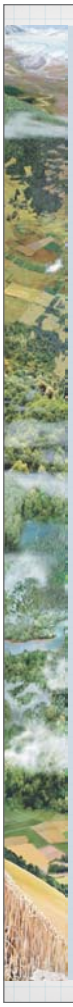


About The Joint Conference

The Sixth International Scientific Conference on the Global Energy and Water Cycle and **The Second Integrated Land Ecosystem-Atmosphere Study (iLEAPS) Science Conference** are being held in conjunction in Melbourne, Australia on 24-28 August 2009. The two conferences will hold joint sessions with keynote talks and three common sessions, including invited oral presentations and oral and poster presentations. The program will also include special events for early career scientists, as well as social gatherings and post-conference tours for participants.

Detailed information on the conferences and the joint sessions—including registration, program agendas, accommodations, and more—will become available at a later time. Please continue to check the iLEAPS (*www.ileaps.org*) and GEWEX (*www.gewex.org*) web sites for updates.

This conference will provide an exciting platform in which to present and discuss the latest scientific developments in the area of water, energy, and biogeochemical cycles. Both GEWEX, as part of the World Climate Research Programme, and iLEAPS, as part of the International Geosphere-Biosphere Programme, will provide at this conference a unique opportunity for cross-fertilization betwee n the science represented by their respective communities, leading to more fruitful cooperation in order to address present day and future climate and global change challenges.

Call for Papers

Scientists are invited to submit abstracts related to the themes of the parallel science conferences. A more detailed announcement about abstract submissions will be issued in September 2008 Please check the GEWEX and iLEAPS web sites for updated information, or contact the International GEWEX Project Office (gewex@gewex.org) or the iLEAPS International Project Office (ipo@ileaps.org) with questions.

Important Dates

Sept 2008	**Call for Papers**
15 Dec 2008	**Abstract Submission deadline**
24-28 Aug 2009	**Conference Dates**

Conference Venue

The Parallel Science Conferences will be held at the Hotel Sofitel in Melbourne, Australia, which was recently awarded the Australian Traveller Magazine's "Best City Hotel" award and is located in the heart of the dining, shopping and theater district of Melbourne.

Melbourne sits on the shores of Port Phillip Bay on the northern banks of the Yarra River. Capturing Australia's friendly nature with an added sense of style, Melbourne is a dynamic and exciting city where modern architecture and innovative design are juxtaposed with heritage buildings that reflect the rich colonial history of Australia. Melbourne is the nation's fashion capital, the cultural events heartland, and a city that is passionate about sport, especially Australian Rules Football and cricket, both played at the world-famous Melbourne Cricket Ground. Melbourne is also renowned for its range and quality of live music.

Just outside the city centre lies Southbank, the arts and entertainment precinct of Melbourne, where it is easy to spend hours leisurely browsing through Arts Centre venues, strolling riverside through the promenades, shopping, dining and enjoying the attractions here. Dominating the horizon of Melbourne, the Dandenong Mountain Ranges offer forest hikes, beautiful parrots and magnificent views of the City and Port Phillip Bay.

Day trips from the city of Melbourne include the Healesville Sanctuary, a unique bushland environment showcasing over 200 species of Australian wildlife, and the rolling hills of Yarra Valley, home to more than 30 wineries that offer tastings, tours, fine meals and magnificent views. Phillip Island, a natural habitat with seals and koalas, is one of the best places to view the "Fairy" Penguins. Also outside the city is one of the world's most scenic coastline drives, the Great Ocean Road.

Please visit *http://www.visitmelbourne.com* for more information.

Water In A Changing Climate

Progress In Land-Atmosphere Interactions and Energy/Water Cycle Research

Parallel Science Conferences with Joint Sessions

Global Energy and Water Cycle Experiment GEWEX WCRP

Sixth International Scientific Conference on the Global Energy and Water Cycle

http://www.gewex.org

iLEAPS

Second Integrated Land Ecosystem-Atmosphere Processes Study Science Conference

http://www.ileaps.org

24-28 August 2009
Melbourne, Australia

WCRP World Climate Research Programme | WHO | IDC | ICSU | GLOBAL CHANGE

WGNE and parametrizations Status and future plans

Christian Jakob
Monash University
Co-Chair of WGNE and Chair of GMPP

Motto of the talk:

Behold the turtle. She only makes progress when she sticks her neck out.

