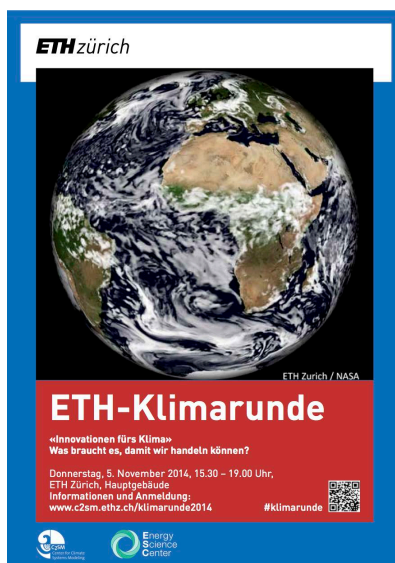


Klimarunde 2014 on “Innovationen fürs Klima”



C2SM and the Energy Science Center (ESC) of ETH Zurich are jointly organizing the second edition of Klimarunde. Following the release of the IPCC synthesis report, this year's topic addresses “innovations for the climate”. On Wednesday November 5, 2014, leading experts will discuss emerging innovations for a transition into a greenhouse gas emission free future of our energy systems. Confirmed speakers and panelists include: Ottmar Edenhofer (PIK Potsdam), Jasmin Staiblin (CEO Alpiq), Walter Steinmann (Director Bundesamt für Energie), Toni Patt (ETH Zurich), Kees Christiaanse (ETH Zurich). For an update of the program and registration see:

<http://www.c2sm.ethz.ch/klimarunde2014>

IPCC reports of WG 2 and WG 3 released

IPCC recently released the reports from Working Group 2 (impacts, adaptation and vulnerability, <http://www.ipcc-wg2.gov/AR5/>) and Working Group 3 (mitigation, www.mitigation2014.org). C2SM members Anthony Patt and Andreas Fischlin contributed to the reports as Lead Author and Review Editors. On May 12, ProClim and the BAFU organize the “Forum IPCC: Fifth Assessment on Impact, Adaptation, Vulnerability and Mitigation (WGII, WGIII)”, to be held at the University of Fribourg. Please register on the SCNAT website until May 5:

<http://events.scnat.ch/proclim?id=18181>

More attention to impacts than adaptation

Whereas the impacts have received a lot of attention in the international press, less is being said about the findings on adaptation strategies. C2SM member Anthony Patt argues in a contribution to the ETH-Zukunftsblog that climate impacts receive much more attention than adaptation despite the fact that both were assessed in the IPCC AR5 of Working Group II, covering climate impacts and adaptation. One message that does stand out, however, is that “(a) first step towards adaptation to future climate change is reducing vulnerability and exposure to present climate variability”.

<https://www.ethz.ch/de/news-und-veranstaltungen/zukunftsblog/archiv/2014/03/a-new-paradigm-for-climate-adaptation.html>

Andreas Fischlin and Roger Schawinski discuss IPCC impact report

IPCC review editor of working group 2, C2SM member Andreas Fischlin, was guest in the radio talk show "Doppelpunkt" hosted by Roger Schawinski on April 6. The interview gives an impression what the most impressions of the general public are.

Listen or download here (start at 27:45):

<http://www.radio1.ch/de/podcasts/podcast-doppelpunkt.html>

<http://www.radio1.ch/download.php?file=http://www.radio1.ch/userdata/podcasts/doppelpunkt/live/radio1-doppelpunkt-20140406-1158.mp3>

Swiss climate change adaptation plan adopted

The Swiss Federal Council adopted its action plan 2014-2019 for climate change adaptation on April 9th. Swiss Climate Scenarios CH2011 by C2SM and collaborators are one corner stone of the plan. It also makes use of recent extensions that are developed within the C2SM-coordinated CH2011+ initiative, such as temperature-based climate indices. Recognizing the large uncertainties still inherent in the prediction of climate change and climate change impacts, the action plan stresses the need for continuous development and updating of the relevant knowledge-base, such as the generation and dissemination of future climate scenarios. The associated activity is led by MeteoSwiss in collaboration with C2SM, several Federal Offices and the Cantons. Complete report:

