

WP6- NA6: Integration, outreach, and sustainability
Deliverable D6.25: Comprehensive training course on techniques, outreach and integration to improve running a network-6,
D6.26: IV Tutorial workshop during annual meeting to improve knowledge transfer within ACTRIS

Due to conflicting schedules it was decided to combine the Deliverables D6.25 and D26 and include the content of D6.26 in a frame of D.25 activity.



Hyytiälä Winter school 2015: “Advanced analysis of atmospheric processes and feedbacks and biosphere-atmosphere interactions”

The winter school was organized by University of Helsinki at the Hyytiälä Forestry field station 15–26 March, 2015. It was aimed at PhD students in the fields of atmospheric and biospheric sciences. The participants of the winter school can obtain 5 ECTS credit points for their studies. The work during the winter school was based on analyzing aerosol, trace gas and meteorological measurement data from the Hyytiälä SMEAR II station in small groups of 4–5 students lead by assistants and teachers. The progress of the group works was presented in 3 presentations during the winter school, and a final report was written by each group summarizing the main scientific results and conclusions of their work.

The main topics of the winter school were

1. Feedback-loops related to the interactions between atmosphere and biosphere, especially focusing on the aerosol-cloud-climate interactions. Attempts were made to link the ground-based aerosol number concentration measurements to satellite derived columnar properties.
2. Detailed study of the molecular steps leading to new particle formation in the boreal forest environment, and identifying conditions favoring or inhibiting growth of clusters over 2–4 nm size range and further into cloud condensation nuclei.
3. Effects of the unusually warm winter 2013–2014 on the ecosystem and it's interaction with the atmosphere. Special focus of this topic was the spring recovery period, when the trees are found to frequently emit large quantities of volatile organic compounds that can participate in atmospheric chemistry and lead to new particle formation and growth.

In addition to the group work, the winter school had also lectures related to the scientific topics of the winter school (atmosphere-biosphere interactions, satellite data utilization and atmosphere-biosphere interactions), as well as on career development and philosophy of science.

The leader of the winter school was Prof. Markku Kulmala from University of Helsinki. Lecturers and teachers were mainly from the University of Helsinki,

Prof. Jaana Bäck (University of Helsinki)

Prof. Pepe Hari (University of Helsinki)
Prof. Veli-Matti Kerminen (University of Helsinki)
Prof. Doug Worsnop (University of Helsinki)
Dr. Jon Atherton (University of Helsinki)
Dr. Teemu Hölttä (University of Helsinki)
Dr. Olaf Krüger (Centre for Marine and Atmospheric Sciences (ZMAW), Germany)
Dr. Katrianne Lehtipalo (University of Helsinki)
Dr. Anna Lintunen (University of Helsinki)
Dr. Tuomo Nieminen (University of Helsinki)

The winter school had 19 students from 8 European universities and research institutes:

Mai Allo (University of Helsinki)
Sigurd Christiansen (University of Copenhagen)
Lubna Dada (University of Helsinki)
Konstantinos Doulgeris (Finnish Meteorological Institute)
Luise Jabu Fischer (University of Zürich and University of Helsinki)
Kirsten Fossum (National University of Ireland)
Benjamin Normann Frandsen (University of Copenhagen)
Tom Goren (The Hebrew University of Jerusalem)
Liine Heikkinen (University of Helsinki)
Silja Häme (University of Helsinki)
Lauri Lindfors (University of Helsinki)
Mari Mäki (University of Helsinki)
Androniki Maragkidou (University of Helsinki)
Laura Matkala (University of Helsinki)
Ghislain Motos (Paul Scherrer Institute)
Otso Peräkylä (University of Helsinki)
Sissel Svendsen (University of Copenhagen)
Jesus Vergara Temprado (University of Leeds)
Filippo Xausa (University of Helsinki)

Advanced Analysis of Atmospheric Processes and Feedbacks and Atmosphere-Biosphere Interactions - programme

March 15th to 20th:

| | Sun 15th | Mon 16th | Tue 17th | Wed 18th | Thu 19th | Fri 20th |
|-----------|---------------------------|---|--|--|---|--|
| Morning | | Atmospheric new particle formation (T. Nieminen) Group work | Biosphere – Atmosphere Interactions (J. Bäck, J. Atherton) Group work | Group work | Group work Assistant meeting | Group Work |
| Afternoon | | Introduction to the course (M. Kulmala) Group work | Visit to SMEAR II station Group work | Group work Group presentations #1 | Group work | Introduction to CLOUD experiment (K. Lehtipalo) Group work |
| Evening | Travel to Hyytiälä | Group work Ice-breaker | Group work | Philosophy of science (P. Hari) Sauna | Group work | Group work |

March 21st to 26th:

| | Sat 21st | Sun 22nd | Mon 23rd | Tue 24th | Wed 25th | Thu 26th |
|---------|-------------------|------------------|-------------------|-------------------|-------------------|---------------------------|
| Morning | Group work | Free time | Group work | Group work | Group work | Travel to Helsinki |

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|-----------|---|---|--|--|--|
| Afternoon | Excursion / Other free-time activities | Atmospheric chemistry basics (M. Rissanen) Group work | Group work Group presentations #2 | Group work Role of satellite data for biogeophysical studies (O. Krüger) | Group presentations #3 Manuscript outlines/drafts |
| Evening | Free time | Group work | Career and Writing in Science (M. Kulmala) Sauna | Group work | Course party |