James Bryant Conant

WGNE mission

Terms of Reference

(i) Advise the JSC and CAS on progress in **atmospheric modelling.**

(ii) Review the **development of atmospheric models for use in weather prediction and climate studies on all scales**, including the diagnosis of shortcomings.

(iii) **Propose numerical experiments** aiming to refine numerical techniques and the formulation of atmospheric physics processes, boundary layer processes and land surface processes in models.

(iv) Design and promote **coordinated experiments** for:

- validating model results against observed atmospheric properties and variations;
- exploring the intrinsic and forced variability and predictability of the general circulation of the atmosphere on short to extended ranges;
- assessing the intrinsic and forced variability of the atmosphere on climate timescales.

(v) **Promote the development of data assimilation methods** for application to numerical weather and climate predictions, and for the estimation of derived climatological quantities.

(vi) Promote the development of **new methods for numerical weather prediction and climate simulation**.

(vii) Maintain **scientific liaison** with other WCRP and CAS groups as appropriate.

(viii) Promote the timely exchange of information, data and new knowledge on atmospheric modelling through **publications, workshops and meetings.**

The goal:
A framework for parametrization research

Motivation

- Parametrizations are important for all model applications from weather to climate.
- Their current and future role have been somewhat distorted recently.
- Perceived slow progress compared to general model development and computer power.
- Parametrization development needs team effort and modelling centres have reduced their relative effort in this area - **An already small community has shrunk even further.**
- Lack of visibility in the WMO structure

