

**NOTES FROM THE SEVENTH FORMAL GEWEX HYDROCLIMATOLOGY PANEL (GHP)
TELECONFERENCE ON EUROPE-NEESPI-AFRICA REGIONAL HYDROCLIMATE PROJECTS AND
REFERENCE SITE ISSUES HELD ON
18 JANUARY 2011
First DRAFT, 31 March 2011**

1. INTRODUCTION

The 7th Europe-NEESPI-Africa RHP and Reference Sites Teleconference related to the GEWEX Hydroclimatology Panel (former CEOP) took place on Tuesday 18 January at 13:00 UTC.

The issues that were discussed on the subject conference call included:

- (i) CEOP – GHP transitions: Second Co-Chair; New RHP criteria; Development a new RHP in the North America
- (ii) Overview of all site data at CEOP Reference Site Data Archive;
- (iii) RHP/Reference Site data providers/managers reports;

Participants

The participants were:

Jan Polcher	Paris, France; New GHP Co-Chair
Fred Bosveld	The Netherlands, BALTEX Cabauw site representative
Philippe Drobinski	France, HyMeX Representative
Efrat Morin	Israel, HyMeX Israel site Representative
Pasha Groisman	USA, Representing NEESPI RHP
Roberta Toffolon	Italy, Representing HE group and Italian reference sites
Steve Williams	Boulder, Colorado, USA; CEOP Data Management
Sam Benedict	USA; GHP, formerly CEOP International Coordination Function
Petra Koudelova	Japan; GHP, formerly CEOP International Coordination Function

Drs. Dennis Lettenmaier (USA, GHP, formerly CEOP Co-Chair), Toshio Koike (Japan, Former CEOP Co-Chair and Data Integration Chair), Gianni Tartari (Italy, Representing CEOP_HE group and Italian reference sites), Hans-Joerg Isemer (Representing BALTEX RHP), Frank Beyrich (Germany, BALTEX Lindenberg site representative), Elisa Vuillermoz (Italy, Representing CEOP_HE group and Italian reference sites), Charles Wrench (UK, Chilbolton site representative), Esko Kyrö (Finland; FMI representative), Timo Ryyppo (Sodankylä, Finland ; Sodankylä site manager), and Thierry Lebel (Representing AMMA RHP) responded to the announcements but were not available for the call. Nevertheless, Dr. Timo Ryyppo provided a written update on the Sodankylä site in advance.

2. NEXT CONFERENCE CALL

The next, **8th GHP Europe-NEESPI-Africa RHP and Reference Sites Teleconference** is proposed to take place on **Tuesday 17 May 2011, at 13:00 UTC**. **Koudelova/Benedict** have the **action (A1)** to inform the group of the details of the next call nearer to the time of the call and to coordinate the origination of the call (**action A1a**).

3. GHP AND DATA GROUP GENERAL ISSUES

3.1 WCRP and GEWEX related issues

(3.1a) **Benedict** reiterated the main outcomes of the 2nd Pan-GEWEX meeting that was held in Seattle, USA, in August 2010 (<http://www.gewex.org/2010pangewex/home.html>). These included a number of decisions, recommendations and actions specifically associated with former CEOP as well as a set of general (Pan-GEWEX) actions for all the Panels. The main changes that have taken place recently with respect to CEOP included:

1. The SSG accepted Prof Toshio Koike's decision to step down as Co-Chair of CEOP effective at the close of the PGM at Seattle. This action, followed Dr Ron Stewart's resignation, which was taken at the close of the SSG meeting at New Delhi India, 25-29 January 2010,

2. Dr Dennis Lettenmaier was named Co-Chair of CEOP to replace Dr Stewart, effective at the end of the SSG meeting at India (25-29 January 2010),
3. There was a search team being organized to find a Co-Chair to work with Dr Lettenmaier.
4. The SSG agreed to change the name of CEOP to the GEWEX Hydroclimatology Panel (GHP), effective immediately following the end of the PGM.

Also a new set of criteria for GEWEX RHPs was proposed at the meeting that were circulated prior to the last call and all RHPs were asked to review this set.

