

ATMOSPHERE MODELLING SUMMER SCHOOL

We are proud to announce a ten days Summer School on "Atmosphere Modelling".

The course aims to teach every participant to develop his or her own one-dimensional chemistry-transport model including a module for emissions of biogenic VOCs and aerosol dynamics.

Time

10th (noon) to 19th (noon) of June 2013

Location

Lund University, Southern Sweden (www.lu.se)

Ingvar Kamprad Design Centre, Lecture room IKDC: 567 (5th floor)

Address: Sölvegatan 26, Lund. Sweden

For directions and travel instructions, see

http://www.design.lth.se/english/the_department/directions/.

There is Eduroam wireless network available in the course venue, please make sure that you have the required certificate installed (see <http://www.eduroam.org/>, and consult your local administrator if needed).

The accommodation between Sunday 9 June – Wednesday 19 June has been reserved in double rooms at Lund "Patienthotellet", check-in address Entrégatan 5

(http://www.skane.se/upload/Webbplatser/Regionservice/dokument_externt/startsidea/parkering/karta_adresser_lund.pdf; building 10). The address of the actual rooms are at Systervägen 3-15 ("Anhörighetellet"; building 53 in the same map). This is 10 minutes walk from IKDC and 15 minutes to downtown Lund (<http://www.lund.se/en/>).

Programme

On the course, everyone will program an atmospheric boundary layer model with chemistry and aerosol dynamics, including: equations of flow for the atmospheric boundary layer, first order turbulence closure, 1-dimensional column model + numerical solution, emissions of biogenic volatile organic compounds (BVOC) from vegetation, modelling of chemical kinetics by systems of differential equations, and numerical solutions for aerosol formation and growth. The model will be coded in Fortran 95.

Pre-course teaching, exercises and help in setting up a Fortran software on your own laptop

There will be a Fortran online-teaching and pre-exercises to be solved before the course. The lectures and tasks will be send per email to the participants after the selection. If an adequate Fortran software is not available we will advise and help the selected participants in the installation.

Requirements

A basic knowledge of programming in some computer language is required. Students who have never written any program should not consider participating in the course; due to limited time, we will not be able to teach the basics of Fortran and programming. You would also need an own laptop and only in exceptional cases will we provide one for you.

Teachers

Dr Michael Boy is the corresponding teacher. The preliminary list of other teachers includes

- Dr Sampo Smolander (University of Helsinki)
- Luxi Zhou (University of Helsinki)
- Ditte Mogensen (University of Helsinki)
- KV Gopalkrishnan (University of Helsinki)
- Pontus Roldin (Lund University)

Credits

5 ECTS, University of Helsinki (no grades – only Pass or Fail)

Exam and assessment

Students write a scientific report based on the results of their model simulations and send the report and their developed model in code.f90 to Michael Boy and Sampo Smolander

Costs

- free for MSc students of [ABS](#) partner universities
- 700 EUR for all other MSc and PhD students
- 2000 EUR for non-students

The fee includes accommodation in two-person rooms, breakfast, lunch, and light dinner in the early afternoon during the course. There are a limited number of **travel grants available for participants from Nordic and Baltic countries** (Estonia, Finland, Iceland, Latvia, Lithuania, Norway, Sweden).

Other activities

For those interested in sight-seeing, Copenhagen is only 40 minutes away on the Öresund trains. During the evenings there will be the possibility to do different sport activities (volleyball, football, badminton, squash or tennis). So bring your sport equipment if you want to join. A dinner will be arranged for all course participants and teachers in one of the evenings.

Facilities in the selected hotel

There is unfortunately no internet in the rooms of the hotel we have chosen. Internet is of course available at the course venue.

Insurance

The organisers of the course cannot accept liability for personal accident or loss or damage to private property of attending students which may occur either during or arise from the course. Participants are therefore advised to arrange their own appropriate insurance coverage.

Application

Applicants must submit their application before **31st of March 2013** by filling in the form available at

<https://elomake.helsinki.fi/lomakkeet/40155/lomake.html>

Because of the intensive supervision in the development of the models a maximum number of 20 participants will be accepted. If no special reasons occur the available places will be distributed on a first come first serve policy.

More information about the participating networks:

[ACCC](#) (National Doctoral Programme on Atmospheric Composition and Climate Change)

[CBACCI](#) (Biosphere-Carbon-Aerosol-Cloud-Climate Interactions, Nordic graduate school)

[ABS](#) (Nordic Master's Degree Programme in Atmosphere-Biosphere Studies)

[iLEAPS](#) (Integrated Land Ecosystem Atmosphere Processes Study)

[Finnish Centre of Excellence](#) (Physics, Chemistry, Biology and Meteorology of Atmospheric Composition and Climate Change)

[CRAICC](#) (Cryosphere-Atmosphere Interactions in a Changing Arctic Climate)

[DEFROST](#) (Impacts of a changing cryosphere - depicting ecosystem-climate feedbacks as affected by changes in permafrost, snow and ice distribution)

[SVALI](#) (Stability and Variations of Arctic Land Ice)

[ACTRIS](#) (Aerosols, Clouds, and Trace gases Research InfraStructure Network)

[PEGASOS](#) (Pan-European Gas-Aerosol-Climate Interaction Study)

[CLOUD-TRAIN](#) (CLOUD Marie Curie Initial Training Network)

[CED](#) (Centre for Environmental and Climate Research) <http://www.cec.lu.se/>

[ClimBEcoe](#) graduate research school (<http://www.climbeco.lu.se/>)

MERGE Strategic Research Area on climate modelling (Modelling the Regional and Global Earth system)