

*Co-chairs report*  
*Jan Polcher*  
*Graeme Stephens*  
*Jan 2020*  
*Pasadena, California*

**GEWEX**

40th Session of the WCRP Joint  
Scientific Committee

# Welcome to GEWEX

## 32<sup>nd</sup> SSG



SSG-31, Geneva

# The GEWEX organization

**Scientific Steering Group:** 10 Members plus 2 co-chairs and ex-officio members of NASA, ESA, JAXA and EUMETSAT

## Science Activities:

4 Panels

Each consisting of several working Groups

Several cross-cutting activities:




Process Evaluation Studies

Monsoon Panel

WCRP GC on Extremes

WCRP GC on Water for the Food

Baskets of the World

<p><b>Data and Assessments</b></p>  <p>GEWEX Data / Analysis Panel</p>	<p>Determine atmospheric and surface radiation fluxes and heating with the precision needed to predict transient climate variations and decadal-to-centennial climate trends</p>
<p><b>Hydroclimatology</b></p>  <p>GEWEX Hydroclimatology Panel</p>	<p>Demonstrate, particularly at the regional scale, skill in predicting changes in water resources and soil moisture on time scales up to seasonal and annual as an integral part of the climate system</p>
<p><b>Modeling &amp; Prediction</b></p>  <p>GEWEX / Land - Atmosphere System Studies Global Atmospheric System Studies</p>	<p>Develop accurate global model formulation of the energy and water budget and demonstrate predictability of their variability and response to climate forcing</p>

# A GEWEX 'science and applications traceability matrix'

Provides traceability from WCRP strategies, to core science, to defined metrics to applications and to programs

## The GEWEX Mission:

Quantitative understanding and prediction of the coupling of energy and water in the changing Earth system

WCRP SP	GEWEX Goals	Overarching Science Questions	Objectives	Quantified metrics	Societal applications	Programmatic Links	WCRP IP
<b>GEWEX SATM is assimilating panel inputs</b>							



SSG



SSG



Panels : Bedrock science

WCRP strategy

WCRP implementation

# GEWEX 2019 Meetings/ Workshops (GEWEX events)

- [2020 GDAP Meeting](#) Jan 22-24, 2020
- [6th OzEWEX Workshop](#) Dec 4, 2019
- [\\*ISCCP-NG 2019 Meeting](#) Oct 28-30, 2019
- [2019 GHP Meeting \(by invitation only\)](#) Oct 11-12, 2019
- [GEWEX Hydroclimatology Panel CC Workshop: Determining Evapotranspiration](#) Oct 8, 2019- Oct 10, 2019
- [\(CFMIP 2019 Meeting on Clouds, Precipitation, Circulation, and Climate Sensitivity](#) Sep 30-Oct 4, 2019)
- [AsiaPEX Kick-off Conference 2019](#) Aug 28-30, 2019
- [High-Resolution Climate Modeling: Perspectives and Challenges](#) Aug 21-23, 2019
- [Advanced School and Workshop on American Monsoons – Progress and Future Plans](#) Aug 19-24, 2019
- [GLASS Panel Meeting](#) Aug 6-8 2019
- [GAP](#), July 2019
- [International Workshop on Convection Parametrization: Progress and Challenges](#) Jul 15-19, 2019
- [International GEWEX/GASS/LS4P and TPEMIP Regional Modeling & Aerosol in Snow Workshop](#) Jul 7-9, 2019
- [8th G-VAP Meeting](#) Jun 13-14, 2019
- [5th PannEx Workshop](#) Jun 3-5, 2019
- [12th HyMeX Workshop](#) May 20-24, 2019
- [Global Water Futures \(GWF\) 2nd Annual Science Meeting](#) May 15-17, 2019
- [Aerosols Clouds Precipitation and Climate \(ACPC\) Workshop](#) (relates to GAP) Apr 24-26, 2019
- [3rd ANDEX Workshop](#) Apr 21, 2019- Apr 24, 2019

