C2SM Newsletter 2013 June **Vol. 11**

Dear reader,

Enclosed you find the first C2SM newsletter after it has taken a break. We appreciate your interest in the activities of the Center of Climate Systems Modeling. You receive this email because you are part of the C2SM community or registered on the Center's website. Here, we want to share activities, outcome, project initiatives and short notes from the C2SM network. Please send us your contribution any time and take advantage of the large and growing network of climate scientists that are part of C2SM. This will make upcoming issues of this newsletter even more appealing.

Best regards, Nicolas Gruber (chair C2SM), Isabelle Bey (C2SM executive director), This Rutishauser (C2SM communications)

Ocean eddies leave a significant trace in the atmosphere

C2SM researcher Ivy Frenger of the group of Nicolas Gruber and her co-authors systematically analyzed the impact of ocean eddies in the Southern Ocean on the overlaying atmosphere and found they significantly alter near-surface wind, cloud properties and rainfall. Their study was recently published in «Nature Geoscience». Hundreds of these ocean eddies of scales of about 100 kilometers populate the Southern Ocean at any time. These mesoscale ocean features are characterized by positive or negative sea surface temperature anomalies of several tenths of degrees Celsius. Ocean eddies are clearly detectable in satellite observations as elevations and depressions of sea surface height due to their density anomalies. Their temperature anomalies may impact the overlying atmosphere. A systematic analysis of satellite observations provided statistical evidence for an impact of these sea surface temperature anomalies on the atmosphere, i.e. winds, clouds and rainfall.

Frenger et al. (2013), Nature Geoscience, DOI: 10.1038/NGEO1863

See also:

http://www.ethlife.ethz.ch/archive_articles/130708_meereswirbel_fb/index_EN

Projections of extreme precipitations in Europe and the Alpine region

Heavy precipitation events bear the potential for severe societal, environmental and economical impacts. For Europe and the Alpine region, Jan Rajczak of the group of Christoph Schär and colleagues

have assessed projected changes in extreme precipitation events based on an ensemble of 10 regional climate models from the ENSEMBLES project. They find an intensification of heavy events across most of Europe and in all seasons, independent of projected changes in the frequency and mean amount of precipitation. Most considerable changes were found in the Alps in fall. For instance, events with a current-day return period of 50 years across the northern Alps are expected to double in a future climate.
Rajczak et al. (2013), J. Geophys. Res. Atmospheres, doi:10.1002/jgrd.50297

New EU project funded: Emissions, Clouds, and Climate
C2SM member Ulrike Lohmann is coordinating the newly funded EU project "BACCHUS – Impact of Biogenic versus Anthropogenic emissions on Clouds and Climate: towards a Holistic UnderStanding". Researchers will employ the ECHAM6 Earth System Model (ESM) - among other ESMs- to characterize the importance of biogenic versus anthropogenic emissions for cloud formation and climate in a number of key regions. These include tropical rain forests, which are important regulators of climate, and the Arctic, which is among the regions experiencing the most profound climatic changes, and which may be prone to irreversible transitions.
Start of the project: December 2013

Update 2013 of the C2SM leaflet
New members, a new chair and new logos of several partner institutions gave good reasons to update the C2SM leaflet. It is now available as PDF from the website and in print from the office. At the same time, C2SM also designed a new figure to illustrate one core feature of the Center – namely collaborations between our climate research institutions. The figure is available for download from the C2SM webpage.
Download Leaflet 2013: http://www.c2sm.ethz.ch/about/docs
Ask for prints: this.rutishauser@env.ethz.ch
Download network figure:
http://www.c2sm.ethz.ch/about/templates

Successful C2SM Community Day
70 members of the C2SM community from all institutions joined the 1st C2SM Community Day on June 12. Executive director Isabelle Bey and the core team gave an overview over the history, activities and services at the Center. The second part was dedicated to the discussion of future research foci of C2SM led by chair Nicolas Gruber. Follow-up planning is scheduled for the second half of the year.
Program and presentations:
http://www.c2sm.ethz.ch/news/c2sm_community_day_2013

Changing waters
On July 1-2, C2SM hosted the symposium on «The Water Cycle in a Changing Climate». With more than 100 participants and many

outstanding presentations, the symposium featured three contributions to the ETH «Klimablog». Most presentations are now online and can be found in the program.
Link: http://www.c2sm.ethz.ch/Symposium_Water-Cycle

C2SM is playing climate poker at Scientifica
C2SM participates at the science fair "Scientifica" of ETH and University of Zurich about risks. On August 31 and September 1, The Center will play "Klimapoker" with visitors to explain how humans are influencing climate and climate extreme events. Volunteers from the C2SM community are most warmly welcome to join the team. Please register here: http://doodle.com/eusc7587ri59qm8p
Link: http://www.scientifica.ch/ausstellung/natur-und-umwelt/risiko-klima-verspielen-wir-unsere-zukunft/

Reflecting IPCC
On October 3rd, C2SM organizes a public event in the context of the publication of the working group 1 report of IPCC's 5th assessment on the physical basis of the climate system, which will be published at the end of September. The first part of the event includes informal face-to-face meetings with IPCC lead authors and key players in Swiss climate science. The second part features 3 keynote speakers (Prof. Reto Knutti, Ständerat Pankraz Freitag, Prof. Thomas Stocker) and a podium discussion to address among others the issue of the role of the scientists in the climate change debate. Registration: www.c2sm.ethz.ch/klimarunde2013.

Good practices in code development
C2SM organizes a technical training to introduce the importance of good programming practices, such as for example the need to document and version any piece of code including climate codes, pre- and post-processing scripts, plotting scripts, etc. The training provides an overview of some coding standards and presents basic principles of code versioning, debugging and performance analysis. It is addressed to PhD students, post-docs and technical staff within the C2SM Community. No prior experience in programming is required. Please register by sending an email to anne.roches@env.ethz.ch no later than October 10, 2013. The technical training is free of charge. The number of attendees is limited by the space in the room.
Date and location: October 31, 2013, ETH Zurich, CHN building, room P12
Contact: Anne Roches, anne.roches@env.ethz.ch

Seminar of C2SM Special Seminar Series 2013 on "Greenhouse Gas Fluxes and Sinks"
Thursday, July 18, Matt Rigby from University of Bristol is giving a talk in the C2SM Special Series 2013 on "Greenhouse Gas Fluxes and Sinks" about "Understanding non-CO2 greenhouse gas sources and

sinks using long-term atmospheric measurements". The series covers various aspects including an atmospheric perspective on carbon exchange at global to regional scales, the reconstruction of isotope histories of long-lived trace gases and airborne observations to tighten the atmospheric constraint on greenhouse gas fluxes. More speakers will be invited in fall and the series will continue in 2014.
Date and location: ETH Zurich, CHN building, room L17.1
http://www.c2sm.ethz.ch/research/CarboCountCH/C2SM_GHGSeminarSeries_2013.pdf

25 years of GEWEX research
Water cycle research is a core topic of C2SM. The 7th International Scientific Conference on the Global Energy and Water Cycle to be held on 14-17 July 2014 in The Hague, The Netherlands, was announced recently. The Conference will celebrate 25 years of GEWEX research and set the stage for the next phase of research addressing the World Climate Research Programmed (WCRP) Grand Challenges on water resources, extremes and climate sensitivity.
http://gewex.org/2014conf/home.html