

Thursday 10 July

8:00-10:00

Plenary Oral Session 9: POLLUTION AND CLOUDS

Chairperson: TBD

- |            |     |   |
|------------|-----|---|
| 8:00-8:15  | 9.1 | <b>Invited: Jen-Ping Chen, Shaw-Cheng Liu, Chien-Jung Hsu, Anupam Hazra, Pei-Yun</b><br>Rain Intensity Spectral Shift: An Aerosol Effect?   |
| 8:15-8:30  | 9.2 | <b>Chidong Zhang, Jingfeng Huang, Joseph Prospero</b><br>Observational evidence on climatic effects of aerosol on tropical rainfall   |
| 8:30-8:45  | 9.3 | <b>Darrel Baumgardner, R Subramanian, Greg Kok, Cythia Twohy</b><br>Evidence for Ice Crystal Scavenging of Light Absorbing Carbon (LAC) Particles   |
| 8:45-9:00  | 9.4 | <b>Annica Ekman, Radovan Krejci, Anders Engström, Johan Ström</b><br>Aerosol-cloud interactions in deep convective clouds over the Amazon Basin   |
| 9:00-9:15  | 9.5 | <b>Thomas Choularton, Keith Bower, Martin Gallagher, Sami Romakkaniemi, Jonathan Crosier, Hugh Coe, David Topping</b><br>Influence of urban plumes on microphysics of precipitating stratocumulus |
| 9:15-9:30  | 9.6 | <b>Paul Connolly, Min Zhu, Grant Allen, Peter May, Geraint Vaughan</b><br>A study into the effects of aerosols on intense Hector thunderstorms in 2005/2006                                       |
| 9:30-9:45  | 9.7 | <b>Istvan Geresdi, Roy M. Rasmussen, Kyoko Ikeda, Greg Thompson</b><br>A Case Study Analysis of the Impact of Aerosol Particles on Orographic Snowpack using a Detailed Microphysical Model       |
| 9:45-10:00 | 9.8 | <b>Zev Levin, William R. Cotton</b><br>Summary of the WMO/IUGG assessment on the effects of aerosol pollution on precipitation.   |

10:00-10:30

Coffee Break

10:30-12:15

Plenary Oral Session 9: POLLUTION AND CLOUDS (continued)

Chairperson: TBD

- |             |      |  |
|-------------|------|--|
| 10:30-10:45 | 9.9  | <b>Wanmin Gong, W R. Leaitch, J W. Strapp, Anne Marie Macdonald, Katherine Hayden, Desiree Toom-Sauntry, Kurt Anlauf</b><br>An aerosol-droplet closure study based on recent aircraft measurements   |
| 10:45-11:00 | 9.10 | <b>Carlos A. Morales, Rosmeri P. da Rocha</b><br>Does the pollution affect the development of the thunderstorms over the city of São Paulo, Brazil?  |
| 11:00-11:15 | 9.11 | <b>Jeffrey L. Stith, W. A. Cooper, David C. Rogers, Paul DeMott, Teresa Campos, V Ramanathan, Bhupesh Adhikary</b><br>Interactions of Asian Emissions with Storms in the Pacific Ocean: Early results from the Pacific Dust Experiment (PACDEX). |
| 11:15-11:30 | 9.12 | <b>Delphine Leroy, Wolfram Wobrock, Andrea I. Flossmann</b><br>The role of boundary layer aerosol particles for the development of deep convective clouds: a high-resolution 3D model with detailed (bin) microphysics applied to CRYSTAL-FACE   |
| 11:30-11:45 | 9.13 | <b>Amit Teller, Zev Levin</b><br>On the relative effects of modifying aerosol loadings and thermodynamic conditions to precipitation from mixed-phase convective clouds  |
| 11:45-12:00 | 9.14 | <b>Alexander Khain, Naftali Cohen, Andrei Pokrovsky</b><br>Mysterious small aerosols or why lightning may take place in the eyewall of hurricanes  |
| 12:00-12:15 | 9.15 | <b>Andreas Mühlbauer, Peter Spichtinger, Ulrike Lohmann</b><br>Interaction of microphysical and dynamical timescales in orographic precipitation   |

