



Division reports

News brought to you from three EGU divisions

In each edition of GeoQ division presidents contribute reports updating EGU members with news from their divisions. Issue 9 gives voice to Oksana Tarasova (Atmospheric Sciences), Thomas Blunier (Climate: Past, Present & Future) and Chris Juhlin (Energy, Resources and the Environment).



Atmospheric Sciences

The Atmospheric Sciences (AS) Division is one of the largest EGU divisions. It has developed dynamically as reflected in the growing number of AS sessions at the General Assembly and interdisciplinary sessions. There are four subdivisions in AS, which cover a wide spectrum of scientific issues, from meteorological and boundary layer research, to atmospheric chemistry studies.

Improving weather forecasting has always been one of the important directions in meteorological research. There is a growing need in society for very short range weather forecasts (0–12 hours) to minimise the impact of weather hazards and improve risk prevention. Nowcasting has become an important scientific tool for weather-critical operations and the safety of human life and property. The accurate analysis and forecast of weather in both high time and space resolution for the early hours is opening new opportunities for safer and more efficient land and air transport. A special session will be held at the EGU General Assembly 2014 to highlight progress and recent developments in the area of [nowcasting and its applications](#). The nowcasting tools will be further discussed at the follow-up European Nowcasting Conference, which will be held in Vienna, Austria, 29–30 April 2014 in the frame of EUMETNET (European Meteorological Network).

The advances in weather science, which will be presented at a number of exciting meteorological sessions at the forthcoming General Assembly, will be further discussed and brought to the attention of user communities at the first World Weather Open Science Conference (wwosc2014.org). This conference will take place from 16 to 21 August 2014 in Montreal, Canada.

As many areas of atmospheric research are inter-connected, research on weather is echoing at the longer time scales, and many activities now bridge the historic gap between weather and climate research. These research efforts are tightly connected to the studies on atmospheric chemical composition, as knowledge on many of the constituents is needed to improve the skill of weather forecasts and climate projections.

Atmospheric aerosols play an important role in the interaction between atmosphere dynamics and composition. This is reflected

in the number of contributions to the session on [aerosol chemistry and microphysics](#) and several other sessions. The work of Urs Baltensperger, the winner of the AS Division Vilhelm Bjerknes Medal in 2014, also highlights important aspects of aerosol formation and its impacts on weather and climate. Research on aerosols is a broad field covering issues from aerosol formation, transformation, composition and properties to interactions with precipitation and other impacts. The role of aerosols in climate forcing is very diverse and uncertain as reflected both in recent IPCC Assessments and the summer 2013 paper on the role of black carbon in the climate system. Further discussion on the role of aerosols in climate will happen at the AS session [Radiative effects of atmospheric aerosols](#). Another feature of aerosols in the Earth system is the delivery of the nutrients to the ocean. This important connection will be highlighted during the General Assembly session [Atmospheric deposition to the ocean: impacts on marine biogeochemistry and climate](#).

