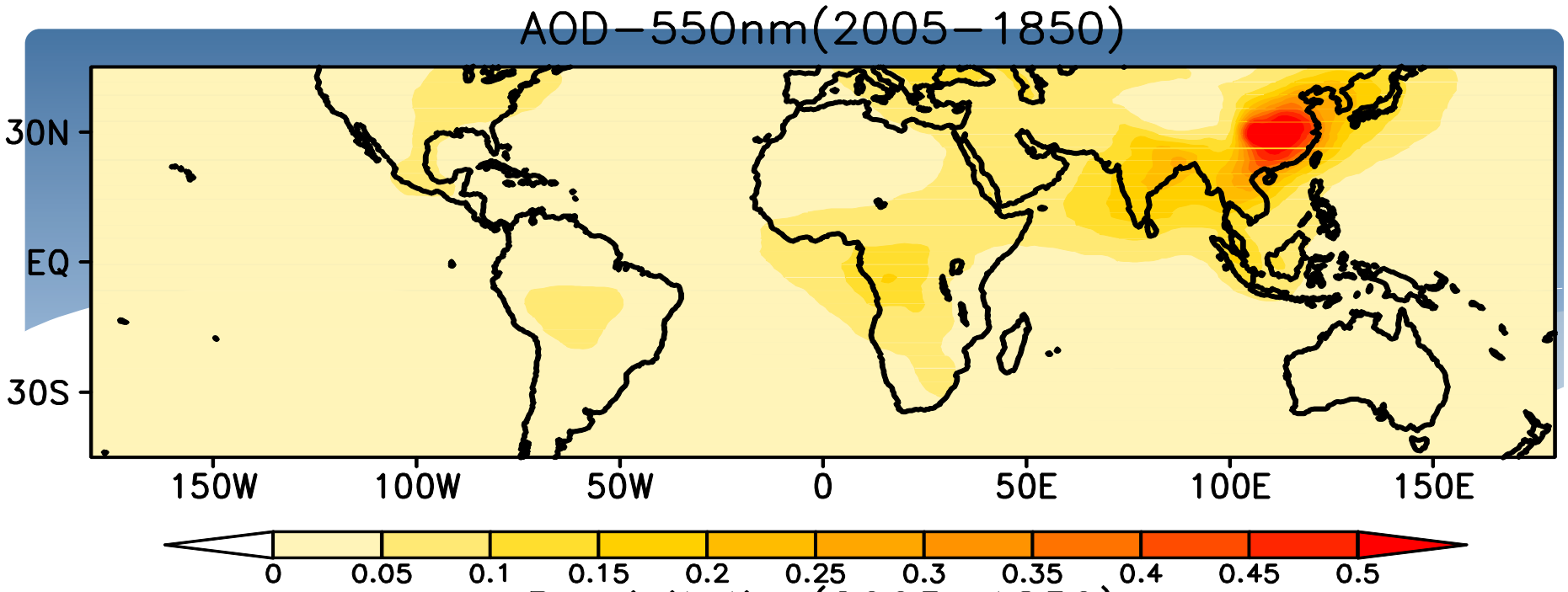
Courtesy : Sanjay & Mahesh, CCCR

Global Monsoon : ESM ValTool

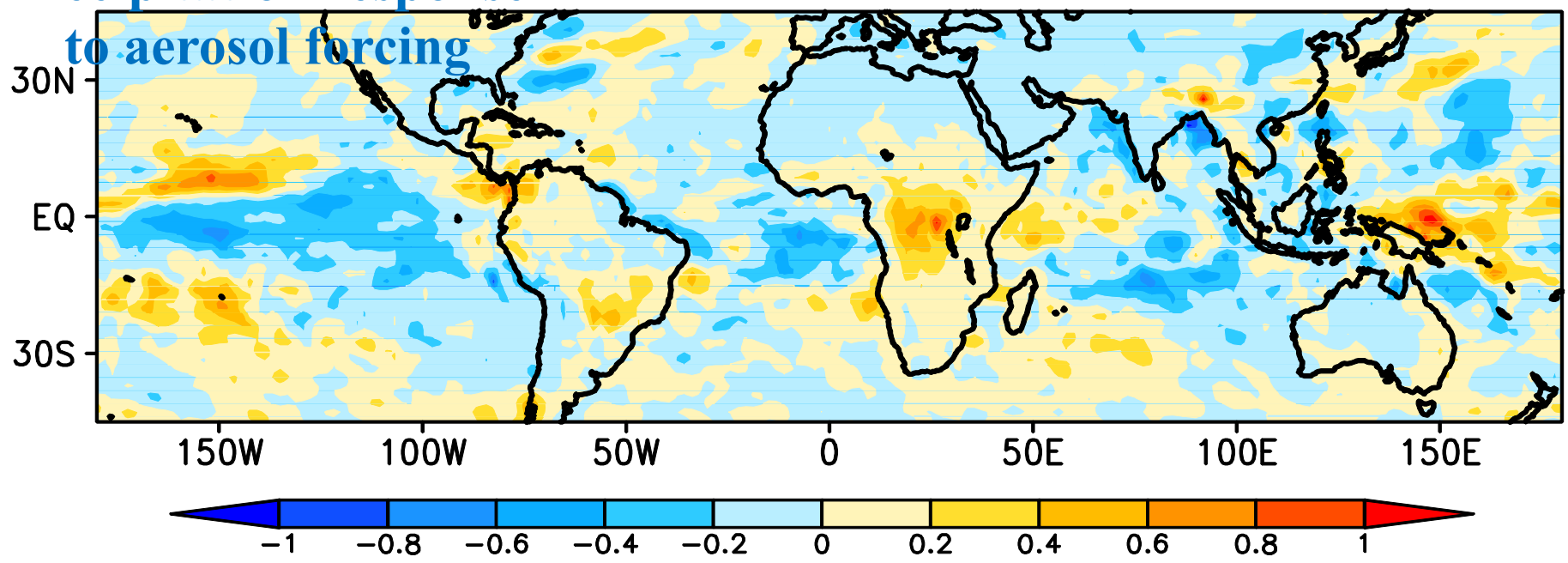


IOD-Monsoon and ENSO-Monsoon Teleconnection



