

Rapporteur's report on GMPP

Anton Beljaars, Jan Polcher

GMPP

GMPP shows strong commitment to model improvement with a number of initiatives:

- Shift of emphasis from process studies to impact in earth system models
- Coordination with WGNE
- Survey among modelling groups
- Planned conference/workshop on parametrization
- White paper

• Questions:

- Does WGNE indeed provide the feedback to GMPP with respect to parametrization development? Link to WGCM?
- The first outcome of the survey (convection, cloud/radiation, carbon and high issues with 5 km models) is not very specific. What are the suggestions for progress and how to organize it? There is substantial funding for climate research, but not for model development. If this funding would be re-directed, would we have enough good ideas, or would it result in more diagnostics?

GCSS

- GCSS is very active and provides an attractive framework for cloud research as illustrated by the membership and funding agencies (e.g. EUCLIPS).
 - GCSS goes clearly in the direction of studying the effects of parametrized processes in the large scale modelling environment. The cloud feedback work is an example.
 - The flexible working group structure is beneficial, with sensible new working groups e.g. on microphysics, cloud feedbacks and metrics.
 - Perhaps more internal GCSS coordination is needed.
 - GCSS is becoming rather big and it has been suggested to move GABLS to GCSS. Alternatively, the boundary layer cloud working group could move to GABLS.
- Suggestion: discuss and develop strategy for pan-GEWEX meeting.

GCSS future

- Important areas:
 - Interaction of convection with the large scale dynamical environment (e.g. MJO)
 - Cloud radiation interaction
- How to address these:
 - CRM-simulations over large areas. Can one of the big computer centres create data sets for analysis by the community? Is it possible to tailor such data sets to the needs? We suggest GCSS to think about a WG?
 - To represent better the radiative effects of clouds, it will be necessary to have combined observations of cloud characteristics and their radiative effects. A combination of active and passive instruments is necessary (ground and/or space based). We suggest GCSS to think about a working group that focuses on the analysis of cloud profiling data and comparison with model profiles, including impact on radiation.

GLASS

- GLASS is very active and makes good use of the expertise to link processes and the large scale.
 - Data assimilation is an excellent way of confronting models with a wide range of observations. If possible, an inter comparison would be very good.
 - Benchmarking is a very good development. Models are only as good as can be demonstrated on the basis of objective verification.
 - Not much is said about model development. Is there a strategy?
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- Future: further integration with hydrology?
Anthropogenic change of land characteristics?

GABLS

- GABLS has made good progress, but might reach the limits of what can be done in single column mode
- The stable surface coupling is an important issue for climate change as it has strong influence on warming trends at high latitude.
- Meso-scale variability might be a key aspects and therefore high resolution 3D (perhaps even LES scale) simulations are needed. Such simulations need to be interactive with the surface.
- GMPP is increasingly moving in the direction of processes in the context of large scale interactions. GABLS should also make this step.
- Analyzing output from various models for various high latitude CEOP locations would be an ideal activity to make the connection with the 3D modelling world. The stable BL at high latitudes in winter is a coupled boundary layer/ land problem.

GMPP

•Plans:

- Workshop on strategies for model development is a good idea.
- Nice synergy between GMPP and CEOP on model evaluation for CEOP points.
- Single column test bed for ARM/CloudNet type locations is a very good idea (all weather simulations).

•Recommendations:

- Rapporteurs support the recommendation to congratulate the GMPP working groups.
- Rapporteurs support the proposal to provide high level support for re-analysis work.

But

- Does it lead to better models and/or a reduction of uncertainty in models ? Is the link with the large scale modellers working?