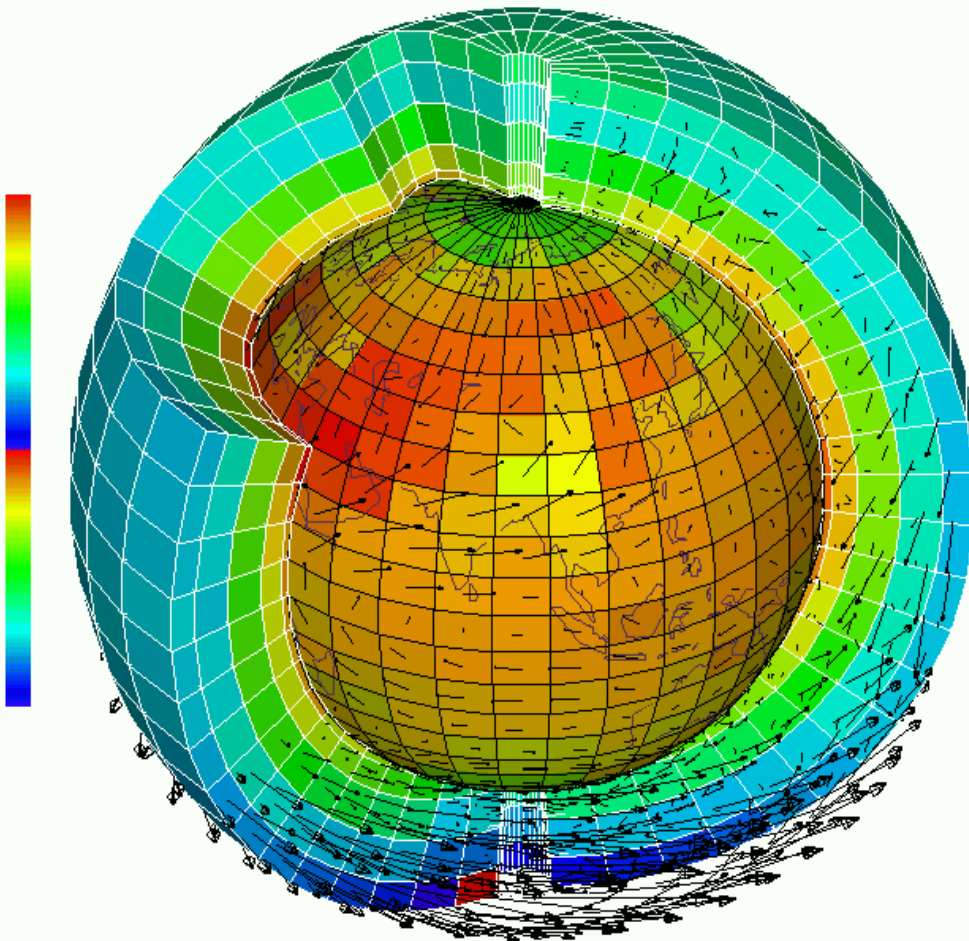


The JSC/CLIVAR Working Group on Coupled Models (WGCM)

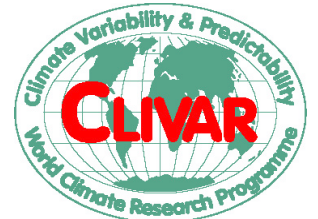
Brief overview & Opportunities for WGCM/WGNE collaborations



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WGCM/WGNE
Joint Session
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WCRP
World Climate Research Programme



WGCM Missions

- Review and foster the development of coupled climate models.. and now ESMs
- Coordinate model experiments and inter-comparisons to:
 - better understand natural climate variability
 - predict the climate response to natural & anthropogenic perturbations
 - assess the climate predictability at the decadal timescale
- Promote and facilitate model validation and diagnosis of shortcomings

Balance between :
Simulation - Evaluation - Understanding

WGCM Missions

- Review and foster the development of coupled climate models.. and now ESMs
 - collaboration with IGBP/AIMES, SPARC, CLIC
 - joint WCRP-WWRP-THORPEX “survey on model evaluation and improvement”
- Coordinate model experiments and inter-comparisons to:
 - better understand natural climate variability
 - predict the climate response to natural & anthropogenic perturbations
 - assess the climate predictability at the decadal timescale
 - CMIP (with many MIPs/partners), PMIP (with IGBP/PAGES), CFMIP
 - Decadal climate prediction panel (WGSIP/WGCM)
 - Transpose-AMIP (WGNE/WGCM), CORDEX (JSC/WGCM)
- Promote and facilitate model validation and diagnosis of shortcomings
 - Metrics panel (WGNE/WGCM)
 - facilitating connections between global modelling / observations / processes (CFMIP observations simulator, Obs for MIPs, CFMIP/GCSS station outputs ..)

Opportunities for further WGCM/WGNE interactions

1. Participation of NWP groups in CMIP5 welcome !

e.g. in atmosphere-only AMIP and idealized experiments

→ opportunity for NWP centers and the whole modelling community :

- NWP centers would benefit from the work of CMIP5 analysts
(many eyes looking at each model)
 - share observational tests & diagnostics
(e.g. observations for CMIP5 evaluation, satellite simulators, process diagnostics, etc)
 - highlight deficiencies present in both NWP & climate models
 - better understand the role of model resolution and process representation
- target & emphasize specific model development activities

Opportunities for further WGCM/WGNE interactions (cont'd)

2. Analysis of CMIP5 simulations :

how to facilitate feedbacks between analysts & model developers ?

→ what do CMIP5 analysts have to say about model deficiencies and their interpretation?

→ CMIP5 Terms of Use :

“To aid participating groups in understanding and improving upon their models’ behaviors, I will respond to reasonable requests from the WGCM for feedback about my CMIP5 research results (e.g., reporting model deficiencies, recording CMIP5 publications, etc.).”

→ how to formulate / organize this feedback?

Could be a joint WGCM/WGNE action

→ should we encourage CMIP5 analysts to share their diagnostic code ?

(possible use in the future by the metrics panel and by model developers)

Opportunities for further WGCM/WGNE interactions (cont'd)

3. Future coordinated experiments specifically designed to better understand the link between model errors and model formulation ? (physical parameterizations, resolution, etc)

- difficulty raised many times in the survey on model development and improvement
- example: impact on different aspects of climate prediction of model resolution and of the representation of atmospheric processes (delayed triggering of convection, cloud-radiative effects, enhanced convection-humidity interactions, etc)
- in addition to promoting model development and evaluation....
one should also promote “model understanding”
- how particular model developments (e.g. radiation code, moist processes, resolution..) translate into predictive capabilities at different time scales (weather, seasonal to interannual, decadal)? and into climate projections ?
- *joint WGCM/WGNE/WGSIP projects focused on particular model problems might be the basis of future “international CPTs” (cf last CLIVAR SSG)*