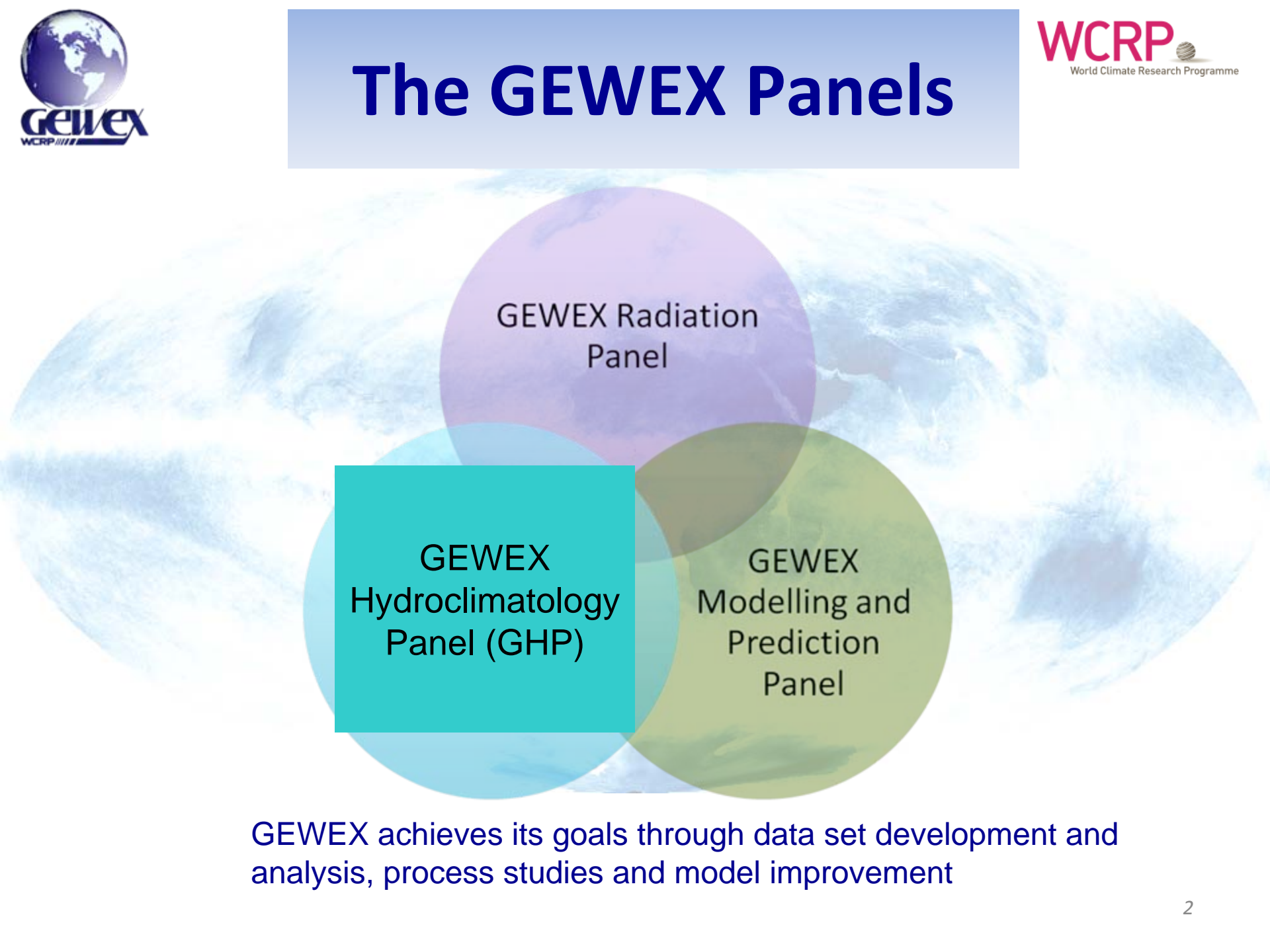


On the current planning status of CEOP/GHP and GEWEX / GREW

**The new GEWEX SSG chair:
Kevin Trenberth, NCAR**

The GEWEX Panels



GEWEX Radiation
Panel

GEWEX
Hydroclimatology
Panel (GHP)

GEWEX
Modelling and
Prediction
Panel

GEWEX achieves its goals through data set development and analysis, process studies and model improvement

The GEWEX Panels

CEOP was chaired by 2 co-chairs
(until recently T. Koike and R. Stewart)

The new GHP is co-chaired by Dennis Lettenmair and NN (to be appointed).