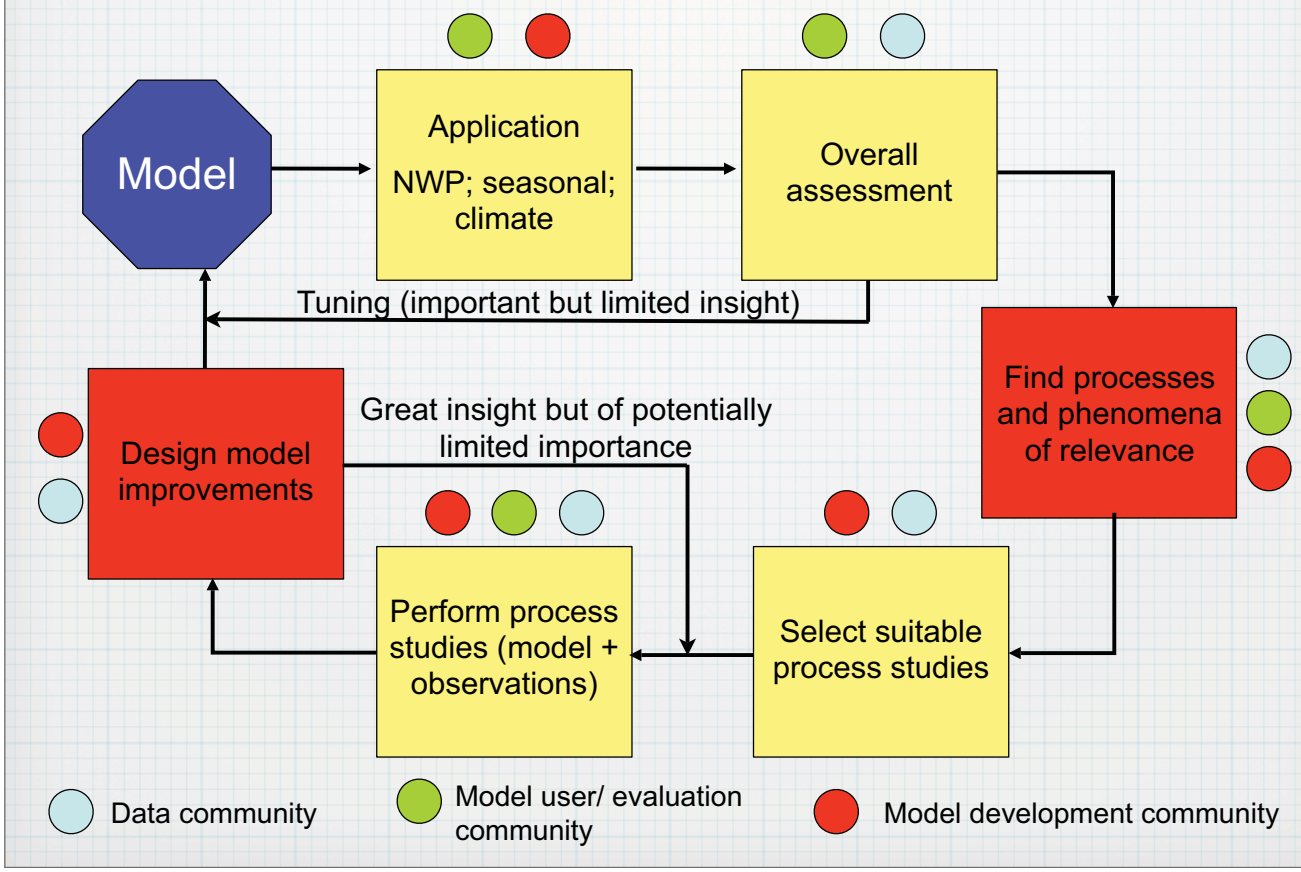
Goals of the new effort

* Promote and stimulate parametrization development.
* Facilitate dialogue between developers and model users.
* Facilitate activities like workshops etc.
* Ensure a critical (expert) mass within the community to make real progress in the coming years
* IMPROVE MODELS

