

GEWEX Modeling and Prediction Panel (GMPP)

Jan Polcher (GMPP Chair)

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Pan GMPP activities

The GMPP panel coordinates the activities within GEWEX which aim at improving the representation of the global water and energy cycle within Earth system models. Particular attention is being paid to cloud systems, land-surface processes and the atmospheric boundary layer (ABL). The following groups exist to cover these activities:

- GEWEX Cloud System Studies: GCSS
- Global Land/Atmosphere System Studies: GLASS
- GEWEX Atmospheric Boundary Layer Study: GABLS

GMPP keeps a close link with the Atmospheric Model Intercomparison Project (AMIP) in order to ensure that the activities within the panels are relevant to atmospheric models and that the global modeling community is aware and can take advantage of the improvements proposed in cloud, land-surface and ABL conceptual models. The annual meeting with WGNE allows a close collaboration with the numerical weather prediction community.

1 Summary of activities in 2004

The original plans called for a pan-GMPP workshop on the diurnal cycle in 2004. In March 2004 it was felt that this workshop was too early for the GMPP panels as they did not yet have time to prepare the topic. Furthermore, there was not enough lead time to ensure a broad participation for this workshop.

Still, stronger collaboration between the 3 panel remains the top priority for GMPP and the diurnal cycle will be the theme which will achieve this. A new strategy was devised during the WGNE/GMPP meeting in October 2004 in Exeter.

2 Planned activities

During the Exeter meeting the identity of GMPP within the WCRP was again on top of the agenda. It is felt that the fact that GMPP is the only group within WCRP dedicated to the development of the conceptual models needed to represent cloud, land surfaces and the ABL within global models is not properly recognized. The activities of GMPP are crucial to ensure that the global models used by other WCRP programs simulate a credible water and energy cycle. This lack of recognition of GMPP activities becomes more critical with the creation of the modeling group within COPES.

It was decided during the GMPP meeting that closer collaboration between the three panels was the most productive way of strengthening the identity of GMPP. In the current functioning of GMPP there is no opportunity for the full panels of GCSS, GLASS and GABLS to meet and exchange ideas on collaborative projects. It is thus decided to propose to the GEWEX-SSG to change the meeting agenda of GMPP. The new agenda should allow meetings between the 3 panels, keep the link with WGNE and not overburden the travel plans of the panel chairs. The proposed new scheme calls for a pan-GMPP panel meeting in even years while in odd years the common WGNE/GMPP meeting would be maintained. In this plan the first pan-GMPP panel meeting would take place in autumn 2006.

At the 2004 GMPP meeting the link between the regional modeling activities of GHP in the Transferability Working Group (TWG) and GMPP were discussed. It was decided to ask GHP/TWG to nominate a person who would ensure the link between both groups. GMPP feels that this person should preferably be somebody with a model development background to facilitate the transfer of parameterization

improvements to regional climate models. It is hoped that this link will promote parameterization development within regional climate models and produce a closer collaboration between field experiments carried out under GHP and model inter-comparisons conducted by GMPP.

With this proposed change the GMPP panel would have the following membership:

- GMPP panel chair (Jan Polcher)
- GCSS panel chair (Christian Jakob)
- GLASS panel chair (Paul Dirmeyer)
- GABLS panel chair (Bert Holtslag)
- AMIP panel chair (Peter Gleckler)
- GHP/TWG representative (TBD)

GEWEX Cloud System Studies (GCSS)

Christian Jakob

1 About GCSS

The goal of GCSS is to improve the parameterization of cloud systems in GCMs (global climate models) and NWP (numerical weather prediction) models through improved physical understanding of cloud system processes. The current main tools to achieving this aim are case studies in which Cloud Resolving Models and Single Column Models (1-d versions of full GCMs) are compared to observations and with each other. While very successful, it has been recognized that this approach alone is insufficient to develop model and parametrization improvements (see Jakob, November 2004 GEWEX Newsletter).

