

PANDA European summer school
“Remote sensing of the Atmosphere, Emissions and Modeling”

Institute of Environmental Physics (IUP),
University of Bremen, Bremen, Germany

23-29 August 2015

Sunday, 23rd August:

Arrival of the participants and icebreaker in the evening (drinks and chips at 6 p.m. in Café Unikum)

Monday, 24th August:

08:00-09:00: Registration, Welcome

09:00-10:15: Lecture on Global Change and Problem definition Part I

John Burrows: Global Environmental Change and Climate Change:
an introduction and motivation for remote sensing

10:15-10:30: Coffee break

10:30-11:45: Lecture on Global Change and Problem definition Part II

Min Shao: Exploring the unknowns in air quality studies: VOC
as a case

12:00-13:00: Lunch in Mensa

13:10: Meeting Point (Glass Hall at pendulum)

13:15-14:00: Lab tour I

14:15-15:30: Student's presentations about their work Part I

15:30-15:45: Coffee break

15:45-17:00: Round table discussions (students should prepare the results of
discussions as ppt and present them on the last day)

17:15: Meeting Point (Glass Hall at pendulum)

18:00-20:00: City Tour

Tuesday, 25th August:

- 09:00-10:15: *Andreas Richter:* Lecture on Remote Sensing Part I
- 10:15-10:30: Coffee break
- 10:30-11:45: *Pierre Coheur:* Lecture on Remote Sensing Part II
- 12:00-13:00: Lunch
- 13:30-14:30: Exercises on Remote Sensing
Andreas Richter & Pierre Coheur
- 14:30-15:00: Coffee break
- 15:00-16:00: Student's presentations about their work Part II
- 16:10-18:00: ZARM Drop Tower Excursion Group I & II
- 16:10: Meeting Point (Glass Hall at pendulum) Group I
- 16:55: Meeting Point (Glass Hall at pendulum) Group II
- 18:30-20:00 Small Dinner, Studierhaus NW1
- 20:00-21:30: Evening Lectures
- Paul Monks:* Perspective on international collaboration and atmospheric science
- Tong Zhu:* Air pollution in China: scientific and public policy challenges

Wednesday, 26th August:

- 09:00-10:15: *Claire Granier:* Emissions on a global scale
- 10:15-10:30: Coffee break
- 10:30-11:45: *Qiang Zhang:* Emissions on a regional scale (Asia/China)
- 12:00-13:00: Lunch in Mensa
- 13:10: Meeting Point (Glass Hall at pendulum)
- 13:15: Group picture
- 13:30: Departure for Bremerhaven by bus
- 15:00-18:00: Excursion to Climate House in Bremerhaven
- 19:00: Conference Dinner in Bremen "Haus am Walde"

Thursday, 27th August:

- 09:00-10:30: *Guy Brasseur*: Atmospheric Modeling
- 10:30-11:00: Coffee break
- 11:00-11:45: *Michael Gauss*: Applications of atmospheric chemistry and climate models for science, policy and the general public
- 12:00-13:00: Lunch in Mensa
- 13:30-14:30: Exercises on Modelling (box model with emission & lifetime, matrix for evaluation)
Guy Brasseur & Michael Gauss
- 14:30-15:00: Coffee break
- 15:00-16:30: *Angela Benedetti*: Introduction to Data Assimilation
- 17:00-18:30: Poster Presentations
- Evening Free

Friday, 28th August:

- 09:00-10:45: *Jenny Stavrakou*: Oxygenated VOCs constrained by satellite observations Part 1
- 10:45-11:30: *Bas Mijling*: Fastly reactive gases: inverting for NO_x sources
- 10:30-10:45: Coffee break
- 10:45-11:45: *Jenny Stavrakou*: Oxygenated VOCs constrained by satellite observations Part 2
- 12:00-13:00: Lunch in Mensa
- 13:10: Meeting Point (Glass Hall at pendulum)
- 13:15-14:00: Lab Tour II
- 14:15-15:30: Practical Exercises (CO₂, T, measurements to calculate the error bar, optimized system)
Jenny Stavrakou & Angela Benedetti
- 15:30-16:00: Coffee break

16:00-18:00: Final discussions with presentations of the round table discussions by the students

18:00: Finger Food, Studierhaus NW1

Saturday, 29th August:

Departure