Summer School 2021
"First Steps in Biosphere-Atmosphere Modelling"

University of Helsinki, Institute for Atmospheric and Earth System Research (INAR) and Lund University are pleased to announce the intensive course "First steps in Biosphere-Atmosphere Modelling" to be held at Lund University, 16th to 27th of August 2021.

Time
16th to 27th of August 2021

Location
Lund University, Southern Sweden (www.lu.se)
Ingvar Kamprad Designcentrum (IKDC)
Address: Sölvegatan 26, 22362 Lund, Sweden
For directions and travel instructions, see
http://www.design.lth.se/english/the_department/directions/

Programming
In this course you will not run any existing model or analyze data from a model but you will get a basic and detailed knowledge on how to write an atmospheric model from scratch. During the course, everyone will program his or her own 1-dimensional atmospheric boundary layer model with equations of flow for the atmospheric boundary layer, chemical kinetics by systems of differential equations, emissions of biogenic volatile organic compounds (BVOCs) from vegetation, deposition of gases and aerosols and numerical solutions for aerosol formation and growth. The model will be coded in Fortran 95.

Requirements

A basic knowledge of programming in some computer language (e.g., Fortran, C++, Python, Matlab) is required. In the course, we will only provide a small amount of Fortran-lectures to teach the basics of Fortran and programming. You will also need to bring your own laptop.

Pre-course activities

There will be a Fortran online-teaching material available and pre-exercises to be solved before the course. The lectures and tasks will be sent per email to the participants after the selection in July 2021. If adequate Fortran software is not available, we will advise and help the selected participants in the installation before the course starts. One selected exercise has to be sent back to the lectures before the start of the summer school as a requirement to ensure that a basic Fortran knowledge is assured and that the compiler and the used plotting programs are sufficient.

Exam and assessment

Students write a scientific report based on the results of their model simulations and send the report and their developed numerical code to Pontus Roldin and Michael Boy.

Credits

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

Teachers

Assist. Prof. Pontus Roldin and Dr Michael Boy are the corresponding teachers. The list of other teachers includes
• Dr Putian Zhou (University of Helsinki, Finland)
• Dr Lukas Pichelstorfer (Salzburg University, Austria)
• Carlton Xavier (University of Helsinki, Finland)
• Petri Clusius (University of Helsinki, Finland)

Social activities

• On the first day we will provide a guided tour of the town and cathedral in Lund.
• For those interested in sightseeing, Copenhagen is only 40 minutes away on the Öresund trains. We will arrange a common tour to Copenhagen on Saturday.
• During certain evenings we will arrange different sport activities (e.g., volleyball, football with barbeque, etc.).
• A dinner will be arranged for all course participants in the last evening.

Costs

The course fee is 2000 EUR. This fee covers

• All academic and social programs during the course

• Access to the course material (printed book)

• Lunch and coffee break on all course days

• Accommodation in two-person rooms

• Breakfast and dinner at the hotel

• A lot of work and fun

Students and post-doctoral researcher from Lund University can apply for a special course fee by contacting Dr Pontus Roldin (pontus.roldin@nuclear.lu.se).

The fee does not cover

Travel expenses to and from Lund, personal health and civil liability insurance, personal expenses such as drinks, telephone, photocopies, etc. during the course.

Insurance

The organizers 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 register to the course before the 31st of May 2021 by filling in the form, which is available below. We welcome applications from participants from all over the world, but we may have to restrict the number of participants due to the Covid-pandemics.

https://elomake.helsinki.fi/lomakkeet/110288/lomakkeet.html

If you have any question concerning the course, please don't hesitate to contact Pontus Roldin (pontus.roldin@nuclear.lu.se) or Michael Boy (michael.boy@helsinki.fi).