The subject of identifying better ways to make GCSS and its outcomes even more useful to the GCM community was a major discussion point at the last meeting of the GCSS Science Panel in New York from 21-23 September 2004. The meeting was kindly hosted by the NASA Goddard Institute for Space Studies. The reorganized GCSS panel now consists of 8 members and the 5 GCSS Working Group (WG) leaders. As part of the reorganization of the panel, each of its members is now holding a portfolio for which she/he carries responsibility in the GCSS programme. The members and portfolios are:

- Dr. Christian Jakob (BMRC) – Chair
- Dr. Steven Krueger (Univ. of Utah) – Cloud Resolving Models
- Dr. Pier Siebesma (KNMI) – Large Eddy Simulation Models
- Dr. Steve Klein (LLNL) – Climate Models
- Dr. Martin Miller (ECMWF) – NWP models
- Dr. Thomas Ackerman (PNNL) – Observations
- Dr. William Rossow (NASA GISS) – Data Integration for Model Evaluation

2 Future plans

At the panel meeting several important issues were discussed:

1. To align GCSS more directly with GCM developments each WG has been tasked to design a study that involves full GCM and or NWP simulations that are aligned with the current case studies undertaken by the group. Furthermore it was decided to attempt to involve the GCM evaluation community as well as broader parts of the data community more directly into the GCSS process. This is aimed at covering the full model evaluation process, as recently described in Jakob, November 2004 GEWEX Newsletter, within GCSS. The panel sees the forthcoming 3rd Pan-GCSS meeting in Athens in May 2005 (see below) as an excellent opportunity to foster this closer collaboration.
2. A new summary of the role of GCSS based on its current scientific activities as well as challenges identified by the community will be prepared by the panel for discussion at the Pan-GCSS meeting in May 2005.
3. To increase the visibility of GCSS in the community it was decided to publish an electronic GCSS Newsletter on regular basis (3 to 6 monthly).
4. The panel supported the cross group activity of the GCSS Pacific Cross Section Intercomparison (GPCI, see www.gewex.org/gcss.html for more details). This activity compares and evaluates GCMs along a cross section from the coast of California to the ITCZ, encompassing many major tropical and sub-tropical cloud systems. This activity is lead by Dr Joao Teixeira (NRL).
5. The panel supported the establishment of an across-WG microphysics effort. Dr Ulrike Lohmann (ETH Zurich) will be organizing this effort. The first meeting of this group will take place during the Pan-GCSS meeting in Athens. Its first focus will likely be the microphysics of mixed-phase clouds.

3 Summary of activities in 2004

The organization of the 3rd Pan-GCSS meeting on “Clouds, Climate and Models” is now well underway. The meeting will take place from 16-20 May 2005 in Athens, Greece. Sponsorship from several funding organizations has been secured. The sponsoring organizations as of 9 December 2004 are NASA, the US Department of Energy’s ARM program, NSF, the University of Athens, and WCRP through GEWEX. GCSS is extremely grateful for the generous support by these organizations. The meeting will host plenary sessions as well as meetings of all GCSS WGs and cross-WG activities. The rationale for such a meeting is not only to bring the entire GCSS community together but also to rationalize travel in particular for the small GCM parametrization groups. The latter can usually not afford to attend separate annual meetings of the individual WGs, which are usually held in different locations. The common meeting period for all groups should ensure a closer direct involvement of the GCM community in GCSS, a major goal expressed over recent years. The plenary sessions of the meeting will cover the subjects of “Perspectives on the importance of clouds in the climate system”, “Methodologies and metrics in assessing models”, “The fundamental role of precipitation in cloud systems”, and “Progress in the representation of clouds in large-scale models”.

The work of the GCSS working groups is progressing well. The WG on boundary layer clouds led by Dr Christopher Bretherton (University of Washington) is continuing its investigation of marine stratocumulus clouds and is currently in particular focussing on the role of drizzle in such clouds. The WG on cirrus has made only limited progress and the new chair of the group, Dr Steven Dobbie (Univ. of Leeds) is currently devising a new case study for the group, most likely based on observations taken with a suite of instruments at the UK radar / lidar observatory in Chilbolton. The WG on extra-tropical layer clouds chaired by Dr George Tselioudis (NASA GISS) is continuing their analysis of model performance during the March 2000 Intensive Observation Period at the ARM SGP site in Oklahoma. New model evaluation techniques developed in this group show great promise in disentangling the causes for the model errors identified by the group. The WG on deep convective system is continuing their work on the diurnal cycle of deep convection. The group will soon switch to the study of the transition from shallow to deep convection over the tropical oceans using data from TOGA COARE. While geographically separate this study will have a close physical relationship to that on the diurnal cycle. In both cases clouds grow gradually from shallow to deep convection, a process GCMs are currently only poorly representing. The WG on polar clouds chaired by Dr James Pinto (NCAR) will focus on understanding and modelling mixed-phase clouds that frequently exist on the top of stable boundary layers in the Arctic. The simulation of such clouds is a challenge from both the cloud-dynamical and microphysical viewpoint. Data recently collected during the Mixed-Phase Arctic Cloud Experiment (MPACE) will be a major source of activities for this working group. Meetings of the WGs took place throughout the year usually in conjunction with larger conferences.