- P9.1 **Akihiro Hashimoto, Teruyuki Kato, Syugo Hayashi, Masataka Murakami**  
Cloud seeding experiment with three-dimensional cloud resolving model for winter orographic cloud in Japan
- P9.2 **Alexander Khain, Daniel Rosenfeld, Anderi Pokrovsky**  
Is the dependence of warm and ice precipitation on the aerosol concentration monotonic?
- P9.3 **Alexander Khain, Heike Noppel, Klaus Beheng**  
Modification of precipitation location by cloud seeding
- P9.4 **Alexander Khain, Heike Noppel, Klaus Beheng**  
Sensitivity of rain and ice precipitation to aerosols: comparison of spectral and two moment bulk microphysical schemes
- P9.5 **Ana I. Calvo, Francisco J. Olmo, Lucas Alados-Arboledas, Amaya Castro, María Fernández-Raga, Roberto Fraile**  
Winter precipitation chemistry in the background EMEP station in Viznar
- P9.6 **Andrew J. Brik, Steven Neshyba, Thomas Grenfell**  
Investigating Soot in Snow Using Scanning Electron Microscopy
- P9.7 **Anupam Hazra, J. P. Chen**  
Importance of biological aerosols on cloud formation and precipitation: A modeling study
- P9.8 **Beata Kucienska, Fernando García-García**  
Evaluation of the influence of pollution on the initiation and development of warm rain processes in Mexico City
- P9.9 **Beáta Takács, István Geresdi**  
Wash out of the aerosol particles during the precipitation formation in stratocumulus clouds
- P9.10 **Binod Pokharel, Jefferson R. Snider, David Leon**  
Trajectories and Microphysics within Wintertime Orographic Clouds: Implications for the Aerosol Size Distribution at Diameters Smaller than 0.02  $\mu\text{m}$
- P9.11 **Catherine L. Muller, Chris Kidd**  
An assessment of cloud-pollution-precipitation interactions and variations over an urban area using vertically-pointing micro-rain radars, satellite remote sensing and chemical analyses
- P9.12 **Chunsheng Zhao, Qiang Zhang, Zhaoze Deng**  
Study of aerosol and cloud interactions over North Eastern China
- P9.13 **Constantin Andronache, Vaughan Phillips**  
Robustness analysis of atmospheric aerosol removal by precipitation
- P9.14 **Corinna Hoose, Ulrike Lohmann**  
Global Simulations of Aerosol Processing in Clouds
- P9.15 **D. Allen Chu, Chung-Lin Shie, Gao Chen, H.-C. E. Chen, Bruce Anderson**  
Study of Dust Effects on Clouds and Precipitation During NAMMA
- P9.16 **Daniel Rosenfeld**  
Aircraft measurements of the impacts of pollution aerosols on clouds and precipitation over the Sierra Nevada
- P9.17 **Diana Pozo, Graciela B. Raga, Darrel Baumgardner**  
The role of the inflow of anthropogenic aerosols on precipitation in the tropical East Pacific
- P9.18 **Elias M. Zubler, Andreas Mühlbauer, Ulrike Lohmann**  
A statistical evaluation of the aerosol effect on orographic precipitation

- P9.19 **Elisabeth Alonso-Blanco, Miguel González-Colino, Ana I. Calvo, María Fernández-Raga, Amaya Castro, Roberto Fraile**  
Aerosol size distribution in precipitation events in León, Spain
- P9.20 **Gregory Falkovich, Stanislav Derevyanko**  
Modelling evolution of ship tracks and non-uniformly seeded clouds
- P9.21 **Guo Yu, Guoguang Zheng**  
A possible effect of human activities of precipitation change over eastern central China
- P9.22 **Heather Y. Glickman**  
Impacts of aerosols on UHI and hydrological variables
- P9.23 **Iveta Steinberga**  
Preliminary assessment of cloud-aerosol interaction and related microclimatological studies in urban environment
- P9.24 **Jean-Pierre Blanchet, Patrick Grenier, Rodrigo Munoz-Alpizar, Tarek Ayash, Greame Stephens, Jonathan Jiang, Eric Girard**  
On the Role of Acidic Aerosols in the Formation of Thin Ice Clouds over the Arctic during Winter
- P9.25 **Jennifer D. Small, Patrick Y. Chuang, Graham Geingold, Hongli Jiang**  
Does Aerosol Concentration Affect Whether Mixing Occurs Inhomogeneously or Homogeneously in Warm Cumulus?
- P9.26 **Jian Z. Ma, Wei Wang, Yue Chen, Hong J. Liu, Peng Yan**  
Impact of Air Pollution on Aerosols and Cloud Microphysics in North China: A Field Experiment Study
- P9.27 **Jing Duan, Jie T. Mao**  
Research on influence of aerosol on region precipitation in north china
- P9.28 **Jordi Vila-Guerau de Arellano, Kees van den Dries**  
Ozone vertical and diurnal variability influenced by shallow cumulus: large-eddy simulation study
- P9.29 **Jorge A. Martins, Leila Martins, Edmilson Freitas, C Mazzoli da Rocha, Ricardo Hallak, Fabio Luiz Gonçalves, Maria Silva Dias**  
The sensitivity of local and synoptic scale precipitation systems to the cloud condensation nuclei concentration: A numerical modeling evaluation
- P9.30 **Junhua Zhang, Wanmin Gong, Richard W. Leaitch, Anne-Marie Macdonald**  
Impact of meteorological model in predicting cloud microphysics on sulphate production simulated in a Canadian air quality model
- P9.31 **Naftali Cohen, Alexander Khain**  
Effects of aerosols on lightning and intensity of hurricanes
- P9.32 **Niku J. Kivekäs, Veli-Matti Kerminen, Tatu Anttila, Hannele Korhonen, Heikki Lihavainen, Mika Komppula, Markku Kulmala**  
Parameterization of cloud droplet activation using a simplified treatment of the aerosol number size distribution
- P9.33 **Orit Altaratz, Ilan Koren, Tamir Reisin**  
The effects of pollution on condensation and evaporation processes in warm convective clouds of different sizes
- P9.34 **Paul R. Field, Andrew Gettelman**  
Simulated anthropogenic effects on midlatitude cyclones.
- P9.35 **Philipp Reutter, Jörg Trentmann, Martin Simmel, Heini Wernli, Meinrat Andreae, Ulrich Pöschl**  
Numerical simulations of microphysical processes in pyro-convective clouds: activation of aerosol particles as cloud condensation nuclei
- P9.36 **Rachel I. Albrecht, Carlos A. Morales**  
Effects of the biomass burning in the thunderstorm development: An analysis in the Amazon Basin
- P9.37 **Rebekka Posselt, Ulrike Lohmann**  
Influence of Giant CCN on warm rain processes in the ECHAM5 GCM
- P9.38 **Rumjana P. Mitzeva, Boryana D. Tsenova, Angelina D. Todorova, John Latham**  
Comparative modeling study of the impact of aerosols and climate changes on microphysics and dynamics of mixed-phase convective clouds
- P9.39 **Sarah A. Tessendorf, Graham Feingold**