(3.1b) **Benedict** advised the group that consequently after the PGM, **Dr. Jan Polcher** – Laboratoire de Météorologie Dynamique, Centre National de la Recherche Scientifique (CNRS), Jussieu, Paris, France – had been nominated a new Co-Chair of GHP and had accepted this function. Dr. Polcher attended the call and introduced his interests in activities covered by GHP and stressed out in particular the importance of high quality long-term in-situ observations that are essential for WCRP/GEWEX science. He pointed out that individual sites on which RHPs are built up needed to be maintained and these difficult tasks should be supported by the GEWEX community. **Polcher** also emphasized that both (i) long term records and (ii) intensive, comprehensive short term observation campaigns are necessary and that crucial is rigorous data quality assurance with appropriate site instrumentation documentation. He voiced that establishing of a kind of a list of “good practices” for reference site observation would be desirable and also named the BSRN sites as a good example of such practices.

Polcher further advised the group that the new GHP panel members (see ATTACHMENT 1 below) will meet at the occasion of the EGU meeting in Vienna in April and they will discuss a new organization of the Panel that would be suitable for the new directions identified at the PGM. In addition, he mentioned that the first meeting of the new GHP was proposed be held in September in Europe.

In this context, **Benedict** reiterated that with regards to the changes resulting from the Pan-GEWEX meeting discussions, the data collecting and reporting scheme may need some restructuring, however the urgent need for a high quality data as a basis for scientific activities that are key for the GEWEX Imperatives was confirmed at the Pan GEWEX Meeting and the reference site data activities are supposed to continue in a certain manner. The in-situ data from the CEOP reference sites were acknowledged and studies based on these data were presented at the meeting.

Also a few points from the last call were reiterated that included:

- From the viewpoint of the data providers, the use of their data – the publications based on these data – should be announced and advertized more effectively. It was felt, that the science within GHP (CEOP) based on these data needed to be discussed more in detail at dedicated working sessions.

- Also it was noted that scientific results produced by RHPs were not as much exploited and referred by GEWEX as it could be. The feeling was that most of the effort was put in the data development though the main focus of GEWEX is the science.

(3.1c) After the call, at the beginning of March, **Williams** advised all the CEOP/GHP reference site groups by via email about the development of the situation at NCAR/EOL, where the CEOP reference site archive is hosted. With respect to the transition process from CEOP to GHP and envisioned GHP foci, the NOAA’s Climate Projects Office (CPO), who has funded this CEOP activity since 2001, has directed **EOL to complete these activities by September 2011**. No additional funds have been allocated to EOL beyond October 2011 to provide any support to CEOP/GHP. Accordingly, the NCAR EOL team has decided to process and follow up on all the **reference site data that would be submitted to them by 31 March 2011** and a requested all the CEOP reference site data providers to consider this deadline to complete their submissions as much as possible. The copy of this note and request is attached below (Attachment 2).

(3.1d) **Benedict** further informed the group that a new RHP was being formed in the Northern American continent, involving the USA, Canada, and potentially Mexico. The proposed RHP, **Terrestrial Regional North American Hydro-Climate Experiment (TRACE)** (<http://www.trace-rhp.org/>), envisions an interdisciplinary, international, and interagency effort to make significant contributions to continental and finer scale hydro-climate science and solutions. The TRACE objective is to entrain, integrate, and coordinate the vast array of interdisciplinary observational and prediction resources available to significantly advance skill in predicting and managing changes in North American water resources, as an integral part of the global climate system. The TRACE mission is to measure and predict North American energy and water variations, trends, and extremes through improved observations and prediction, thereby providing the scientific underpinnings of future climate services. The initial discussion workshop will be held on 18 – 20 April 2011, at the Crowne Plaza Hotel in Silver Spring, Maryland, USA.

(3.1e) It was reiterated that a **10-Year Dataset** project had been initiated in response to the climate modeling community need of a **high quality observation data** of a sufficient length for evaluation of climate models under the CMIP5 project and quantification of model projections uncertainties. This activity was proposed by the WCRP Observation and Assimilation Panel (WOAP) and is compliant with the CEOP commitment taken at the 3rd Annual CEOP Meeting in Melbourne in August 2009 to develop the CEOP 10-year dataset as well as with the **GEWEX post 2013 Imperatives** (http://www.gewex.org/2010pangewex/Draft_Imperatives.pdf). The WOAP suggested activity is envisioned as a collaborative effort of a broader observation and climate modeling communities including GEWEX/CEOP, LandFlux-EVAL, GSWP, AsiaFlux, from the observation side. The targeted dataset will consist of **in-situ as well as satellite observations** from multiple providers including GHP (CEOP), FLUXNET, AsiaFlux, iLEAPS.

