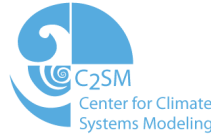




Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich



Materials Science & Technology



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UNIVERSITÄT
BERN

Open PhD and Postdoc positions in atmospheric/climate science on regional-scale greenhouse gas emission measurement and modeling

The project **CarboCount-CH** is a new collaborative project between 6 Swiss institutes at ETH Zurich, the Swiss Federal Laboratories for Materials Science and Technology (Empa) and the University of Bern which aims at quantifying greenhouse gas fluxes and their sensitivity to climate variations in Central Europe and specifically in Switzerland. The project will combine advanced modeling and experimental methods to study exchange fluxes of CO₂ between biosphere and atmosphere and to quantify regional scale emissions of CO₂ and CH₄, the two most important anthropogenic greenhouse gases. Several new observation sites will be setup in Switzerland for the measurement of atmospheric CO₂ and CH₄ concentrations which will provide key input for the modeling and experimental investigations.

The 6 institutes unite a vast expertise in atmospheric, climate and ecosystem science applying both numerical modeling and experimental approaches. CarboCount-CH is also closely associated with the Centre for Climate Systems Modeling (C2SM) which is one the project partners.

CarboCount-CH has openings for three PhD positions (3 years) and one Postdoc position (1.5-2 years). The three PhD positions relate to the following topics:

- (1) Studying CO₂ fluxes and their links with climate on the European scale using the coupled regional climate-landsurface model COSMO-CLM²
(supervisor: Prof. Sonia Seneviratne, ETH; co-supervisor Prof. Nicolas Gruber, ETH)
- (2) (a) Estimation of CO₂ and CH₄ emissions in Switzerland based on the observations and using the newly developed Lagrangian transport model FLEXPART-COSMO. (b) Setup and operation of one the 4 new measurement sites (supported by technical staff).
(supervisor: Dr. Dominik Brunner, Empa; Co-supervisor Prof. Nicolas Gruber, ETH)
- (3) Estimation of CO₂ fluxes in Switzerland based on the observations and using a regional implementation of the well-known CarbonTracker inverse modeling system (supervisor: Prof. Nicolas Gruber, ETH; Co-supervisor Dr. Dominik Brunner, Empa)

and the Postdoc position to:

- (4) (a) Field work: Setup and operation of one of the 4 new sites and support of FLUXNET measurements. (b) Process studies/data analysis: Development of parametric models of biosphere-atmosphere exchange and evaluation of bottom-up data sets. (c) Active role in project co-ordination (Group of Prof. Nina Buchmann, ETH; collaboration with Prof. Markus Leuenberger, University of Bern)

The desired qualifications for the PhD students are: Master degree in atmospheric and/or climate sciences, oceanography, physics, computational sciences or a closely related discipline; experience

with a higher programming language; fluency in English; good communication skills; interest in climate change research.

The Postdoc has a PhD degree in atmospheric/climate or ecosystem science or closely related field. Further desired qualifications are: Demonstrated experience in experimental/field work and scientific publishing, good communication skills, fluency in English, experience in project management.

Applications for the three PhD position have to be submitted online to

For position 1: <http://internet5.refline.ch/845721/1690/++publications++/2/index.html> (ETH-IAC)

For position 2: <http://internet1.refline.ch/673276/0216/++publications++/7/index.html> (EMPA)

For pos. 3: <http://internet5.refline.ch/845721/1684/++publications++/1/index.html> (ETH-UP)

Applications for the Postdoc position have to be sent to Mr. Rolf Oertli (rolf.oertli@pa.ethz.ch), Human Resources, ETH Zurich, TUR C24, 8092 Zürich, mentioning "GL-CarboCount".

Please include a letter of interest/motivation, your CV, transcripts, and the names and contact information of 2-3 references.

Applications received before 31 October 2011 will receive full consideration. Project start will be January 2012 and applicants should be able to start no later than spring 2012.

For further information please contact the following web-links of the 6 project partners:

Group of Dominik Brunner, Empa: http://www.empa.ch/plugin/template/empa/701/*/--/l=1

Group of Sonia Seneviratne, ETH-IAC: <http://www.iac.ethz.ch/groups/seneviratne/research/index>

Group of Nicolas Gruber, ETH-UP: <http://www.up.ethz.ch/research/index>

Group of Nina Buchmann, ETH-IAS: <http://www.gl.ethz.ch/>

Group of Markus Leuenberger, Uni Bern: http://www.climate.unibe.ch/?L1=research&L2=atm_gases

Center for Climate Systems Modeling (C2SM): <http://www.c2sm.ethz.ch/>

Our project web page (under construction) <http://www.c2sm.ethz.ch/research/CarboCountCH>

Or contact one of the supervisors.