Overall the work of GCSS is progressing well. The suggested small changes in focus as well as the more direct inclusion of the larger GCM and observation communities while building on our strengths in conducting detailed cloud process studies should make GCSS an even more relevant group of GMPP

GEWEX Global Land-Atmosphere System Study (GLASS)

Paul Dirmeyer

1. About GLASS:

The goal of GLASS is to encourage the development of the next generation of Land Surface Schemes (LSS) by coordinating their evaluation and inter-comparison, and applying them to scientific queries of broad interest. Membership of the Panel is:

Luis Bastidas, Martin Best, Paul Dirmeyer (chair), Ann Henderson-Sellers, Paul Houser, Randy Koster, Taikan Oki, Christa Peters-Lidard, Andy Pitman, Bart van den Hurk, and Nicolas Viovy.

2. Status:

GLASS is divided into four actions that constitute a two-by-two matrix; one axis being coupled (land-atmosphere) versus offline (land-only) modeling, and the other being local (point, plot and catchment scale) versus large-scale (continental to global) modeling. There is also a data management and software component called ALMA (Advancing Land-surface Modeling Activities).

The GLASS science panel met in Kyoto, Japan on 15-17 September 2004. The meeting was held in conjunction with a workshop on the Second Global Soil Wetness Project (GSWP-2). Current information on GLASS projects can be found at: <http://hydro.iis.u-tokyo.ac.jp/GLASS/>.

Community: GLASS is having an increasing number of direct interactions with other elements of GEWEX and the broader scientific community. The components of GMPP are becoming more closely knit, and the local coupled action (LoCo) is pursuing a close collaboration with GABLS. With GHP there is continuing significant interaction with ISLSCP (mainly through GSWP), CEOP (ALMA and potentially LoCo) and AMMA. There are plans for GSWP-2 to contribute to GRP efforts to compile global energy and water cycle datasets over land (LandFlux), particularly for those components that are not well observable by satellite. Beyond GEWEX, GLASS has been involved in early planning for COPEs, particularly in its modeling strategy. Also, the active component of the local coupled action (GLACE) is a joint project with the CLIVAR Working Group on Seasonal-Interannual Prediction (WGSIP). There is also coordination with the new IGBP Integrated Land Ecosystem – Atmosphere Processes Study (iLEAPS), as the GLASS chair is the designated GEWEX liaison to that effort. GLASS has also become active in the current IPCC efforts, including lending our expertise to model output analysis efforts in Working Group 1, and a proposal (by A. Pitman) of a multi-model study into the global impacts of land use change on the climate signal. A second phase of SnowMIP is beginning, and we have been approached by that community seeking guidance and perhaps membership in GLASS. GLASS continues to be closely aligned with the various operational efforts in land data assimilation in Europe and the U.S. NASA's Land Information System (LIS) has used GSWP-2 as a testbed for its attempts to run multiple LSS in a common framework for land data assimilation. Finally, interaction is beginning with the urban modeling community as an important frontier for weather and climate prediction, as the resolution of forecast models continues to increase.

PILPS: The San Pedro experiment (PILPS-SP) has been delayed, and a new timeline has been set. Poor communication resulted in the project being underpublicized, but that has been corrected and participation now appears to be good. Several groups have submitted results of step 1 (uncalibrated simulations over the Arizona sites), and steps 2 and 3 (release of validation data and multi-criteria algorithms for calibration) are underway. The website for the experiment is <http://www.sahra.arizona.edu/pilpssanpedro/>.

PILPS C-1 (Carbon) is concluding its analysis phase, other past PILPS projects are still generating publications (see accomplishments), and an Isotope-PILPS has been approved and is moving ahead in 2005. Collaboration in the AMIP project continues (AMIP2 DSP-12) generating publications as results from AGCMs are released through PCMDI.

