

Program CLOUD-TRAIN Conference

Königstein KTC

14-16 June 2016

Tuesday, 14 June 2016

10:00-13:20 arrival and registration

12:00 Lunch

13:20 Welcome

13:30 Pete McMurry (U Minnesota): Nucleation in chemically reacting systems:
Synthesis of early work and new insights

Session 1: Role of organics for nucleation and growth, HOMs and ELVOCs (part 1)

14:15 Thorsten Hoffmann (U Mainz): Chemistry of secondary organic aerosols

14:45 Thomas Mentel (FZ Jülich): Photochemical Pathway to Highly Oxidized Multifunctional Molecules

15:15 Meinrat Andreae (MPI-C): Evidence for aerosol production in the Amazonian upper troposphere

15:30 *coffee break*

16:00 Joao Almeida (CERN): Ion-induced nucleation of biogenic particles and the AEROCLOUD model

16:20 Martin Heinritzi (U Frankfurt): The condensing properties of oxidized organic molecules at the CLOUD experiment

16:40 Josef Dommen (PSI): The role of organic vapours in initial particle growth in the atmosphere

17:00 Federico Bianchi (PSI/U Helsinki): New particle formation in the free troposphere: a question of chemistry and timing

17:20 Hamish Gordon (CERN): Global modelling of biogenic aerosol formation in the pre-industrial atmosphere

17:40 *coffee break*

Session 2: From aerosols to clouds

18:10 Jian Wang (Brookhaven National Laboratory): Microphysics of Amazonian aerosol under background conditions

18:40 Raymond Shaw (Michigan Tech): Exploring Aerosol-Cloud Interactions in a Turbulent Environment: First Experiments from the Pi Chamber

20:00 Dinner

Wednesday, 15 June

Session 3: Role of organics for nucleation and growth, HOMs and ELVOCs (part 2)

- 8:20 Katrianne Lehtipalo (U Helsinki): CLOUD 10 overview: Hyytiälä runs
- 8:50 Chao Yan and Wei Nie (U Helsinki): NO_x effect on HOM production and its impact on particle formation
- 9:10 Stefanie Richters (TROPOS, Leipzig): Formation of highly oxidized multifunctional organic compounds from the ozonolysis of sesquiterpenes
- 9:40 Mikael Ehn (U Helsinki): Highly oxidized multifunctional compounds from benzene photochemistry
- 10:10 *coffee break*

Session 4: Nano-particle composition and phase

- 10:40 Andrea Wagner (U Frankfurt): Size-resolved chemical analysis of nanoparticles with TD-DMA: Instrument Setup, Characterization and Analysis of Isoprene Oxidation Products
- 11:00 Alex Vogel (CERN): The FIGAERO-CIMS as a tool to understand the chemical composition of growing particles
- 11:20 Yafang Cheng (MPI-C, Mainz): Size dependence of phase transitions in aerosol nanoparticles
- 11:40 Hang Su (MPI-C, Mainz): Scanning supersaturation condensation particle counter applied as a nano-CCN counter for size-resolved analysis of the hygroscopicity and chemical composition of nanoparticles

12:00 Lunch

Session 5: Small cluster thermodynamics and quantum chemistry

- 13:30 Theo Kurtén (U Helsinki): Computational studies of atmospheric autoxidation reactions, and properties of the reaction products
- 14:00 Dave Hanson (Augsburg College, Minneapolis): Free energies of small clusters of dimethylamine and sulfuric acid
- 14:30 *Coffee break*

Session 6: Neutral and charged particles, instrument and method developments for nano-aerosol and gas phase research

- 15:00 Dominik Stolzenburg (U Vienna): Quantitative particle sizing in the cluster-particle transition region with a DMA-Train
- 15:20 Robert Wagner (U Helsinki): Investigating the role of ions in new particle formation in the CLOUD chamber
- 15:40 Sonja Klee (Tofwerk): Development of a soft-X-Ray Primary Ionization Source

Session 7: Isoprene oxidation

- 16:00 Joel Thornton (U Washington, Seattle): Drivers of Efficient Isoprene-derived SOA Formation With or Without Acidity

16:30 Ann-Kathrin Bernhammer (Ionicon and U Innsbruck): Implication of Conversion of Isoprene Hydroxy Hydroperoxides (ISOPOOH) in Metal Smog Chambers on Oxidation Product Distribution

16:50 *Coffee break*

Session 8: From observations to modelling of nucleation, CCN, clouds & climate:

17:20 Jeffrey Pierce (Colorado State University, Fort Collins): Aerosol nucleation and growth in the tropical free troposphere: What are our initial conditions? And why do they matter?

17:50 Kamalika Sengupta (U Leeds): Sensitivity of global cloud condensation nuclei estimates to uncertainties in biogenic organic compounds

19:30 Dinner

Thursday, 16 June

Session 9: New particle formation in urban areas

9:00 Aijun Ding (Nanjing University): Infrastructure development for monitoring and studying air quality in coastal region of East China

9:30 Lin Wang (Fudan University): Preliminary results on measurements of atmospheric nucleation in urban Shanghai

10:00 *coffee break*

Session 10: Cloud liquid phase chemistry

10:30 Chris Hoyle (PSI): Aqueous phase chemistry in aerosols and cloud droplets: Where are we and where are we going?

11:00 Jean-François Doussin (UPEC, Paris): Cloud droplet mediated SOA formation from isoprene photochemistry

11:30 Claudia Fuchs (PSI): SOA production from isoprene ozonolysis at low and high RH

12:00 Lunch

Session 11: Ice formation and ice crystal characterization

14:00 Emma Järvinen (KIT): The near-backscattering depolarisation properties of atmospheric particles

14:20 Leonid Nichman (U Manchester): Optical forensics of aerosol and cloud particles

14:40 Karolina Ignatius (TROPOS): Heterogeneous ice nucleation of viscous alpha-pinene secondary organic aerosol

15:00 Markku Kulmala (U Helsinki): Atmospheric NPF: summary and main open question

15:20 *coffee break*

Panel discussion (panelists to be confirmed)

15:50 Joel Thornton, Jian Wang, Neil Donahue, Ken Carslaw

“Research needs and future directions”

17:00 **End of meeting**

Posters on display during the meeting:

Lubna Dada	Overview of ion concentrations under different conditions
Jenni Kontkanen	A global view on atmospheric concentrations of sub-3 nm particles
Matti Rissanen	Toward atmospheric reality - co-oxidation of two common monoterpenes and its influence on HOM product distribution
Jonathan Duplissy	Binary particle formation of sulfuric acid-water system in neutral and ion-induced case
Katrianne Lehtipalo	The effect of acid–base clustering and ions on the growth of atmospheric nano-particles