They will chair a **new steering panel consisting of 8 members** (tbd).

One panel member will represent the group of RHPs (including BALTEX at present).

GEWEX Project Organization

RADIATION

GEWEX Radiation Panel (GRP)

C. Kummerow, Chair; J. Schulz, Vice-Chair

- **BSRN** **Baseline Surface Radiation Network** (E. Dutton)
- **CIRC** **Continuous Intercomparison of Radiation Codes** (L. Oreopoulos)
- **GACP** **Global Aerosol Climatology Project** (M. Mishchenko)
- **GPCP** **Global Precipitation Climatology Project** (R. Adler)
- **ISCCP** **International Satellite Cloud Climatology Project** (W. Rossow)
- **I3RC** **Intercomparison of 3-D Radiation Codes** (R. Cahalan)
- **LandFlux** **Land Surface Fluxes** (W. Rossow)
- **RAMI** **Radiation transfer Model Intercomparison** (J-L Widlowski)
- **SeaFlux** **Sea-Surface Fluxes** (C. Clayson)
- **SRB** **Surface Radiation Budget Project** (P. Stackhouse)
- **WGDMA** **Working Group on Data Management and Analysis** (W. Rossow)

Assessment Working Groups:

- **Aerosols** (S. Christopher; J. Reid)
- **Clouds** (C. Stubenrauch)
- **Radiation** (P. Stackhouse)

MODELLING AND PREDICTION

GEWEX Modelling and Prediction Panel (GMPP)

C. Jakob, Chair

- **GABLS** **GEWEX Atmospheric Boundary Layer Study** (B. Holtslag; G. Svensson)
- **GCSS** **GEWEX Cloud System Study** (P. Siebesma; C. Bretherton)
 - **ACPC** **Joint GCSS/iLEAPS Project on Aerosols, Clouds, Precipitation and Climate** (B. Stevens/GCSS; A. Meinrat/iLEAPS)
 - **DIME** **Data Integration for Model Evaluation** (R. Rossow)
- **GCSS Working Groups**
 - **Boundary Layer Clouds** (A. Lock)
 - **Cirrus Cloud Systems** (S. Dobbie)
 - **Cloud Climate Feedback**
 - **CFMIP-GCSS Intercomparison of LES and SCMs** (M. Zhang; C. Bretherton)
 - **Cloud Microphysics** (U. Lohmann)
 - **GCSS Pacific Cross-section Intercomparison** (J. Teixeira)
 - **Polar Clouds** (J. Pinto; H. Morrison)
 - **Precipitating Convective Cloud Systems** (J. Petch)
- **GLASS** **GEWEX Global Land/Atmosphere System Study** (B. van den Hurk; M. Best)
 - **ALMA** **Assistance for Land-surface Modelling Activities**
 - **GLACE-2** **Global Land/Atmospheric Coupling Experiment** (R. Koster)
 - **GSWP-3** **Global Soil Wetness Project** (T. Oki)
 - **LoCo** **Local land-atmospheric Coupling** (B. van den Hurk)
 - **LUCID** **Land-Use and Climate, Identification of robust impact** (A. Pitman)
 - **PILPS** **Project for the Intercomparison of Land-surface Parameterization Schemes** (A. Pitman)

HYDROCLIMATE

Coordinated Energy and Water Cycle Observations Project (CEOP)

T. Koike; D. Lettenmaier, Co-Chairs

Regional Hydroclimate Projects (RHPs)