The 10-Year Dataset project was discussed with the LandFlux-EVAL, FLUXNET, AsiaFlux, and GSWP representatives at the occasion of the HESS2 Meeting in Tokyo in June and subsequently a White Paper was developed and submitted for discussion at the Pan-GEWEX meeting in August. The White Paper is now under consideration by WCRP (WOAP) and GEWEX communities. Further details should be known after the GHP Panel meeting in April.

4. RHP and Reference Site Reports

4.1 Summary status of the reference site archive at NCAR/EOL

(4.1a) **Williams** reported that the BALTEX Lindenberg and Cabauw site datasets were complete through the end of 2009 and the Sodankyla site dataset was complete up to 2008 and the 2009 data were underway. He further voiced that the HyMeX site representatives had sent sample datasets and they had been resolving a few issues that had occurred in the datasets.

Williams acknowledged that the European sites, in particular the BALTEX ones, had the most complete and up to date datasets of all the CEOP (GHP) group. He also added that the other sites, including Asian and American ones, had also been submitting the data but in some cases the data release was delayed due to data quality issues. In addition, the Asian sites are submitting the data through the Tokyo Data Center that assures quality standards prior to sending to the Central Data Archive at NCAR.

4.2 BALTEX: Cabauw by Fred Bosveld

Bosveld reported that the Cabauw datasets through 2009 had been finalized and submitted to the NCAR archive and were available on-line. Also the site documentation has been updated and confirmation of its completeness is anticipated. **Williams** took **action A2** to check the documentation and inform Bosveld of possible issues, if any.

Bosveld also advised the group that efforts had been made to improve data quality at the Cabauw site and that the approach toward observation and data management had been transforming from a research one to an operational approach. Their team has already significantly improved soil moisture observation and now are focusing on flux measurements, which includes the observation instruments as well as calibration methods. In this context, **Bosveld** mentioned that it would be desirable to have discussion among the data providers on how to harmonize the flux observation as well as other in-situ measurements.

Bosveld further voiced that the European Meteorological Society (EMS) Conference was held in September and Steve Williams gave an excellent and well acknowledged talk on the reference site data issues and CEOP and other in-situ observation group (e.g. FLUXNET) activities in this arena.

4.3 BALTEX: Lindenberg by Frank Beyrich – written input

Beyrich reported in writing that the most relevant news from Lindenberg was the submission of the 2009 dataset to the CEOP archive at NCAR in December. An issue of interest was the status of the 10-years data set initiative and **Beyrich** reiterated that from a data providers side it would be better to fix the period 2001-2010, since the Lindenberg data availability was reduced before this time and also the checking of the old data would require much more work than providing recent data.

4.4 BALTEX: Sodankylä by Timo Ryyppo – written input

Ryyppo reported in writing that all the data sets covering years 2005 to 2008 had been sent to NCAR but some of the datasets were still in queue for checking. He also mentioned that they would recheck the uncertain tower data (2002-2004) for the next call.

4.5 HyMeX RHP report by Philippe Drobinski

(4.5a) **Drobinski** reiterated that HyMeX (<http://www.hymex.org/>) had been approved as an official GEWEX/GHP RHP by the GEWEX SSG at the Pan-GEWEX Meeting in Seattle.

(4.5b) **Drobinski** reported that the HyMeX had begun a long term observation period in September 2010 and the data were being collected and processed in proper format, which is a CORDEX format for HyMeX. In addition to the in-situ observations, satellite data are being collected and products are being improved by combining various sources data. Other activities include dynamic and statistical downscaling and comparison of these techniques, and analyses.

(4.5c) **Drobinski** further mentioned that at the HyMeX SSC meeting the data policy was discussed and two types of a “user” was identified: (1) core users, who will have an access to all data including the raw observations of all the HyMeX groups, and (2) other users, who will have an access to the freely available processed data. The database with these processed datasets should be opened in the near future.

(4.5d) Regarding the HyMeX reference sites for GEWEX/GHP, **Drobinski** reiterated that these were three sites in Italy, France, and Israel, respectively and that the site representatives, namely Marco Borga (Italian site), Veronique Ducrocq and Guy Delrieu (both France), and Efrat Morin (Israel) had provided samples to the NCAR team and had been resolving the remaining data quality issues and communicating these with Steve Williams. They will begin to deliver the data in the near future.