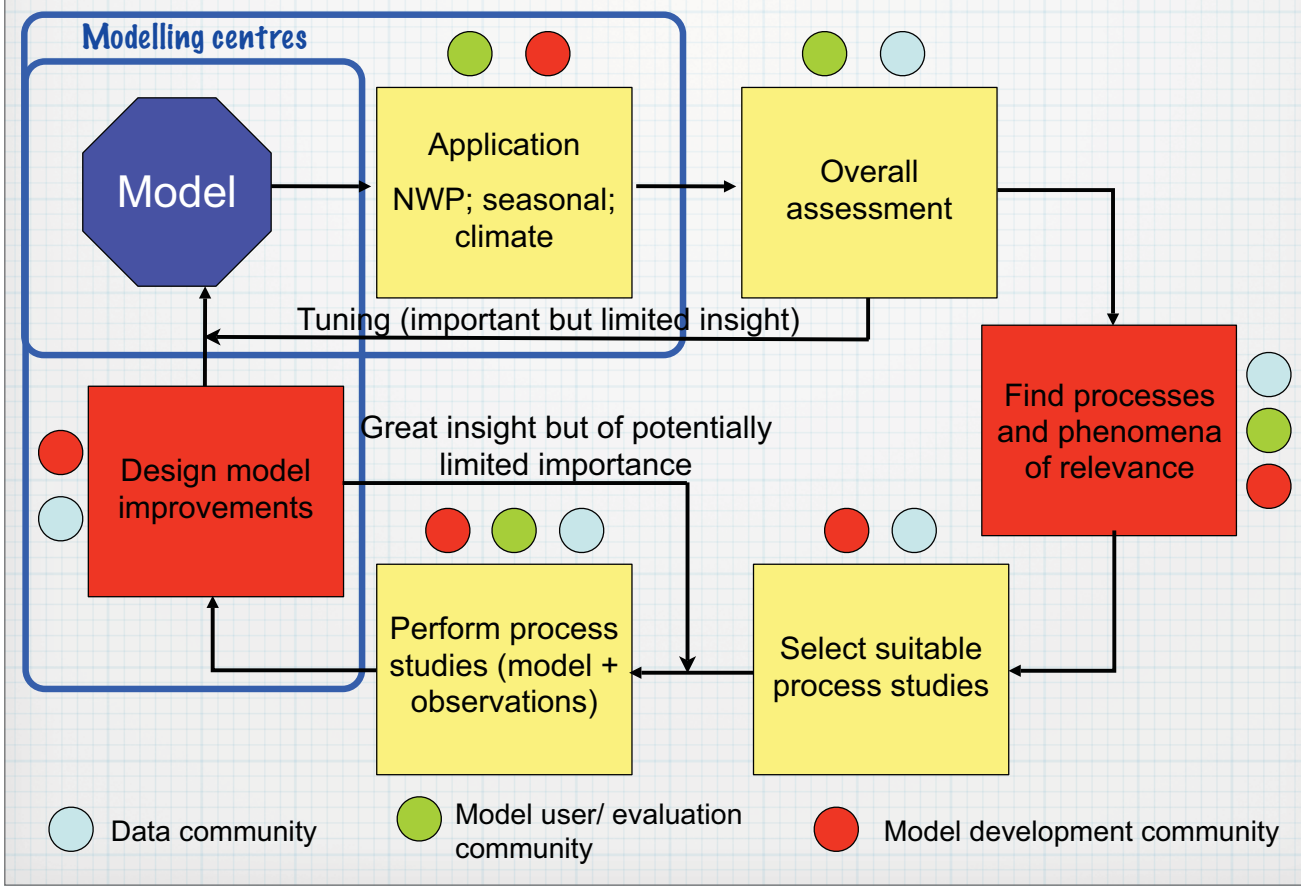
History

* Proposal by GMPP to reorganize parametrization within WCRP
* CAS restructure -> request to WGNE to pick up parametrizations
* Led to joint proposal to WCRP-JSC and CAS to have a parametrization sub-group led by a new WGNE co-chair
* Proposal approved and C Jakob appointed as co-chair of WGNE

