INAR Winter School, 27.2.–10.3.2023
Hyytiälä forestry field station, Finland

Advanced analysis of atmosphere-surface interactions and feedbacks (ATMDP-003)

University of Helsinki, Institute for Atmospheric and Earth System Research (INAR), is organizing the intensive course "Advanced analysis of atmosphere-surface interactions and feedbacks" (University of Helsinki course code ATMDP-003; 5 ECTS credits) to be held in Hyytiälä, Finland, on 27.2.–10.3.2023.

The main theme of the course is analysis of SMEAR II long-term datasets of atmospheric and ecosystem measurements. The course is based on working with statistical data analysis in small groups. Students are expected to have at least basic programming skills in some programming language suitable for analysis and visualization of data (e.g. Matlab, Python, R).

During the course students will learn
- utilizing long-term atmospheric, meteorological and eco-physiological measurement data from field stations;
- multidisciplinary approach for analyzing research questions;
- using Matlab/Python/R as analysis tool for complex datasets;
- collaborative and integrated learning;
- project management.

The course includes short lectures on relevant topics, with the main emphasis placed on group work during the course and final report written after the course. The course is aimed at doctoral students (also advanced Master's students can apply for the course) in atmospheric and ecosystem sciences.

Teachers: Prof. Markku Kulmala is the leading teacher of the course. The course lecturers and assistants are from Faculties of Science, and Agriculture and Forestry of University of Helsinki.

Credits and accrediting body: 5 ECTS, University of Helsinki

Exam: After the course, each group of students writes a common scientific report based on the results from analyses done during the course. The reports are graded on the scale of 1 to 5.

The course fee is 1600€. For students of University of Helsinki, this fee is covered by the university. Students from other Finnish and Nordic universities will only pay for accommodation and meals during the course. The course fee covers transportation by bus from Helsinki to Hyytiälä and back to Helsinki, accommodation in two-person rooms, all meals (breakfast, lunch, afternoon coffee, dinner, evening snack) during the course, course material, and all academic and social programme during the course. The course fee does not cover any travel expenses from arriving to Finland from abroad.

Students should bring their own laptop computer with suitable programming language (e.g. Matlab/Python/R) installed on it for the course work.

For questions regarding the course, please contact Tuomo Nieminen (tuomo.nieminen@helsinki.fi).