GSWP: The Second Global Soil Wetness Project (GSWP-2) is wrapping up its main modeling phase, and is now moving into the analysis phase. 16-18 models are participating. Baseline simulations and sensitivity studies have been completed by most of the modeling groups and have been sent to the Inter-

Comparison Center (ICC) at the U. Tokyo for QC, inter-comparison and redistribution. There is no final deadline for submissions, but late entries are less likely to be included in multi-model analyses or publications. A multi-model analysis (monthly and daily data) for the 10-year period is currently being produced, and should be released about the time the SSG meets. Papers on the application of a forward microwave brightness temperature model to LSS output to simulate L-band sensor measurements has been completed (Gao et al. 2004), and a paper on the issues of multi-model averaging techniques and transferability of calibration parameters is in preparation. The 19th Conference on Hydrology at the AMS Annual Meeting in San Diego has a full session on GSWP-2. The ICC has launched a web site giving the scientific community access to images and data from all of the participating models at <http://haneda.tkl.iis.u-tokyo.ac.jp/gswp2/>. See <http://www.iges.org/gswp/> for more information on the project.

GLACE: The Global Land-Atmosphere Coupling Experiment (GLACE) is the principal multi-model project underway in the large-scale coupled action. The experiment has produced a paper in the journal *Science* (Koster et al. 2004) which has brought considerable attention to the role of the land surface in climate predictability and variability, and the spatial variability of the strength of land-atmosphere coupling. Two additional papers will have been submitted to *J. Hydrometeor.* describing the experiment results in more detail, including a breakdown of the separate contributions of the terrestrial and atmospheric components of the hydrologic cycle to the overall coupling between soil moisture and precipitation. Two more papers are in preparation that will describe results from a subset of models that performed the experiment with multiple version of their models, and an assessment of the real-world land-atmosphere coupling strength and the models' ability to represent it correctly. A full description of the experiment is available online at <http://glace.gsfc.nasa.gov/>.

Local Coupled Action: The local coupled action (LoCo) now has a plan and intention to collaborate strongly with GABLS to pursue the role of land-PBL interaction though local coupled modeling. The next GLASS panel meeting is being planned for September in De Bilt jointly with GABLS, to be hosted by Bart van der Hurk and Bert Holtslag (chair of GABLS), to foster interaction between the two communities. In 2005 LoCo will conduct limited preliminary modeling studies with an eye towards improved simulation of the diurnal cycle of surface fluxes, linking with GABLS to also study growth of the daytime boundary layer.

Pan-GLASS Issues: GLASS is also addressing cross-cutting issues in the climate modeling community. One involves the continuing problem of initialization of soil wetness in climate models, and the lack of transferability of soil moisture data sets from one model to another. Proof-of-concept work with the ECMWF and Hadley Centre models has been completed at last, and GLASS is preparing a summary paper on the issue to educate the broader modeling community as to the pitfalls of treating soil moisture as a uniformly defined quantity across models.

3. Future Plans

PILPS: The aim of the *IPILPS* (Isotopes in PILPS/GLASS) initiative is to contribute to an international inter-comparison of current state-of-the-art isotope parameterization efforts in coupled climate, atmospheric and earth system models by promoting comparison among land-surface schemes that incorporate isotopic representation under the auspices of GLASS. Isotopic data exist and, so far, there has been no tuning of models to these data. However, as databases become more prevalent, schemes will be tested against, and tuned to fit, isotopic measurements. There is, therefore, some urgency in establishing an international intercomparison. *IPILPS* comprises the land-surface modelling component of this GEWEX –wide effort.

PILPS-C1 is considering extending the study to more sites which include different vegetation types (more than 30 sites potentially available) to understand how the inter-biome variability compares with the inter-model variability, and to find which biomes are correctly/incorrectly simulated. There is particular interest in including the year 2003, available for most of European sites, because of the extreme drought over Europe. This will provide a test of model response to high hydric stress and high temperature and can serve as a test of how models simulate vegetation response to climate change similar to those expected by the end of the 21st century.

GSWP: The most tedious parts of GSWP-2, preparation of forcing data and integration of the models, is largely complete. The scientifically rewarding part of the project is now ramping up. The multi-model analysis will result in not only a new climatology of the land surface, but an assessment of uncertainties as quantified by model spread. A GSWP-2 overview paper centered on the multi-model analysis should be submitted in Spring 2005. Model comparison work will continue, and evaluation of the models with a variety of in situ and remote sensing data will begin in earnest. The suite of sensitivity studies will provide a spectrum of interesting investigations, including the role of uncertainty in precipitation measurements on our estimation of the land surface component of the hydrologic cycle, the role that surface radiative fluxes play in linking the surface energy balance to the water cycle, an assessment of the quality of the major reanalysis products as they relate to global surface hydrology, how differences in the specification of global vegetation coverage by the various global products available impacts the simulation of land surface climate, and what role is played by interannual variations of vegetation in surface hydrologic variability and climate feedbacks. Studies of model uniqueness (are all these LSSs redundant?) and transferability are also planned. There is strong interest within the HYDROS and SMOS communities to use GSWP-2 output data in the continued planning and development of those satellite missions.