- **AMMA** **African Monsoon Multidisciplinary Analysis Project** (T. Lebel)
- **BALTEX** **Baltic Sea Experiment** (H.J. Isemer)
- **CPPA** **Climate Prediction Program for the Americas** (J. Huang)
- **LBA** **Large-Scale Biosphere-Atmosphere Experiment in Amazonia** (A.C. Araujo, L. Horta)
- **LPB** **La Plata Basin Project** (H. Berbery)
- **MAHASRI** **Monsoon Asian Hydro-Atmospheric Science Research and Prediction Initiative** (J. Matsumoto)
- **MDB** **Murray-Darling Basin Water Budget Project** (J. Evans)
- **NEESPI** **Northern Eurasia Earth Science Partnership Initiative** (P. Groisman)

Regional Studies

- **Cold Region** (T. Ohata)
- **High Elevation** (G. Tartari)
- **Monsoon** (J. Matsumoto; H. Berbery; W. Lau)
- **Semi-arid** (C. Fu)

Data Management

- **Reference Sites, River Basins** (S. Williams)
- **Model Output** (M. Lautenschlager)
- **Satellite Data** (T. Koike)
- **Data Integration and Dissemination** (T. Koike)
- **Central Data Integration** (T. Koike)

Cross-Cutting Studies

- **Water and Energy Budget Studies** (K. Yang)
- **Extremes** (R. Stewart)
- **Isotopes** (D. Noone; K. Yoshimura)
- **Aerosols** (W. Lau)

Modelling Studies

- **Global Models** (M. Bosilovich)
- **Regional Models**
 - **Inter-Continental Transferability Study** (B. Rockel)
 - **Scale Interaction Evaluation Experiment** (R. Arritt)
- **Land Surface Models** (M. Rodell)
- **Hydrologic Applications Project** (E. Wood)

Affiliated Global Organizations

- **GPCC** **Global Precipitation Climatology Centre** (U. Schneider)
- **GRDC** **Global Runoff Data Centre** (U. Looser)

Key GEWEX question

**„Which of the present
GHP projects/groups will survive the
re-orientation (focussing) of GEWEX
(Post-2013) ?“**

How do GEWEX activities fit into a new WCRP structure?

Main proposals from JSC-31

- **Core projects retained** but with revised responsibilities to facilitate climate system research at the interface of the physical Earth system components:

- Ocean-atmosphere (think CLIVAR)
- **Land-atmosphere (think GEWEX)** ←
- Cryosphere (think CliC)
- Stratosphere-troposphere (think SPARC)

- Within each core project there is a common set of basic “themes”:

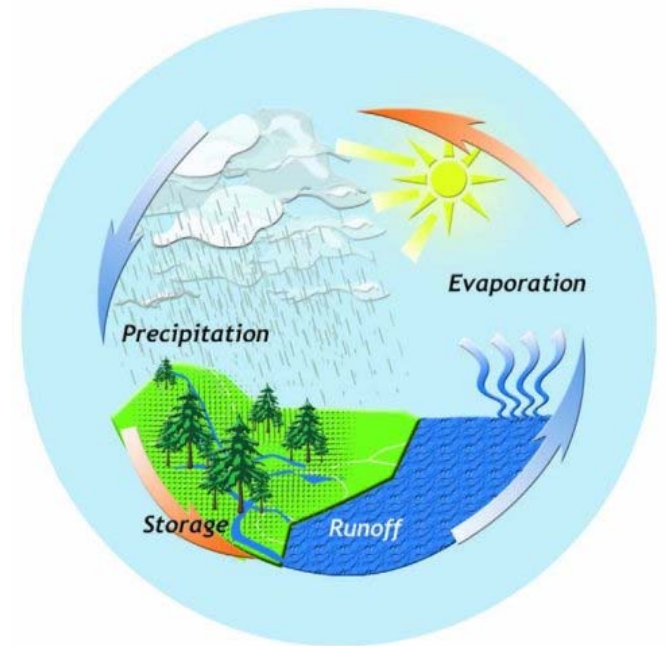
- Observations and analysis
- Model development, evaluation and experiments
- Processes and understanding
- Applications and services
- Capacity building