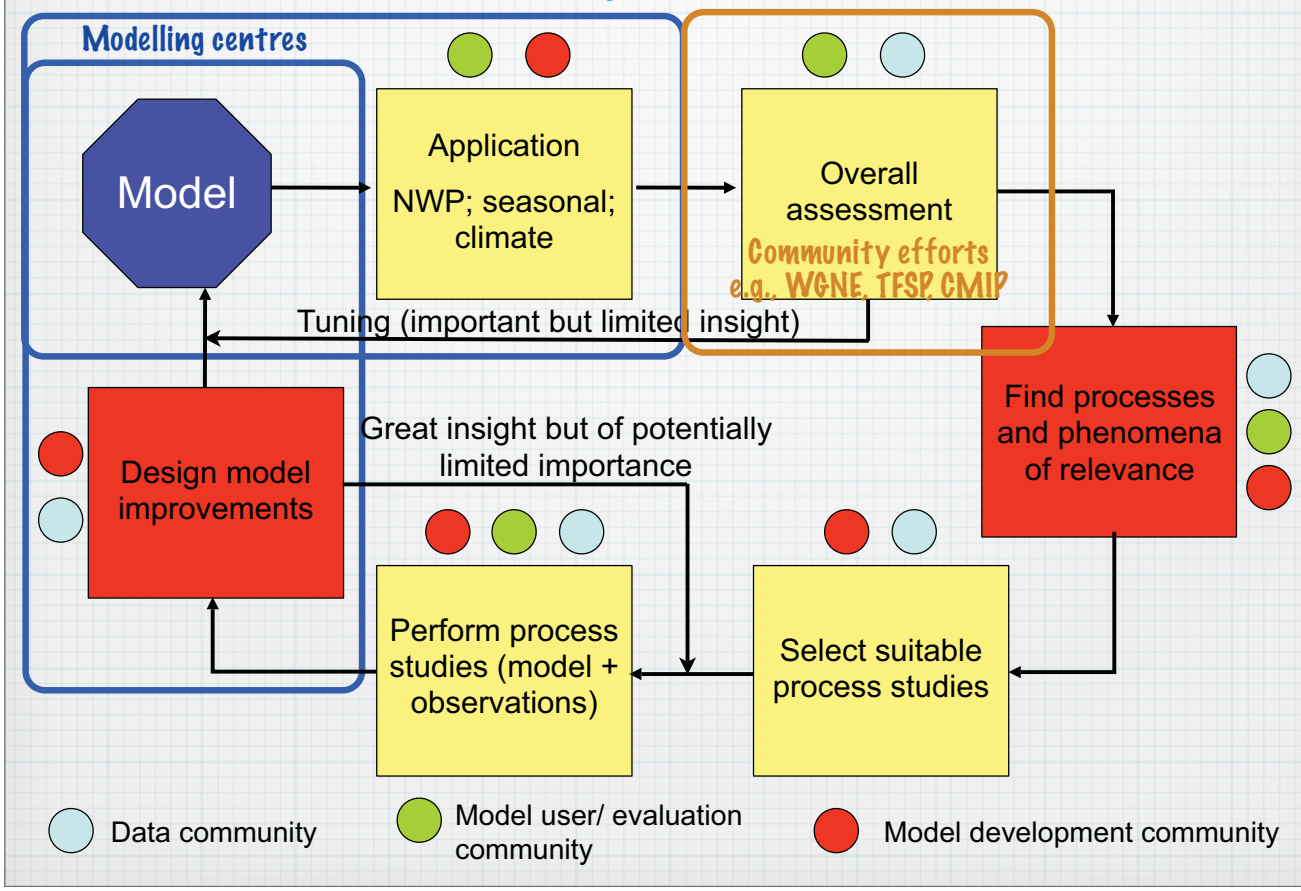
Model development framework



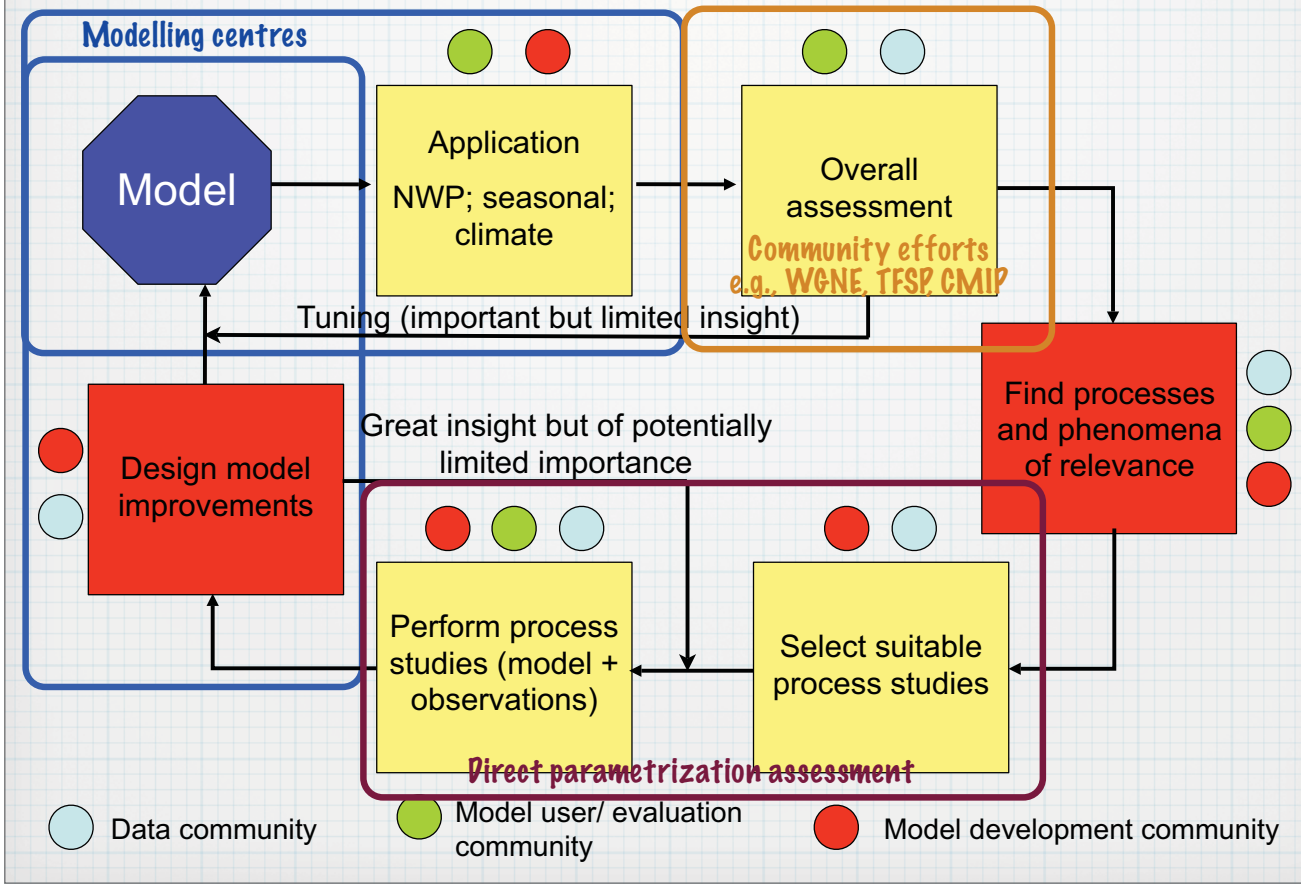
Model development framework