Finally, production, application and evaluation of the forcing data for the baseline simulation has revealed where we can do better, and a new baseline forcing data set will be prepared in 2005. All current studies will continue with the runs produced using the original forcing data, but it is likely that improved baseline LSS integrations and a better multi-model analysis will result from this effort.

GLACE: A proposal to NASA has been submitted to expand on the intriguing results of GLACE and cross-couple three LSSs with three AGCMs, so that the separate roles of land model, atmosphere model, and coupled interactions in determining land-atmosphere coupling strength can be examined more thoroughly. Also, as mentioned previously, a proposal for a multi-model land-use change experiment has been proposed. Results would not be complete in time for the current IPCC assessment, but it could still answer the question of whether land use change is as important a signal trend as changes in atmospheric composition.

LoCo: The Local Coupled Action is the most logical point of interface with other GMPP studies, as they tend to operate primarily at this scale. LoCo plans to begin with modeling experiments based on data from the CASES site, HAPEX-Sahel and for transects across one or more of the "hot spots" found in GLACE. Later studies might move to CEOP reference and FluxNet sites. CASES would be a preliminary inroad to GABLS, which has complete a nocturnal boundary layer study for that location. Full convergence of joint planning between LoCo and GABLS will occur with the joint meeting in September 2005. In time, LoCo would also interface with efforts in GCSS and couple current LSSs to LEMs and CRMs.

Pan-GLASS: A synopsis paper on GLASS for a broad audience (e.g. in EOS) is being considered for submission in about one year's time. The purpose is to bring to the attention of the broader earth science community the important issues in land surface modeling, and its implications for a growing range of research areas.

4. Summary

Overall GLASS has enjoyed a very fruitful and productive year, with noteworthy progress in many areas and wide recognition of our specific efforts in coupled land-atmosphere modeling. The success of GLASS lies in its appeal to participants in a broad range of interests from operational, research and educational institutes. Participants feel they have something to gain beyond what they can accomplish individually, and we all reap the rewards. Its multi-model multi-institutional approach gives its efforts a credibility, applicability, and degree of oversight that increases the quality of science produced. There is still much to be done, but our first five years have laid a sound base for future efforts.

GEWEX Atmospheric Boundary Layer Study (GABLS)

Bert Holtslag

1. About GABLS

The objective of GABLS is to improve the representation of the atmospheric boundary layer in regional and large-scale models for weather and climate studies. For additional information see <http://www.met.wau.nl/projects/Gabls/index.html>. The first focus of GABLS is on stable boundary layers (SBLs) over land. At the moment about forty scientists are active participating within GABLS, including members of university groups seeking for international cooperation.

2. Background and Achievements in 2004

In 2002, a first GABLS bench-mark case was selected to discuss the state of the art and to compare the skills of single column (1D) models and Large-Eddy Simulation (LES) models for the Stable Boundary Layer. The case was based on the results presented in a study by Kosovic and Curry (2000) for a shear-driven and stable case. As such the boundary layer is driven by an imposed, uniform geostrophic wind, with a specified surface-cooling rate over ice, which attains a quasi-steady state SBL (after about 9 hours). The findings were presented and discussed at a workshop at the University of the Balearic Islands in Mallorca, September 22-26, 2003.

Overall the results indicate that the models show quite significant differences for the mean temperature and wind profiles as well as the turbulent fluxes and other model outputs for the same initial conditions and forcing conditions. It appears that this is very strongly related to the choice of the turbulent length scale and/or the stability functions in the turbulence schemes, and not so much to the vertical resolution. Overall the results for the different LES models are much more closely than for the 1D models.