Some Key Issues for GEWEX

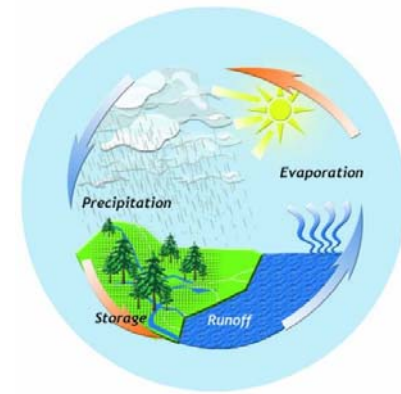
- How much of the science of GEWEX falls under “land-atmosphere”?
- What about the activities that do not?
- More generally, how should we organize activities spanning Earth system domains and other integrating themes?
 - monsoons
 - extremes ...
- Maybe the proposed structure will lead to fewer standing panels and this would allow GEWEX more flexibility to address “grand challenges” and emerging issues?
- Will IPOs based around “land-atmosphere” be attractive to funders? What would be its remit? (Same for all other core groups).

GEWEX : post 2013

- **Global and Regional Energy and Water project (GREW)**
- [GEWEX grew]
- Possible new name mooted



GEWEX: post 2013



Mission statement

- To develop improved observational, diagnostic and modeling capabilities **focusing on land-atmosphere interactions** to measure and predict global and regional energy and water variations, trends, and extremes such as heat waves, floods and droughts; and provide the science underpinning climate services.

GEWEX Imperatives

Approach

- **Imperatives were defined at SSG in Jan 2010**
- Must be fleshed out in pan-GEWEX mtg in Aug 2010
- We must prepare draft doc of science needs & implementation

Imperatives: Headlines

DATA

- Develop **climate data records** of atmospheric and land variables, complete with metadata and error bars.
- Provide **descriptions** and analyses of observed variations, trends and extremes in hydrological and energy-related quantities.

ANALYSIS

- Develop advanced **diagnostic tools** and identify pathways for model improvement.
- Increase understanding of energy and water cycle **processes**, quantify their contribution to climate feedbacks, and develop improved hydro-meteorological parameterizations.

Imperatives

- Develop and exploit methods of dealing with **non-stationarity** of hydrological variables, and especially extremes of floods and droughts, associated with climate and global change.
- Contribute to building a comprehensive end-to-end pan-WCRP initiative on climate **extremes** addressing the compound and nonlinear nature of extreme events, their ubiquity and risk coping issues.

MODELING

- **Attribute** causes of trends, and determine the **predictability** of energy and water cycles on a global and regional basis in collaboration with the wider WCRP community.

Imperatives

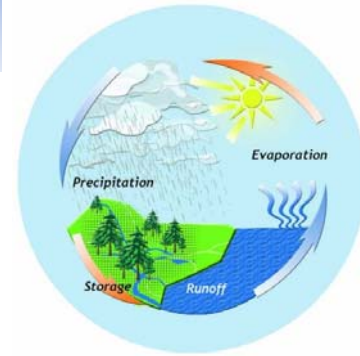
- Accelerate **developments in models** of the land, atmosphere and entire climate system.
- Improve capabilities for **predictions** of water and energy cycle variability on all time scales.

APPLICATIONS

- Develop observational sites, data processing tools, data management and archival systems, model initialization and synthesis capabilities, and other research outcomes for **transition to operations**.
- Promote and foster **capacity building** through training of scientists and the user community.