<http://www.bafu.admin.ch/klimaanpassung/11529/index.html?lang=de>

Early registration for Latsis Symposium

Early registration for the "Latsis Symposium on Atmosphere and Climate Dynamics: From Clouds to Global Circulations" is valid until May 2. The symposium will be held on June 18-21 in Zurich. C2SM member Tapio Schneider is co-organizing the conference, which addresses dynamical processes that shape climate and their interactions across an enormous range of scales: from the micrometer scale of cloud droplet formation to the global scale of atmospheric circulations. Early bird registrations until May 2:

<http://www.latsis2014.org>

High Performance Computing in climate and atmospheric modeling

The deadline for early registrations to the PASC14 conference is on April 30. The conference takes place at ETH on June 2 and 3 and aims at bringing together scientists from diverse scientific domains to foster interdisciplinary collaborations and to strengthen high-performance computing knowledge exchange. As part of this conference, Christoph Schär and Isabelle Bey organize a session on climate and atmospheric modeling.

Early registration fees until April 30:

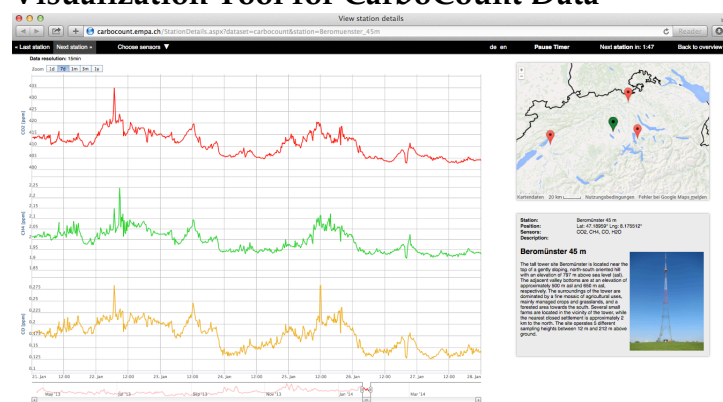
<http://www.pasc14.org/registration/>

New project: Improved climate change projections for Switzerland

MeteoSwiss and IAC ETH started the joint project “ELAPSE” (Enhancing local and regional climate change projections for Switzerland). It aims at further improving downscaling and post-processing techniques beyond the existing CH2011 scenarios. ELAPSE will contribute to application-oriented climate change projections and to the needs of impact modelers. Two post-doc projects are run in parallel. One project investigates scaling relationships of climatic change signals between global and regional models (Elias Zubler, MeteoSwiss). The other project complements the delta change-based local CH2011 product with bias-corrected scenarios (Martin Ivanov, IAC ETH). ELAPSE is related to the COST Action VALUE that provides a framework for validating and improving statistical downscaling methods:

<http://www.value-cost.eu/>

Visualization Tool for CarboCount Data



The project CarboCount recently released a data browser for visualizing concentration measurements of carbon dioxide, carbon monoxide and methane. Measurements at the Swiss sites Gimmiz, Beromünster, Frübüel and Lägern can be displayed from annual to

daily windows. A click on a specific time step of a measurement time series opens a window with the corresponding footprint area of the potential emission sources as calculated by the Lagrangian dispersion model FLEXPART-COSMO.

Find an example and more information here:

http://carbocount.empa.ch/StationDetails.aspx?dataset=carbocount&station=Beromuenster_45m

CH2014-Impacts report for download

The report “CH2014-Impacts: Toward Quantitative Scenarios of Climate Change Impacts in Switzerland” is now available for download. C2SM co-published the report that links the Swiss Climate Change Scenarios CH2011 with quantitative impact models. C2SM provided support regarding the utilization of climate data, and many members substantially contributed their expertise to chapters addressing climate scenarios, climate indices, cryospheric aspects, biodiversity, forest properties and ecosystem services, and agricultural production. Data download will be here:

<http://ch2014.unibe.ch/index.php?lang=en&id=data>

<http://www.ch2014-impacts.ch>

No pause in the increase of hot temperature extremes

The increase of hot extremes over land has continued during the so-called global warming "hiatus". C2SM member Sonia Seneviratne and colleagues from Australia and Canada recently showed in a commentary in *Nature Climate Change* that this tendency is greater for the most extreme events and more relevant for impacts than changes in global mean temperature. It is related to a larger increase in temperature over land compared to trends over the ocean, as well as to a specific warming of extremes over certain continental regions, possibly due to land-atmosphere feedbacks.

