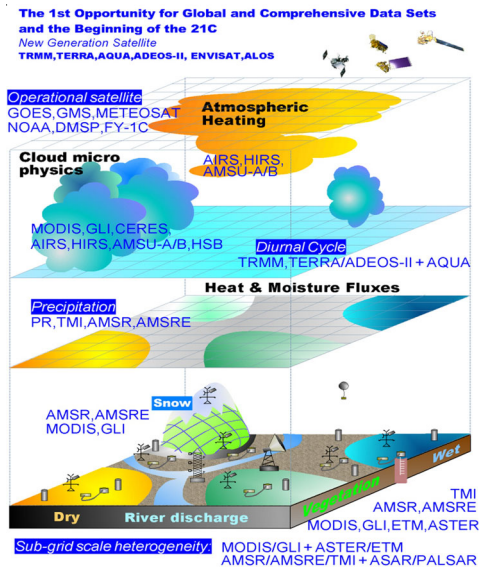


PHASE II GEWEX

With the data beginning to arrive from the first of the new series of earth system satellites (e.g., TERRA, TRMM, AQUA, ENVISAT, ADEOS II, Cloudsat and Calypso), and with the success of the projects developed within Phase I, GEWEX is moving into Phase II building upon:

- New global descriptions of the Earth's environment,
- Upgraded model representations on which to base predictions,
- New local and regional descriptions of key processes, and
- An increasing focus on water resource applications.

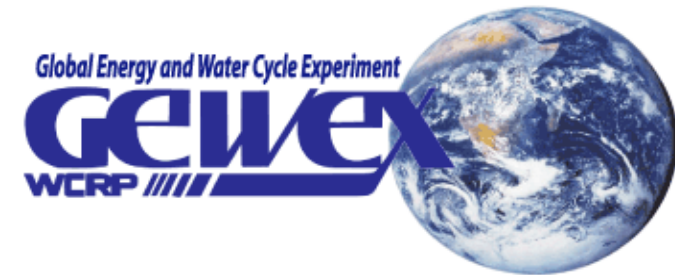


One of the primary elements of Phase II is the Coordinated Enhanced Observing Period (CEOP), which was initiated in 2001. CEOP is geared toward bringing together in situ, satellite, and model data (with global coverage over the same time period) to support key science objectives in climate prediction and monsoon studies.

PHASE I ACCOMPLISHMENTS

Results from Phase I include:

- 10-25 year global data sets of clouds, precipitation, water vapor, surface radiation, and aerosols — indicating no large global trends, but with evidence of regional variability.
- Implementation of the land surface and cloud parameterization upgrades suggested for most regional and global models — showing improved precipitation prediction.
- Initial results from the five major GEWEX continental-scale experiments — approaching closure of the regional water and energy budgets and determining the importance of recycling and diurnal processes for regional predictions.



Phase II:

Understanding and Predicting the Earth's Energy and Water Cycle

Phase II SCIENCE QUESTIONS

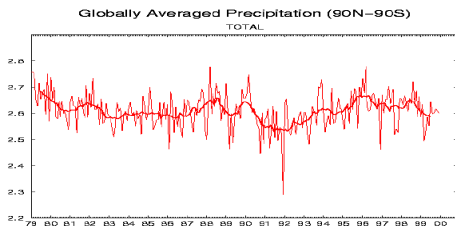
- Are the Earth's Energy Budget and Water Cycle Changing? Is the Water Cycle Accelerating?
- Can we Predict these Changes for up to Seasonal and Interannual Timeframes?
- How do Global Energy and Water Cycle Processes Contribute to Climate Feedbacks and the Causes of Natural Climate Variability?
- What is the Impact of the Variability in the Global Energy Budget and Water Cycle on Water Resources?

International GEWEX Project Office
E-mail: gewex@gewex.org

<http://www.gewex.org>

Building on Phase I Results, GEWEX Projects are Providing Significant Contributions

GPCP RELEASES NEW PRECIPITATION PRODUCTS



The new 20+ year GPCP monthly precipitation (mm/d) for 1979-2000. Another new 20-year GPCP product (pentad or 5-day) shows increased periods of convective precipitation associated with Madden-Julian Oscillation activity.

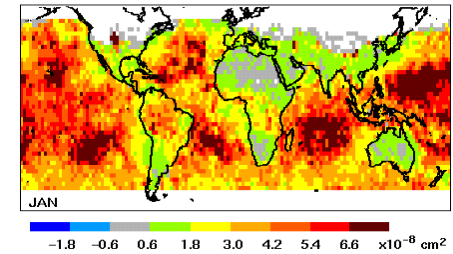
Radiation

- Baseline Surface Radiation Network (BSRN)
- Global Aerosol Climatology Project (GACP)
- Global Precipitation Climatology Project (GPCP)
- Global Water Vapor Project (GvAP)
- International Satellite Cloud Climatology Project (ISCCP)
- Surface Radiation Budget (SRB) Project

Modeling

- GEWEX Atmospheric Boundary Layer Study (GABLS)
- GEWEX Cloud System Study (GCSS)
- GEWEX Global Land/Atmosphere System Study (GLASS)
 - Global Soil Wetness Project (GSWP)
 - Project for Intercomparison of Land-Surface Parameterization Schemes (PILPS)

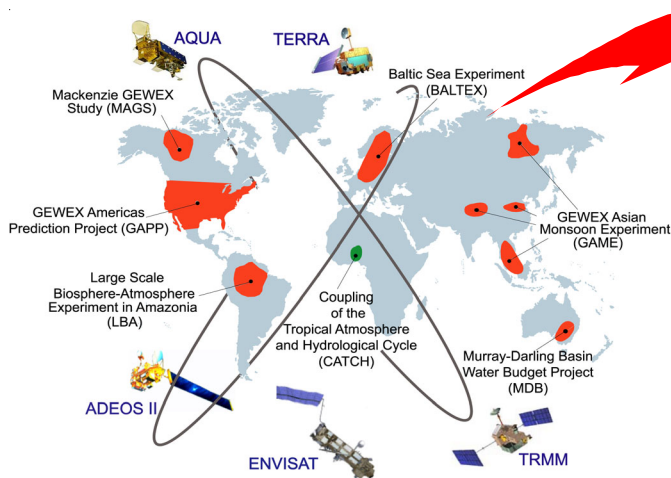
ISCCP DATA USED TO ADDRESS A KEY IPCC QUESTION



ISCCP data have shown that albedo increases as a result of increases in droplet concentration (indirect aerosol effect) mostly over oceanic clouds and that there is little albedo change for clouds over most continents.



GEWEX Program Strategy



Regional Continental Scale Experiments (CSEs)



Observe and Understand



Model Globally for Prediction



Apply Locally

See back for Phase I results and Phase II science questions

The GEWEX Program Strategy is to build upon current projects and data; produce data sets of the global distribution and variability of clouds, surface radiation, aerosols, water vapor, precipitation, and land surface characteristics; conduct modeling programs to model all aspects of the hydrologic and energy cycles with evolving fully coupled atmosphere-land-ocean components; and conduct pilot studies with international participation encompassing the full range of experimental scales (regional-, continental-, and global scales).

Coupling the land-atmosphere at the mesoscale has been the initial strategy for GEWEX and the five major continental-scale campaigns that have been underway to provide new process and modelling understanding in the Amazon, Baltic Sea, Mississippi River Basin, MacKenzie River Basin, and four basins in Asia (Thailand, Tibet, Siberia and China). A West African campaign is also in the planning stages.