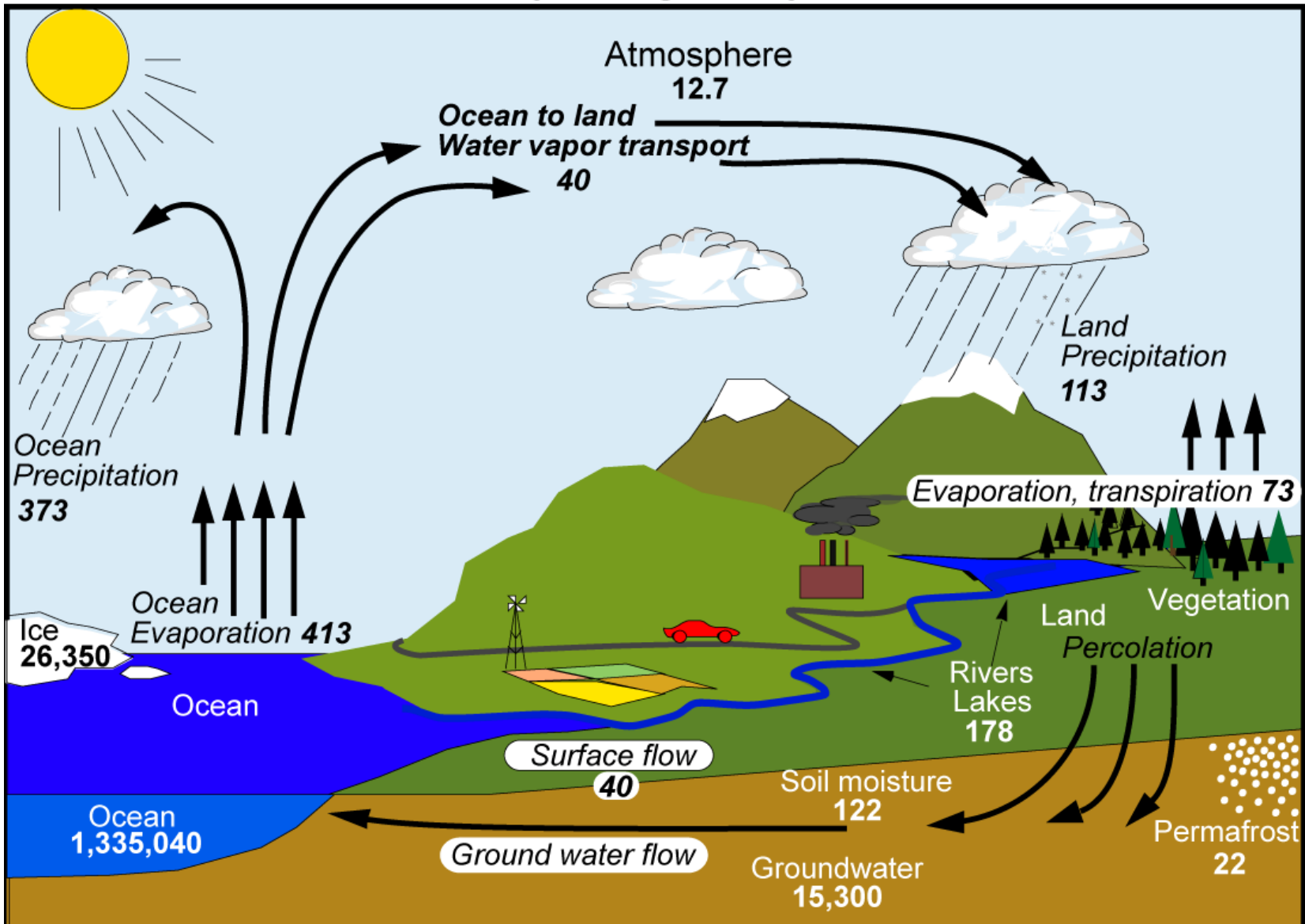
GEWEX : post 2013

What is Global and Regional Energy and Water project (GREW)?



