

Program CLOUD-ITN Conference
Königstein KTC
22-24 May 2012

Tuesday, 22 May 2012

10:00-13:00 arrival and registration

12:00 Lunch

13:00 Welcome

13:15 Jasper Kirkby, ***CLOUD overview***

Session 1: role of organics for nucleation and early growth

14:00 Renyi Zhang, *Differentiation of the roles of organics between nucleation and growth of nanoparticles (1-20 nm)*

14:30 Neil Donahue, *Oxidation chemistry and very low vapor pressure organics*

15:00 Francesco Riccobono, *Effect of pinanediol oxidation products on nucleation rates*

15:30 *coffee break*

15:50 Siegfried Schobesberger, *Ion clusters in CLOUD: sulfuric acid + ammonia + dimethyl amine + oxidized organics*

16:20 Astrid Kiendler-Scharr, *The contribution of biogenic VOCs to new particle formation: a simulation chamber perspective*

16:50 Gordon McFiggans, *Which organic compounds are allowed to play a role in ultrafine particle growth?*

17:20 Torsten Berndt, *H₂SO₄ nucleation rate enhancement: organic oxidation products vs. amines*

17:50 *coffee break*

Session 2: binary and ternary nucleation, neutral clusters, role of ammonia and amines

18:10 Dave Hanson, *Sulfuric Acid Flow Reactor: Nucleation Results and CFD Analysis*

18:40 Joao Almeida, *Ternary nucleation of dimethylamine/H₂SO₄/H₂O*

19:10 Andreas Kürten, *Neutral sulfuric acid/amine dimers*

19:30 Dinner

Wednesday, 23 May

Session 3: atmospheric ionization, ion clusters, ion-induced nucleation

- 8:30 Ilya Usoskin, *Cosmic ray induced ionization in the atmosphere - full modelling*
- 9:00 Juan F. de la Mora, *Ion-induced nucleation studies via differential mobility analysis and mass spectrometry*
- 9:30 Alessandro Franchin, *Ion-ion recombination coefficient: experimental investigation at atmospherically relevant conditions*
- 10:00 *coffee break*

Session 4: nano-aerosol concentration and size determination, nucleation rates, growth rates

- 10:30 Peter McMurry, *Measurements of clusters and particles in the 1 nm size range*
- 11:00 Katrianne Lehtipalo, *Size-dependent aerosol growth rates in the CLOUD chamber*
- 11:30 Daniela Wimmer, *Performance of sub-3nm particle counters*
- 11:45 Christina Williamson, *An inversion technique for calculating growth rates*

12:00 Lunch

Session 5: cluster thermodynamics, quantum chemistry, microphysical scale modeling of nucleation and early growth

- 13:30 Theo Kurten, *Chemical insights into cluster formation*
- 14:00 Simon Clegg, *A gas/liquid/solid partitioning model for aqueous mixtures of amines, sulphuric acid, and other electrolytes.*
- 14:30 Sebastian Ehrhart, *Simulation of low temperature charged and neutral nucleation in the CLOUD chamber with SAWNUC*
- 15:00 *Coffee break*
- 15:30 Jonathan Duplissy, *Neutral and charged sulfuric acid-water binary nucleation: Experimental data and comparison with improved classical nucleation theory*
- 16:00 Hanna Vehkamäki, *Modelling sulphuric acid-ammonia-dimethylamine clustering using ACDC*
- 16:30 Gerry Wilemski, *Molecular Dynamics simulations of multicomponent aqueous nanodroplets*
- 17:00 *Coffee break*

Session 6: nucleation, ion effects, CCN, clouds & climate: global modeling

- 17:30 Jeffrey Pierce, *What would it take for cosmic-ray fluctuations to have a significant impact on CCN?*
- 18:00 Eimear Dunne, *Global aerosol neutral and charged nucleation based on the CLOUD measurements*
- 18:30 Fangqun Yu, *Ion-mediated nucleation in the atmosphere and implications*

19:30 Dinner

Thursday, 24 May

Session 7: nucleation precursor gases

- 8:30 Martin Breitenlechner, *PTR-MS measurements*
- 9:00 Arnaud Praplan, *Ammonia and dimethylamine measurements with ion chromatography*
- 9:20 Federico Bianchi, *API-TOF analysis of organic clusters in the positive mode*
- 9:40 Linda Rondo, *H₂SO₄ measurements and production of H₂SO₄ and HSO₄ from ionizing radiation*
- 10:00 Thorsten Hoffmann, *Atmospheric Cycling of Iodine and New Particle Formation in the Marine Boundary Layer*

10:30 *coffee break*

Session 8: sun, GCRs, clouds and climate

- 11:00 Jon Egil Kristjansson, *Signals in clouds and radiative fluxes associated with Forbush Decrease events*
- 11:30 Ben Laken, *30 years of continuous global satellite data and a hypothesized solar-cloud link*

12:00-13:30 Lunch

Session 9: aerosols, CCN, clouds and climate

- 13:30 Danny Rosenfeld, *Where on Earth can few added CCN make a big difference in clouds?*
- 14:00 Andreas Petzold, Andreas Minikin, and Markus Hermann, *Observation of nucleation mode particles in the UTLS: From dedicated field studies to routine observations by instrumented in-service aircraft*
- 14:30 Georgios Tsagkogeorgas, *Organic contribution to growth of nucleated particles to CCN*
- 14:50 Yinon Rudich, *Light-activated reactions trigger atmospheric particle growth*
- 15:15 *coffee break*

Panel discussion

- 15:45 U. Baltensperger, K. Carslaw, N. Donahue, P. McMurry, O. Möhler, D. Worsnop, R. Zhang
"Research needs and future directions"

17:00 **End of meeting**