In this context, **Morin** reported that the sample of the Israel dataset that had been sent to NCAR earlier had been confirmed by NCAR and thus full datasets of two stations for the 2005 – 2010 period had been submitted and response from the NCAR team was anticipated. **Williams** took the **action A3** to respond in this matter as soon as possible. He pointed out that with these sites, there was an issue of a temporal interval of the datasets that was 3-hourly (climatological data) while the CEOP standard is 30 minutes. Therefore certain adjustments need to be done to the CEOP dataset format to properly accommodate such data.

Drobinski also reiterated that the HyMeX sites have applied to GPM to become ground validation sites, which may bring installation of additional observation facilities.

(4.5e) **Drobinski** also mentioned that it might be good to include the Italian High Elevation sites into the HyMeX analysis and took **action A4** to communicate with Gianni Tartari about possible cooperation.

(4.5f) **Drobinski** further inform the group that the 5th **HyMeX Workshop** would take place in Menorca, Spain on 15 – 19 May 2011.

4.6 AMMA by Jan Polcher

Polcher reported that due to a security issues in Niger, certain experiments of AMMA had to be cancelled there, at the Gourma site. Nevertheless, observation activities in other countries including Benin, Senegal, and Burkina Faso, continue. **Polcher** took **action A5** to communicate with Thierry Lebel about possibility to provide certain datasets to the CEOP archive. He also mentioned that the technicians working on the HyMeX database are the same people who are responsible for the AMMA database and thus once they get familiar with the CEOP formats through the work on HyMeX data, they might also be able to work on the AMMA data.

4.7 NEESPI by Pasha Groisman

(4.7a) **Groisman** reported that NEESPI was preparing annual report on its activities for IGBP and GEWEX. More than 100 papers and 5 books (including two books on environmental change in Siberia and Europe) were published under the NEESPI auspices and several workshops were held in 2010. NEESPI will also held open science sessions at EGU in Vienna.

(4.7b) **Groisman** reiterated that the Fyodorovskoye site documentation had been submitted and posted on-line and assumed that the site managers had already been communicating with the NCAR team about the data submission. Nevertheless, **Williams** noted that there had been no responses to their emails from the site. **Groisman** took **action A6** to assist with establishing this connection again.

Groisman also mentioned other sites with international cooperation that could be potential provider for the

GEWEX/GHP reference site data activities. The Zotino site in Siberia, constructed in cooperation with Germany, has a 300 m high tower and is operational. Another possible candidate would be Krasnoyarsk.

4.8 Others: Italy and African sites of the CEOP-HE group by Roberta Toffolon

(4.8a) **Toffolon** reiterated that their reference Italian site included three observation stations located in Italian mountains (Monte Cino, Monte Cimone, and a glacier station) and was included in the CEOP group of "Others" sites that are not associated with any RHP. The documentation of the stations as well as the data has been sent to the NCAR archive. The 2008 - 2009 data have been sent to the NCAR archive.

In this context, **Williams** noted that before the data would be included in the archive and posted on-line, it needed to be clarified, how the Italian sites would be grouped. It means, whether the HE sites and HyMeX site will be put together – which would be logical from the scientific point of view – or listed separately under appropriate component (HE) or RHP (HyMeX). **Drobinski, Tartari, and Toffolon** will discuss official establishment of collaboration between HE and HyMeX with respect to the Italian sites and then suggestion will be made for grouping the datasets in the NCAR archive.

(4.8b) **Toffolon** also reiterated that they had received a draft of official letter for including their African site to the GHP (CEOP) network. When the procedure is finalized, the data will begin to be sent to the GP (CEOP) archive.