Oksana Tarasova
AS Division President

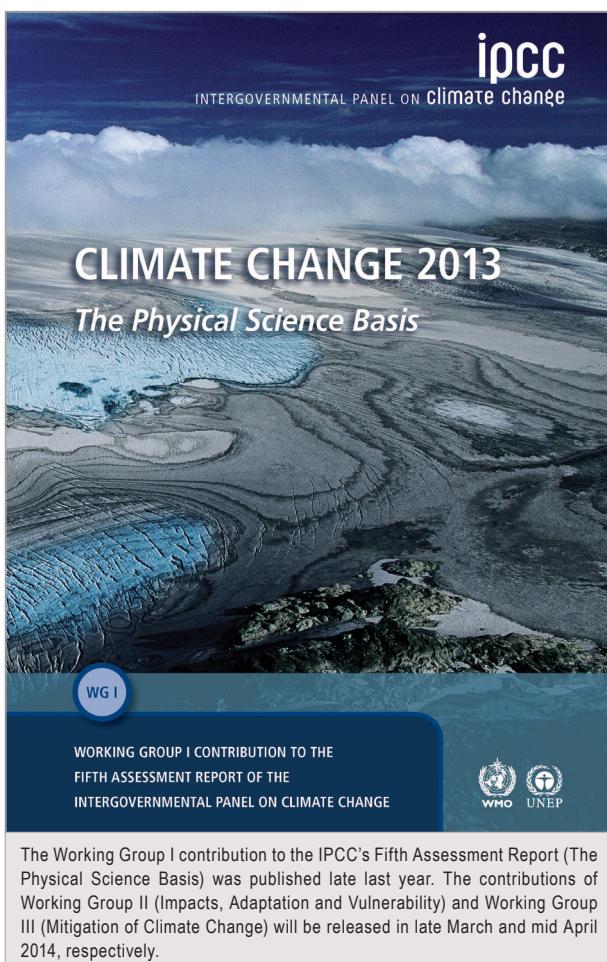


Climate: Past, Present & Future

Shortly before the EGU 2014 General Assembly all three scientific assessments of the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC) will ultimately have been released. Many members of the Climate Division (CL) contributed their science to the [IPCC report](#) and many have also invested time and effort into writing the report, some in key positions as chapter leaders. Overviews of the most relevant findings of all three working groups will be presented at a [Union Symposium](#), an idea initiated by Thomas Stocker (a co-chair of Working Group I).

This year the CL programme features a special IPCC section for sessions related to the work of the IPCC Working Group I. The three sessions cover [observed climate change](#), [understanding climate change](#), and [projecting climate change](#), and each of them will start with two invited IPCC keynote presentations. The rigid structuring of the IPCC process prevents the latest science being included in the IPCC report; therefore, the focus of the final talks in these sessions will be on recent findings relevant in the IPCC framework.

The IPCC is an assemblage of all the excellent science realised by the members of the CL Division, the details of which are presented in our regular session programme covering everything from measurement techniques and observations to projections and climate modelling. CL continues to be one of the strongest divisions at the EGU conference, and co-organises sessions with most other



The Working Group I contribution to the IPCC's Fifth Assessment Report (The Physical Science Basis) was published late last year. The contributions of Working Group II (Impacts, Adaptation and Vulnerability) and Working Group III (Mitigation of Climate Change) will be released in late March and mid April 2014, respectively.

divisions, which reflects the interdisciplinary nature of the Climate Division.

Major national and international programmes chose to have sessions and adjacent programme meetings at EGU. Two of these that I would like to mention are the EU [Past4Future](#) programme and the NERC (UK's Natural Environment Research Council) [iGlass](#) initiative, both aiming to project the future climate by looking at past climate variations.

This year's CL medalists are Sherilyn C. Fritz, for the Hans Oeschger Medal, and Maureen E. Raymo, for the Milan Milankovic Medal. Maureen Raymo is being honoured for her intellectual leadership in palaeoceanography, her impressive landmark publications in Cenozoic climate evolution, chronology, and astronomical climate forcing. Sherilyn Fritz receives the award in recognition of her outstanding contributions in reconstructing and understanding past periods of drought in North America and past hydrological changes in tropical and mid-latitude regions from lake sediments. She is also awarded for her thorough approach in using present-day limnological and landscape processes to interpret past hydrological shifts as well to decipher natural climate impact from human-induced landscape changes.

Our division journal, [Climate of the Past](#), keeps growing with an increase of 34% of published pages in 2013 compared to 2012. In 2013, four new special issues have been initiated on:

- Western Pacific palaeoceanography – an ocean history perspective on climate variability at orbital to centennial scales;
- The changing Arctic and Subarctic environment: proxy- and model-based reconstructions of Holocene climate variability in the northern North Atlantic;
- Integrated analysis of interglacial climate dynamics; and
- International Partnerships in Ice Core Sciences (IPICS): 2012 First Open Science Conference

On the editorial side, Gerald Ganssen, co-founder and former co-editor in chief, stepped down from the editorial board and is now an honorary editor of the journal.

Thomas Blunier
CL Division President

ERE Energy, Resources and the Environment

The Energy, Resources and the Environment (ERE) Division has spent the last few months preparing the skeleton programme for the upcoming EGU General Assembly in Vienna with the aim of keeping the number of contributions at the same level as in recent years. After the abstract closure deadline, it was clear that we were only partly successful in this goal since there was a decrease by about 15% in the number of abstracts to those sessions in which ERE was in the lead. However, there are some research areas that are still quite active within the ERE Division and that had a large number of abstract submissions. These include energy meteorology, geothermal resources and CO₂ storage. There was also a significant number of contributions to ERE3 (Hydrothermal and Mineral Systems – Materials and Elements) sessions.

Whether ERE is satisfied with the number of contributions at the present level, or whether an effort should be made to increase the number, will be discussed at the ERE Division Meeting at the EGU General Assembly. Regardless of the outcome of that discussion, the ERE Division will make an effort to attract young scientists to the Assembly and to encourage more young researchers to organise sessions. ERE will have a new officer join the division at the General Assembly as a young scientist representative. This addition should make it easier to get more young scientists involved in the division and its activities. All scientists, young or old, are encouraged to be active within the ERE and we welcome you in the Division Meeting at the conference to hear your views.

Chris Juhlin
ERE Division President