Seneviratne et al. (2014), Nature Climate Change, DOI: [10.1038/nclimate2145](https://doi.org/10.1038/nclimate2145)

Autopsy of two mega-heatwaves

Record-breaking heatwaves in 2003 and 2010 surprised both the public and experts. The climate science community has been making a rigorous autopsy and dissecting these two mega-heatwaves. A number of studies presented vertical and horizontal cross-sections of temperature, air pressure and humidity from observations and reanalyses. Erich Fischer commented a new study by Miralles as a "News & Views" article in *Nature Geoscience*. The study found that temperatures during mega-heatwaves are due to combined soil desiccation and atmospheric heat accumulation by examining satellite observations and balloon soundings in the regions of the two heatwaves and using a simple mechanistic column model of the atmosphere and soil moisture that is initialized and constrained by the observational data. It added a crucial puzzle piece by demonstrating that the atmospheric boundary layer — the layer between Earth's surface and the free atmosphere — plays a key role in escalating a heatwave to the point of fever.

Fischer (2014), Nature Geoscience, DOI: [10.1038/ngeo2148](https://doi.org/10.1038/ngeo2148)

Spatially explicit inventory of methane fluxes in Switzerland

Methane is an important greenhouse gas. Rebecca Hiller, C2SM members Nina Buchmann, Dominik Brunner and co-authors recently published the first high-resolution (500 m × 500 m) gridded methane (CH₄) emission inventory for Switzerland. It integrates 90 % of the national emission totals reported to the United Nations Framework Convention on Climate Change (UNFCCC) and recent CH₄ flux studies conducted by research groups across Switzerland. In addition to anthropogenic emissions, natural and semi-natural CH₄ fluxes, i.e., emissions from lakes and reservoirs, wetlands, wild animals as well as uptake by forest soils are included. The new inventory will provide valuable input for regional-scale atmospheric modeling and inverse source estimation.

Data download: <http://doi.pangaea.de/10.1594/PANGAEA.828262>

Hiller R. V. et al. (2014), Biogeosciences, DOI: [10.5194/bg-11-1941-2014](https://doi.org/10.5194/bg-11-1941-2014)

A global perspective on agricultural productivity

Photosynthesis is the process by which plants harvest sunlight to produce sugars from carbon dioxide and water. It is the primary source of energy for all life on Earth. Model-based estimates of gross primary production (GPP, output from photosynthesis) are highly uncertain, in particular over heavily managed agricultural areas. C2SM member Nina Buchmann was part of a

research team lead by Luis Guanter that published a global perspective on agricultural productivity derived from space-based monitoring of sun-induced chlorophyll fluorescence (SIF) from terrestrial plants. The SIF-based crop GPP estimates are 50–75% higher than results from state-of-the-art carbon cycle models over, for example, the US Corn Belt and the Indo-Gangetic Plain.

Guanter et al. (2014), PNAS, DOI: [10.1073/pnas.1320008111](https://doi.org/10.1073/pnas.1320008111)

Seminar series in (eco)hydrology

Visiting scientist Prof. Valeriy Ivanov (Dept. of Civil and Environmental Engineering, the University of Michigan) is visiting the Chair of Hydrology and Water Resources Management of C2SM member Paolo Burlando. Valeriy Ivanov will be giving three seminars ETH Hönggerberg in May.

May 6, 15:45, room HIT K52: *On the non-uniqueness of sediment yield at the catchment scale: the effects of soil antecedent conditions and surface shield.*

May 14, 15:45, room HIL E5: *Preliminary insights on ecohydrology of a seasonal Amazon rainforest and research challenges.*

May 28, 11:00, room HIL E5: *Spatial variability of soil moisture and microscopic root water uptake.*

http://www.ifu.ethz.ch/hydrologie/news/Seminare/index_EN

Pictures and movies for the CHN video wall

A newly constructed video wall now welcomes student and visitors of the CHN building at ETH. C2SM members are invited to contribute pictures and videos. Standing and moving pictures can illustrate specific research projects or simply illuminate the beauty of environmental sciences. Please send you material to Attinger Gabrielle (gabrielle.atinger@usys.ethz.ch)

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