ATTACHMENT 1 List of GHP Panel Members

Last Name	First Name	Affiliation	Country	Gender	Age	Expertise
Berbery	Hugo	Research in the Dept. of Atmospheric and Oceanic Science of the University of Maryland (UMD)	US	Male	?	<ul style="list-style-type: none"> - Diagnostic and modeling studies of regional climate variability focused on the American monsoon systems and the hydrologic cycle - Role of surface conditions on land surface-atmosphere interactions and their relation to the water and energy cycles
Ek	Michael	National Centers for Environmental Prediction/Environmental Modeling Center (NCEP/EMC), NOAA	US	Male	?	<ul style="list-style-type: none"> - Land hydrology, - Boundary-layer physics - Land-atmosphere interaction - Associated modeling and observational data analysis
Harding	Richard	Director of the Biogeochemistry programme at the NERC Centre for Ecology and Hydrology (CEH)	UK	Male	?	<ul style="list-style-type: none"> - Arctic hydrology, including mass and energy balances of snow and ice surface; - Large-scale hydrological modelling; - Global climate modelling; - Land surface/atmosphere interactions (measuring and modeling fluxes of water and CO₂ from land surfaces)
Kanae	Shinjiro	Tokyo Institute of Technology	Japan	Male	39	<ul style="list-style-type: none"> - Global water cycle, - Water resources, - Sustainability, - Flood and drought, - Climate change, - Asian monsoon hydrology
Levizanni	Vincenzo	Director of Research at the Istituto di Scienze dell' Atmosfera e del Clima (ISAC) of CNR	Italy	Male	53	<ul style="list-style-type: none"> - Satellite multispectral studies of cloud top structure; - Cloud physics studies of severe storms using radar and satellite techniques; - Satellite rainfall estimations using combined VIS/IR and MW techniques; - Earth radiation budget definition using satellite and ground-based instruments; - Development of mesoscale analysis techniques including remote sensing data; - Studies of long-distance aerosol transport using satellite instruments

Nunes	Ana	Professor, Dept. of Meteorology, Institute of Geosciences, Federal University of Rio de Janeiro	Brazil	Female	Received PhD in 2002	- Precipitation - Recent projects include: “The SIO Regional Spectral Model Contribution to the North American Regional Climate Change Assessment Program,” “Evaluating the Role of Snow Cover on Seasonal to Inter-annual Predictability of Temperature and Precipitation” (NASA), NASA Energy and Water cycle Studies (NEWS) Project “Global Water and Energy Budgets”
Walker	Jeff	Prof. in the Department of Civil Engineering, Monash University	Australia	Male	Received PhD in 1999	- Environmental sensing; - Earth system modeling; - Optimal convergence of model predictions with observations through data assimilation
Zeng	Xiaodong	International Center for Climate and Environmental Sciences (ICCES), Institute of Atmospheric Physics (IAP), Chinese Academy of Sciences	China	Male	Received PhD in 1998	- Spatial and temporal response of vegetation distribution to global climate change, and the impact of vegetation on global energy, water, and carbon balances

ATTACHMENT 2 Message from Steve Williams, CEOP Data Management Co-Chair and the in-situ archive Chair, on the completion of the CEOP in-situ data activity at NCAR EOL. (March 2011)

All,

NCAR's Earth Observing Laboratory (EOL) has been supporting CEOP in a number of areas including the planning and coordination of CEOP Data Management activities through meetings, teleconferences, and documents. Primary support provided by EOL has been the collection, processing, Quality Assurance (QA), archival, and dissemination of CEOP Reference Site data/metadata, and EOL currently integrates and hosts this long-term archive for the scientific community. NOAA's Climate Projects Office (CPO) has funded this activity since 2001, and with the recent transition from CEOP to GHP, CPO has directed EOL to complete these CEOP activities by September 2011. No additional funds have been allocated to EOL beyond October 2011 to provide any support to CEOP/GHP.

In review of the existing budget and estimating the level of effort to complete these activities, EOL plans to collect available CEOP Reference Site data through March 2011. At that time, EOL will complete the processing and QA of all "in-house" holdings and add these data to the final archive. EOL will continue to maintain the CEOP data management web pages through September 2011 and provide access to the Reference Site data and metadata. During this period, EOL will also continue to work closely with the other CEOP Data Centers (satellite and model output) as well as individual Reference Sites. It is expected that based on the CEOP data policy, processed data (through 2009) will be added from as many contributing Reference Sites as possible. So, it is important that you submit your processed quality assured Reference Site data through 2009 to EOL prior to 31 March 2011 so that these data can be reviewed and included in the final archive.

A lot of effort has gone into the planning, design, and development of the Reference Site database over the past 10 years, and it has provided a high quality resource and long-term legacy to the climate community. The ability to utilize these climatologically diverse Reference Site data (surface, soils, tower, and flux) all in a common format with uniform QA and user friendly interface for data access, has greatly enhanced scientific research as evidenced by data download metrics, publications, and personal correspondence. So, on behalf of CEOP, I thank you very much for all your contributions and participation over the years in these efforts. It is important to recognize the need to continue contribution of data to networks as appropriate, which allow open access for the broader scientific community (such as Fluxnet). Coordination of data within these networks may be undertaken in support of GEWEX Imperatives, through GHP in due course.

It is possible that there may be a few additional teleconferences beyond March to work out any remaining details related to the archive completion. Feel free to contact me should you have any questions.

Regards,
Steve