GEWEX

WCRP  
World Climate Research Programme



## GEWEX water vapor assessment (G-VAP)

### Final Report

Oct 8, 2019- Oct 10, 2019

Sep 30-Oct 4, 2019)

Aug 19-24, 2019

Jul 15-19, 2019

Jul 7-9, 2019

Jun 13-14, 2019

Jun 3-5, 2019

May 20-24, 2019

May 15-17, 2019

Apr 24-26, 2019

Apr 21, 2019- Apr 24, 2019

# ISCCP –NG A MAJOR INITIATIVE FOR THE DECADE

**Input:** Ingesting the Raw L1b from the Advanced Geo Imagers and generating a global gridded (L1g) of the common channels on a specified grid with certain temporal resolution.

**Output:** Developing L2g and L3 products based on the L1g and other data to make information to feed applications.

**Applications:** Use our current knowledge to inform the ISCCP-NG L1g and L2g efforts to optimize their efforts to generate a data-set that has utility for the coming decades.

**\*Governance:** The specification of roles and support by space and research agencies and how to implement them in international framework..

**INPUT: L1 Common spectral channels (O~10) , 10minute, 2km global**

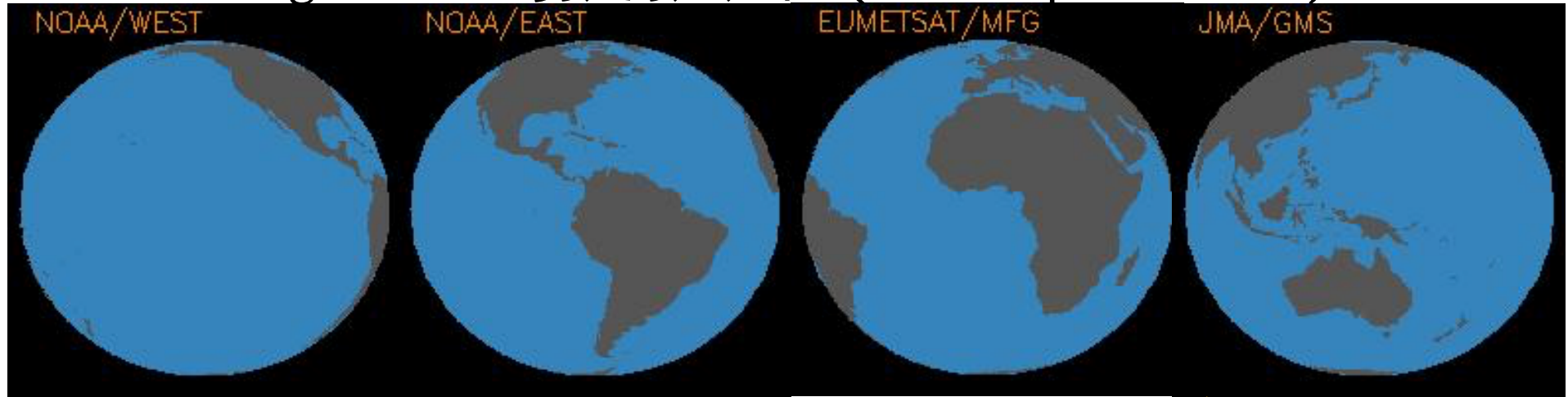
**OUTPUT: K2 Cloud properties**

**APPLICATIONS : Many**



# Global Coverage

ISCCP-1: Sub-Longitudes = -135, -75, 0, 140 (Note Gap over India)



ISCCP-NG: Sub-Longitudes -135, -75, 0, 86.5, 128, 105, 140  
Note Oversampling of Asia



**Common channels ~10**  
**Common  $\Delta x, \Delta t$**

# Precipitation initiatives/activities

- Understanding and predicting extremes
- Evaluating models - Christian Jakob
- Process understanding – warm rain PROES
- Updated climatologies (GPCP)
- Aerosol-precipitation (GAP)
- Mountain Precipitation
- Precipitation assessment (GDAP)

THE ROYAL SOCIETY

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Intensification of short-duration rainfall extremes and implications for flash flood risks

← What's on

Discussion meeting

Starts: February 03 2020 09:00 [Add to calendar](#)