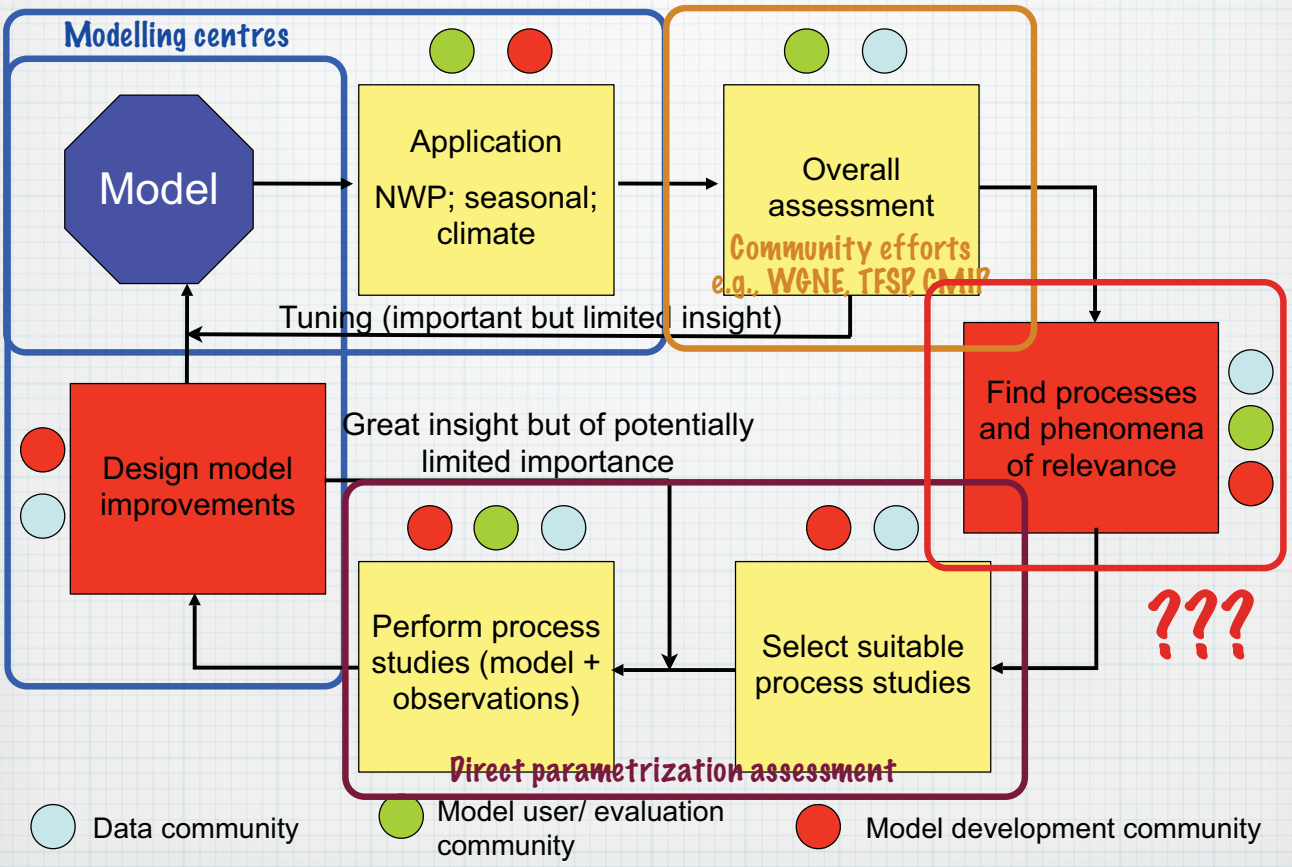
Model development framework



Model development framework



Model development framework



Where are we currently?

