GEWEX Global Energy Water cycle Exchanges

Created by Gianpaolo Balsamo, last modified on Feb 18, 2017

What is GEWEX?

GEWEX is a core component of the World Climate Research Programme WCRP, dedicated to surface-atmosphere interactions. His Scientific Steering Group (SSG) meets once a year and the 29th edition took place in the Southern most part of China, in the island of Sanya, between **5th and 10th of February 2017 (SSG-29)**. GEWEX is one of the 4 Science panels active within WCRP organisation (together with CLiC, CLIVAR, SPARC) and works in cooperation with 4 International Working groups (WGCM, WGRC, WGSIP, WGNE) and in cross-coordination with the World Weather Research Programme WWRP. GEWEX co-chairs are Graeme Stephens (JPL) and Sonia Seneviratne (ETH) and the 2017 SSG-panel counts on 11-members.

The meeting agenda for the the SSG-29 can be found here:

http://www.gewexevents.org/gewex-ssg-29/agenda/

The GEWEX SSG-29 had review one year of science and development for the 4 expert panels:

- GEWEX Hydroclimatology Panel (GHP)
- Global Land/Atmosphere System Study (GLASS)
- GEWEX Atmospheric Boundary Layer Study (GABLS)
- GEWEX Data and Assessments Panel (GDAP)

The highlights from perspectives of potential interests at ECMWF are reported with reference to the 4 expert panels.

What is the focus of GEWEX activity?

GHP is looking after regional water cycle experiments involving dedicated campaigns and special observing periods. The ongoing work and perspectives for this panel is summarized in this figure with list of regional projects experiments:

Contribution to GEWEX-SSG

The contribution to GEWEX SSG-29 included a presentation of ECMWF research (as one of the 3 new elected members for the SSG in 2017 I was asked to present my research areas and interest) on surface-atmosphere interactions within the IFS.
The presentations/documents prepared are linked:

- A talk on ECMWF surface-atmosphere:
https://www.dropbox.com/s/77e0fuk9z6nkgm1/GEXEX_SSG29_201702_ECMWF_Balsamo.pptx
https://www.dropbox.com/s/vbts1tvmvie2kdw/GEXEX_SSG29_201702_ECMWF_Balsamo.pdf
- A GEWEX SSG/IGPO review feedback:
https://www.dropbox.com/s/7kutuxhlbpstfwd/GEWEX_panel_review_reflections.pptx
https://www.dropbox.com/s/8tebyojvbd665mp/GEWEX_panel_review_reflections.pdf
- A rapporteur contribution for GDAP panel:
https://www.dropbox.com/s/axbec7spa3ndx6c/GDAP_Report_SSG29_Draft_of_Rapporteurs_short.pdf

List of Participant to SSG-29

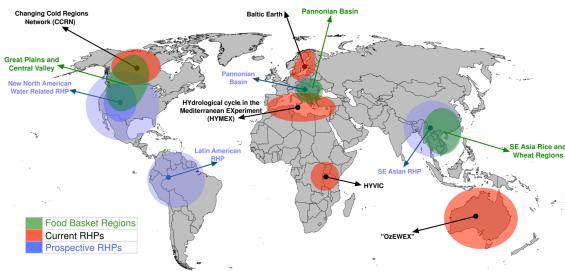| Name	Organization
Gab Abramowitz	UNSW Australia
Gianpaolo Balsamo	ECMWF
Qing Bao	IAC CAS
Joan Cuxart-Rodamilans	U Balearic Islands
Nathalie de Noblet	CEA
Michael Ek (Skype)	NOAA/NCEP
LawrenceHislop	CliC, Cryosphere
Branka Ivancan-Picek	Croatian NMHS
Sarah Jones	DWD
Boram Lee	WCRP-WMO

Figure 1: GHP Regional Hydroclimate Projects (RHPs) and Water for the Food Baskets of the World focus regions

This panel is coordinating efforts like HYMEX over the Mediterranean basin and have been delivering an impressive amount of research, to which ECMWF has contributed with ERA-Interim meteorological forcing. Promising experiments include Baltic-Earth (a follow-up to BALTEX) and PannEx (strongly supported by the Croatian NMHS and focusing on the Pannonian plains, see a presentation here).

GASS also known with its previous name of GABLS (a series of experiments with SCM and instrumented towers' data) is the panel looking into the atmospheric processes related to water and energy cycle. Graeme Stephens is very active in animating and organizing the activities around process-understanding research. Noteworthy are the PROES (Process Evaluation Study, see a presentation here) activity and Intense Precipitation research.

GLASS is looking into Land–Atmosphere system and is the panel I knew better as former member and contributor (2010-2015). The research action includes project such as GSWP2 (that inspired EartH2Observe). Noteworthy the GSWP3 updates (finalisation of forcing), and the post-GLACE experiments for which a collaboration with Sonia Seneviratne is under discussion.

GDAP is looking into dataset evaluation and assessment. The well known dataset evaluated as coordinated activities are: the GEWEX Data and Assessments Panel consist of Clouds (ISCCP); Precipitation (GPCP); Aerosols (GACP); Ocean Sensible and Latent Heat Flux (SeaFlux); Land sensible and latent Heat Flux (LandFlux) and Surface as well as TOA radiative fluxes (SRB). In addition, GEWEX is coordinating an assessment of temperature and Water Vapor products to support the above product list (GVAP).

GEWEX is proving very efficient in reaching out to a large amount of the Atmospheric and Climate Sciences community, often reaching a consensus view on priorities of development. It provides scientific inspiration (e.g. see GSQs and WRCP-GCs) and often acts as a label for both Earth system process-understanding (via its coordinated experiments) and for Scientific-data assessment (via expert reviews). Those two streams are strengths of the panel that can provide Science support for (an increasingly) seamless monitoring and prediction of the Earth system linking to the Services under the WMO umbrella and within collaboration of Satellite Agencies and several active Research Institutes.

Xin Li	CAREERI
Annarita Mariotti	NOAA
Jan Polcher	LMD/IPSL/CNRS
Germán Poveda	U. de Colombia
Michael Rast	ESA-ESRIN
Paolo Michele Ruti	WMO
Sonia Seneviratne (chair)	ETH Zurich
B.J. Sohn	Seoul University
Soroosh Sorooshian	UCI
Graeme Stephens (chair)	NASA-JPL
Remko Uijlenhoet	Wageningen U
Jing Yang	Beijing Normal U
Peter van Oevelen (Skype)	GEWEX IGPO

Social events included one dinner party to close the works at the hosting facility in Sanya, and one short visit of Tianya Haijiao (literally "Edges of the Heaven, Corners of the Sea") which is aknowledged as the southern most point of China, a symbolic destination for couples (and now also for surface-atmosphere coupled-processes).

No labels