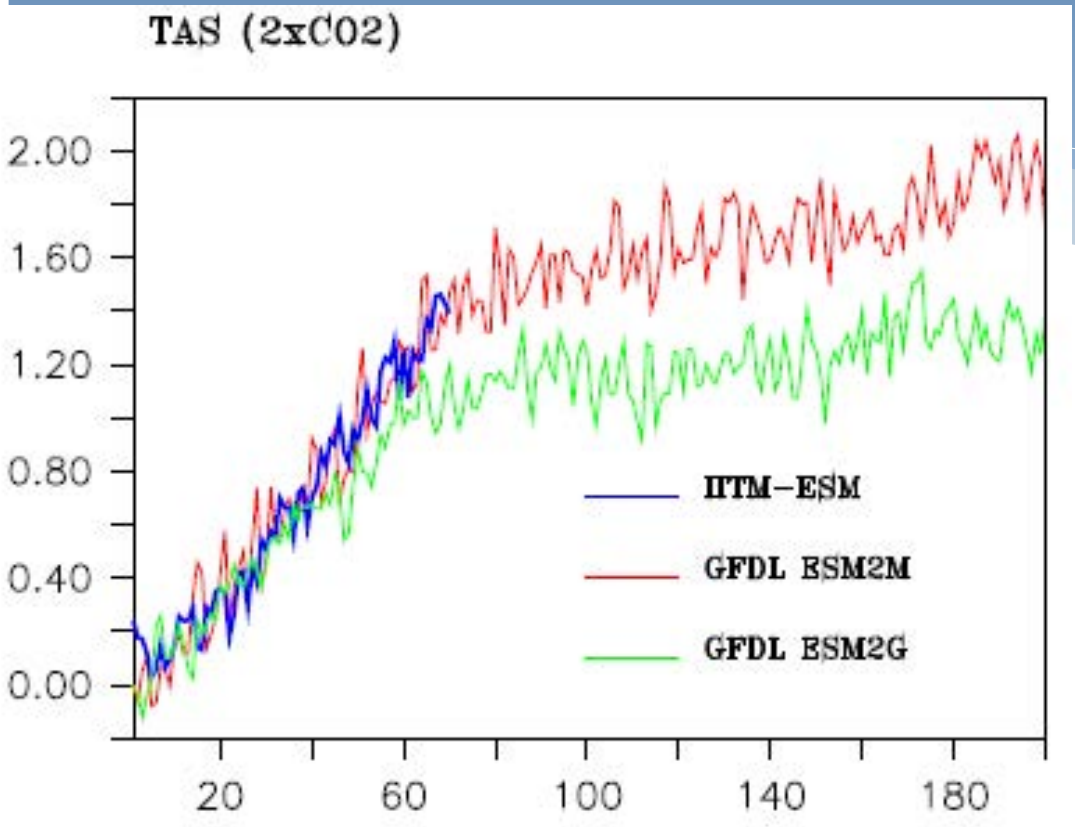


Precipitation response to aerosol forcing




Thank You

$2xCO_2$ response of IITM-ESM



SST / SAT Anomaly: 2 x C02 experiment - PI Control