- Strong and well coordinated efforts exist for
  - Clouds and convection (GCSS)
  - Land surface (GLASS)
  - PBL (GABLS)
- Some links between communities have been established
  - WGNE-GMPP connection
  - CFMIP-GCSS connection
  - THORPEX and YOTC links to parametrization are emerging ?

Where are we currently?

- Gaps and opportunities in current coordination
  - Parametrization for high-resolution models
  - Ocean community
  - Cryosphere community (both land and sea)
  - Model application community engagement needs strengthening (THORPEX, WWRP, WGSIP, ...)
  - Coordinated efforts to prioritize developments -> strong link to model evaluation and diagnostics community
  - ...

Some necessary steps

- Engage model application communities
  - NWP = WGNE/WWRP/THORPEX
  - Seasonal = WGSIP
  - Climate = WGCM
  - High-resolution modelling = WWRP
  - Others?

Some necessary steps

- Engage various model development communities
  - Atmosphere = GEWEX/WGNE 
  - Land = GEWEX 
  - Ocean = WGOMD 
  - Ice = CliC 
  - Others?

Proposed activities in next 12 months

Proposed activities in next 12 months

* An audit of all application communities on parametrization problems (real and perceived) that limit progress. Request prioritization! (started)
* An audit of all model development communities to canvass current activities (started)

Proposed activities in next 12 months

* A white paper on the current and future role of parametrizations in ESMs and their components
  * Identify the need for future developments
  * Identify successes and issues
  * Develop pathways
* A conference/workshop on parametrizations in ESMs (see later)

Practical steps

* Spread the word! (attend meetings and get more people to next WGNE)
* Find co-conspirators in ocean and ice areas?
* Form writing team for white paper.
* Begin conference organization.
* Pick a few cross-cut areas to focus the effort.

Tropical convection

Phenomena of interest

Diurnal Cycle | QPF | Tropical Cyclones | MJO | Monsoons | Cold-tongue bias | ...

Tools

LES | CRM | mesoscale LAM | RCM | Global AGCM | Global AOGCM | ESM | ...

Observation efforts

Field studies | Satellites IR | Satellites TRMM | Satellites CloudSat | ...

Existing coordination

GCSS | YOTC | WGNE | THORPEX | ...

Tropical convection

Phenomena of interest

Diurnal Cycle QPF Tropical Cyclones MJO Monsoons Cold-tongue bias ...

Tools

LES CRM mesoscale LAM RCM Global AGCM Global AOGCM ESM ...

Observation efforts

Field studies Satellites IR Satellites TRMM Satellites CloudSat ...

Existing coordination

GCSS YOTC WGNE THORPEX ...

Low-level clouds

Phenomena of interest

Fog and Stratus (Aviation) Stratocumulus (Forecasts) Shallow cumulus Trades, MJO Cold-tongue bias Cloud-climate feedback ...

Tools

LES mesoscale LAM RCM Global AGCM Global AOGCM ESM ...

Observation efforts

Field studies Satellites general Satellites CloudSat ...

Existing coordination

GCSS CFMIP WGNE THORPEX ...

Other

* Stable PBL
* Drag
* Land-atmosphere coupling
* Clouds and precipitation in extra-tropical cyclones
* ...

Whatever we decide to do, we do need better models!

Some questions

* Should we extend the effort beyond clouds/convection, PBL and land? Yes
* If so, how is it best achieved? Slowly
* How do we engage the applications community effectively? Meeting attendance and dialogue
* Are the proposed activities for next year sensible? Somewhat