Interestingly the models in use at operational weather forecast and climate centres typically allow for enhanced mixing resulting in too deep boundary layers, while the typical research models show less mixing in more in agreement with the 'Large Eddy Simulation' results for this case. Because of the enhanced mixing in weather and climate models, these models tend to show a too strong surface drag, too deep boundary layers, and an underestimation of the wind turning in the lower atmosphere. At the other hand, by decreasing the mixing and surface drag, a direct impact on the atmospheric dynamics ('Ekman pumping') may be noted. Consequently, cyclones may become too active, corresponding in too high extremes for wind and precipitation, et cetera. When the models with enhanced mixing are coupled to a surface energy balance, they also produce too high surface temperatures.

On basis of the first GABLS bench-mark case, eight articles have been compiled and submitted to a special issue of Boundary Layer Meteorology on GABLS. This includes two papers with summary results for the LES and the 1D models, as well as six additional papers highlighting specific issues. So far two papers are accepted, and the others are under review or have been re-submitted after review. It is expected that the special issue will appear in 2005.

Given the GABLS findings, there is a clear need for a better understanding and a more general description of the atmospheric boundary layer under stably stratified conditions in atmospheric models for weather and climate. As such a summary report on the GABLS findings was written for the new IPCC report of working group 1 (Chapter 8). In August 2004, several GABLS related papers were presented at the '16th Boundary Layers and Turbulence Conference', in Portland, USA. In addition a GABLS workshop was held afterwards discussing the state of art and setting up a second GABLS bench-mark case.

3. Future Plans

The second GABLS bench-mark case will be based on a realistic boundary-layer case covering three diurnal cycles over land within the CASES99 data set. This case has been studied and prepared by the Meteorology group at Wageningen University (Steenefeld, Van der Wiel and Holtslag, J.Atmos. Sci, 2004, Submitted). Detailed observations for three nights are available with rather different characteristics

(fully turbulent, intermittent turbulent and non-turbulent). Steeneveld et al use a one-dimensional model with prescribed advection and full physics, e.g. first order turbulence closure, a grey body approximation radiation scheme and refined descriptions for the coupling of the atmosphere to the land surface and soil processes. Despite the totally different characteristics of the three nights, the column model was able to predict the major quantities and the evolution of the stable boundary layer. Especially the evolution of the vegetation temperature, soil heat flux and the sensible heat flux during the transition from day to night is simulated rather well.

It is proposed to use this case for the inter-comparison of different column models within GABLS using prescribed surface temperature. For an intercomparison of LES models probably only one night will be selected (currently in preparation). The focus of the next intercomparison of column models is again on the behavior and performance of the various boundary layer parameterizations, this time both for day and night conditions. In addition, the proposed intercomparison case has received interest from the GLASS/LOCO community as a suitable case to study also the interaction of the ABL with the land surface. A combined LOCO/GABLS workshop on this is planned for 19-23 September 2005 in De Bilt, NL (hosted by Bart van den Hurk and Bert Holtslag).

Atmospheric Model Inter-comparison Project

Peter Gleckler

For over a decade the Atmospheric Model Intercomparison Project (AMIP) has served the climate modelling community as benchmark experiment. Although important modifications in the experiment were made between AMIP1 and AMIP2, the basic experimental protocol has remained unchanged. Support for AMIP has waned in recent years in favor of furthering progress of the Coupled Model Intercomparison Project (CMIP). Nevertheless, the WGCM, WGNE and GMPP continue to recognize the AMIP experiment to be an essential complement to CMIP and other modeling activities. There are circumstances when examination of the less complex (no atmosphere-ocean feedback) system reveals important information, and AMIP has the additional advantage of being more directly comparable to observations (e.g., the years in which ENSO events arise are predetermined).

At the October 2004 WGNE/GMPP in Exeter, Peter Gleckler (LLNL/PCMDI) explained that efforts are underway to conclude the AMIP2 exercise. PCMDI will continue archiving new AMIP2 simulations until mid 2005, but beyond that AMIP (and CMIP) have essentially been overtaken by events unfolding in preparation for the Fourth Assessment of the IPCC. In support of the WGCM, PCMDI has begun archiving an unprecedented collection of new simulations requested by the WGCM Climate Simulation Panel. In addition to a spectrum of climate change scenarios, this ambitious list of simulations includes both AMIP and CMIP simulations. Information on this endeavor is available at: http://www-pcmdi.llnl.gov/ipcc/about_ipcc.php, including details on how the anticipated 40Tb database is being served to the research community. It is expected that the future of coordinated climate modeling intercomparisons will morph out of this endeavor, and that the AMIP effort will somehow be re-invigorated as a companion exercise to future coupled model experiments.