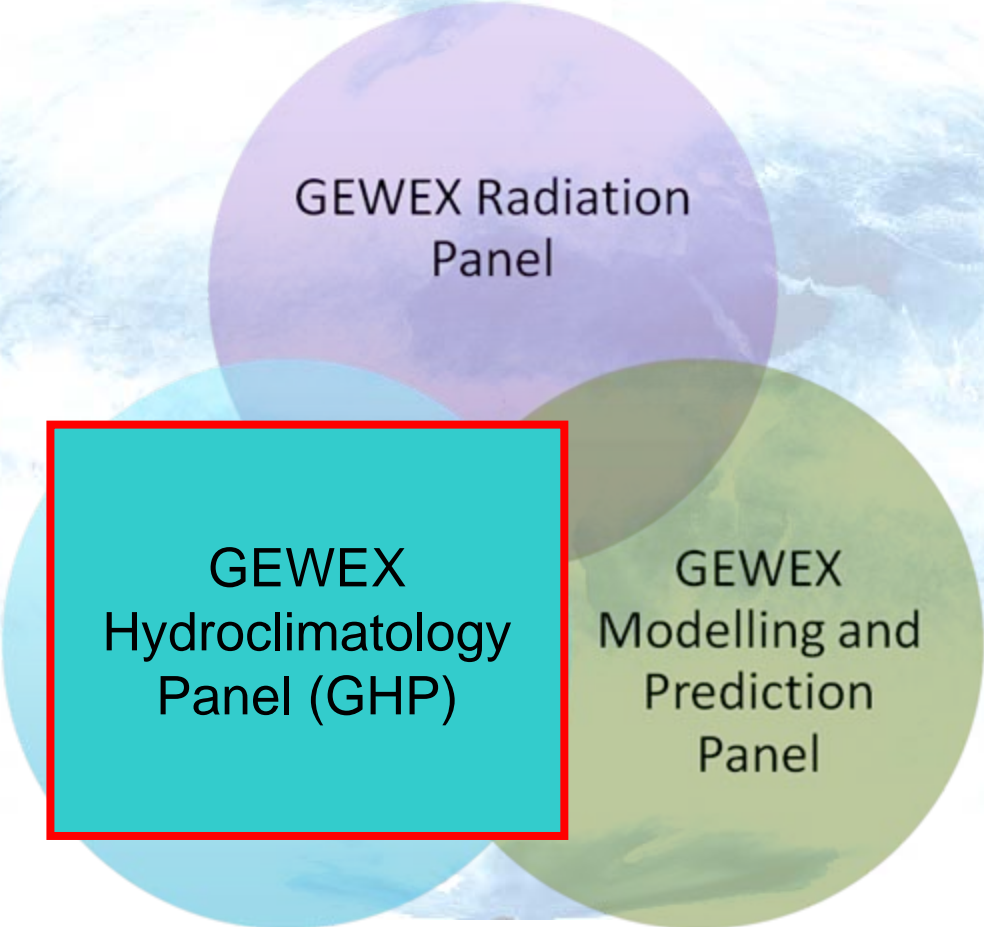
- What should be covered and how?
- If the new project is the “land/atmosphere” project, what does that entail?
- **Given the imperatives:** the things we must do, **how do we evolve GEWEX and its panels and working groups to ensure that these topics are addressed?**
- We must build on what we have done, wrap up some things, and go beyond.
- What enabling infrastructure is necessary and how do we get it?
- What, if any, modeling should be included?
- What about atmospheric processes?
- How do we deal with the cross cutting themes?

Hydrological Cycle



Units: Thousand cubic km for storage, and *thousand cubic km/yr* for exchanges

The GEWEX Panels



GEWEX Radiation
Panel

GEWEX
Hydroclimatology
Panel (GHP)

GEWEX
Modelling and
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Panel

GEWEX achieves its goals through data set development and analysis, process studies and model improvement

The new GHP

Dennis P. Lettenmair: New directions for CEOP
(GEWEX Newsletter, August 2010)

1. **Back to basics** : Put atmosphere-landsurface processes back to the core activities, following GREW imperatives
2. **Change the name to GEWEX Hydroclimatology Panel (GHP)** : CEOP is too much aligned with pure data collection
3. **Revisit the RHP interactions** : RHPs were the „crown jewels“ of the former GHP, but the qualification criteria were not continued to be enforced. (for BALTEX: strengthen interactions with HyMex!!)

Revised GREW-GHP criteria for Regional Hydroclimate Projects (RHPs) were drafted, will have to be approved and executed für all present and candidate projects after 2012 or so. (see handout !)

4. **Strengthen hydrological activities.**

„ ... all programs are eventually faced with the choice of being revitalized or dying ... „