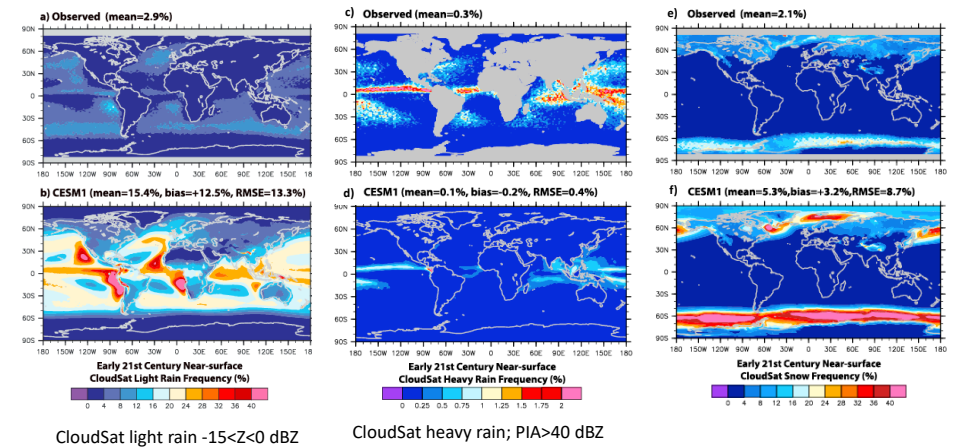
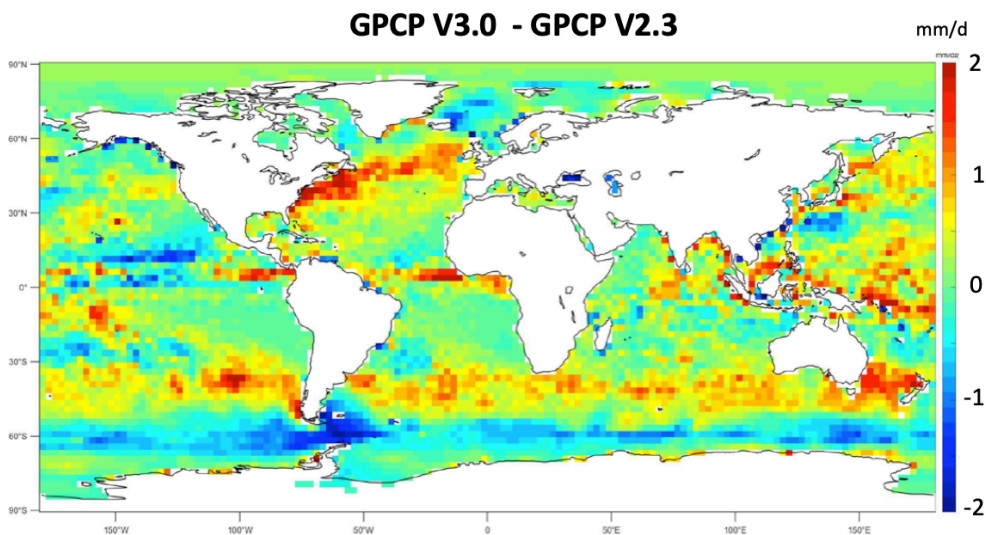
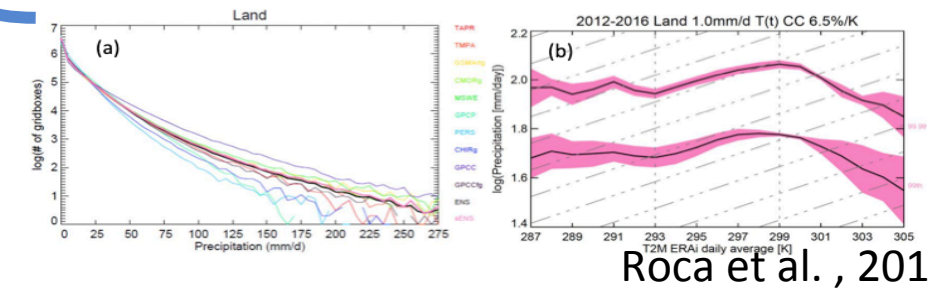
Ends: February 04 2020 17:00 [Add to calendar](#)

Register for this event

[Register now](#)

Location

The Royal Society, London, 6-9 Carlton House Terrace, London, SW1Y 5AG

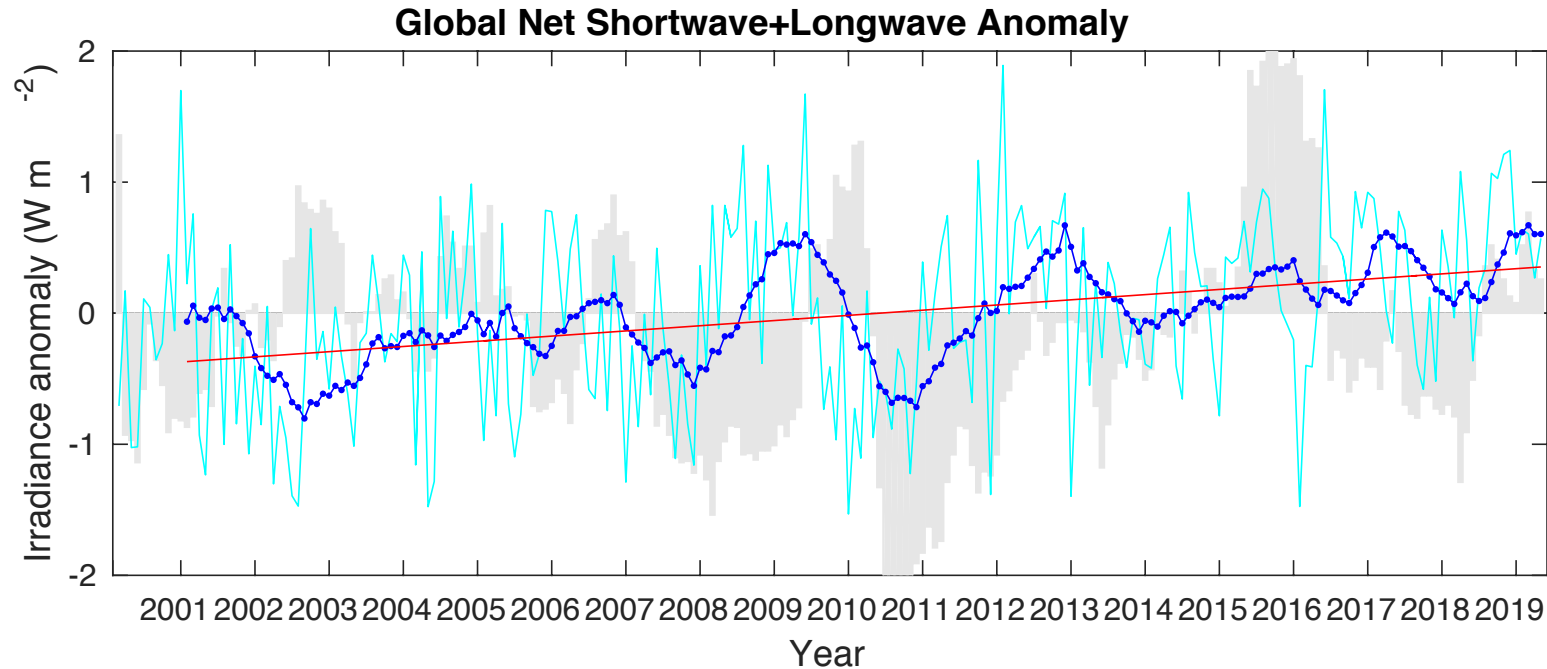


Kay et al., 2018



# EI Assessment

**GDAP Activity is underway  
It has funding to support it**

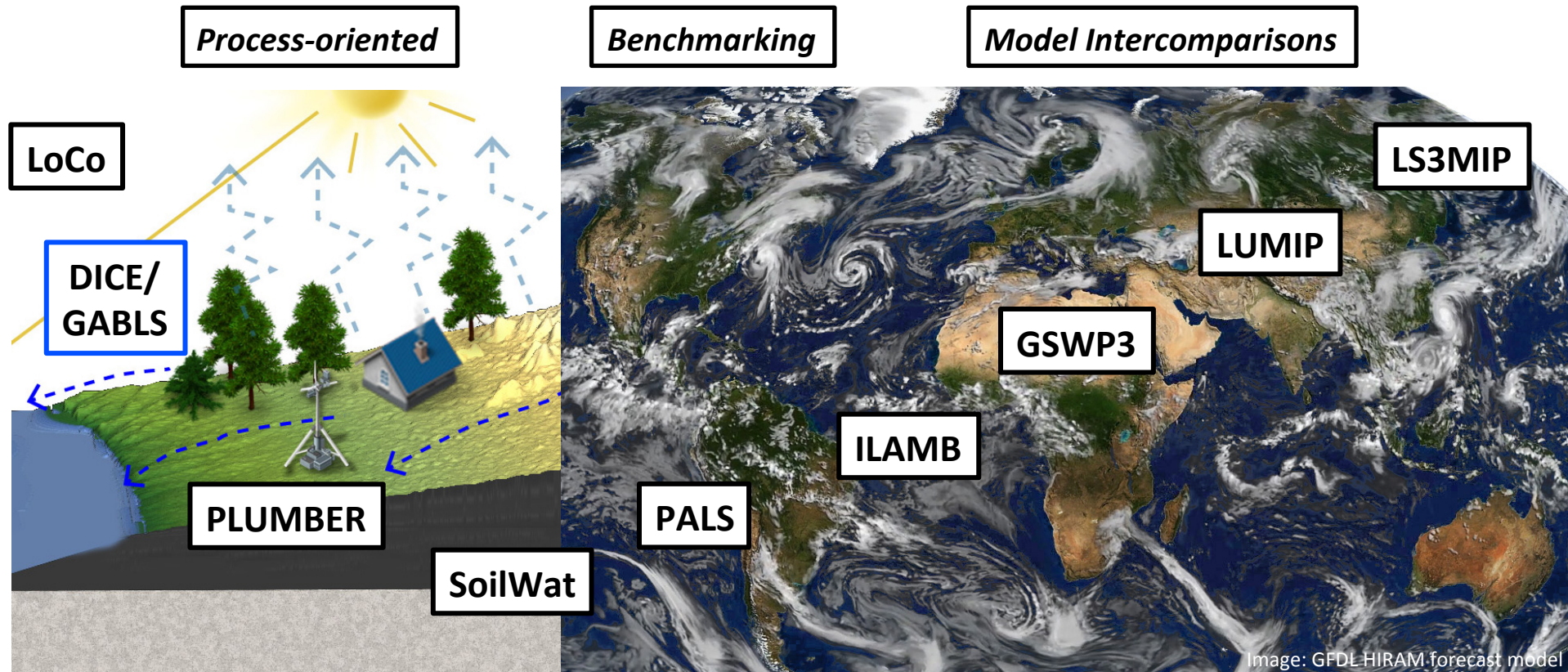


Basic question

Is this trend real

How does it relate to SLR 'acceleration'

# GLASS Projects Schematic



# Science Objectives and Activities

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## Scientific Objectives of GHP:

To understand and predict continental to local-scale hydroclimates for hydrologic applications. Addressing the water cycle at these scales allows us to better understand the many components of the system, from its physical to economic to social aspects.

## Activities of GHP

**Regional  
Hydroclimate  
Projects**

**Cross-cut  
Projects**

**Global Data  
Centers**

**GHP  
Networks**

# The GEWEX Regional Hydroclimate Projects, The Food Basket Foci Regions of the World and the CORDEX Domains

 Selected Food Basket Foci Regions

 Current Regional Hydroclimate Projects & Networks

 Current Regional Hydroclimate Projects & Networks in Preparation

 Planned or Envisioned Regional Hydroclimate Projects & Networks