- Aerosol effects on precipitation pathways in populations of simulated deep convective clouds
- P9.40 **Sarah A. Tessendorf, Roelof Bruintjes, Dan Breed, Jim Wilson, Rita Roberts, Ed Brandes, Peter May**  
Preliminary observations of cloud and precipitation characteristics in the Brisbane region
- P9.41 **Tianle Yuan, Zhanqing Li**  
Deep convective cloud properties and Aerosol influences as observed by A-Train Satellites
- P9.42 **Pierre Tulet, Suzanne Crumeyrolle, Kathleen Crahan, Laurent Gomes**  
Mixing of dust aerosols into mesoscale convective system. An examination of the relative importance of downdraft generation and removal scavenging processes observed during the AMMA field campaign
- P9.43 **Verena Grützun, Oswald Knoth, Martin Simmel**  
Influence of aerosol particles on convective clouds simulated by COSMO-SPECS
- P9.44 **Wei-Kuo Tao, Xiaowen Li, Alexander Khain, Toshihisa Matsui, Stephen Lang, Joanne Simpson**  
The role of atmospheric aerosol concentration on deep convective precipitation: Cloud-resolving model simulations
- P9.45 **Rocío García, Maria C. Torres, Hugo Padilla, Raúl Belmont, Armando Báez**  
Measurement of trace metals and inorganic ions in rain from Rancho Viejo a rural wooded area and from southwest site of Mexico City.
- P9.46 **Wen Fang, Guoguang Zheng**  
Aerosol distributions in the atmospheric boundary layer of the Beijing and its effect on cloud
- P9.47 **William Y. Cheng, Gustavo G. Carrio, William R. Cotton**  
Influence of cloud condensation nuclei and giant condensation nuclei on the development of precipitating trade wind cumuli in a large eddy simulation
- P9.48 **Xiaowen Li, Wei-Kuo Tao, Alexander Khain**  
Convection Enhancement by Increasing CCN in the Tropics: A Case Study
- P9.49 **Xueliang Guo, Danhong Fu, Guoguang Zheng, Qiang Zhang, Dianguo Zhang**  
Aerosol-cloud interaction derived from aircraft observations over the urban region of northern China
- P9.50 **Yan Yin**  
A Numerical Study of the Heating Effect of Transported Dust Layers on Cloud and Precipitation
- P9.51 **Yu-Jun Qiu, Sheng-Jie Niu, Xiao-Li Liu**  
Sensitivity of Precipitation Formation to Dust from the Helan Mountain Area in Northwest China
- P952 **Santiago Gassó, Nicholas Meskhidze**  
Observations of the change in cloud microphysical properties of clouds downwind of volcanoes

13:15-14:45

**Poster Session 10: RADIATIVE PROPERTIES OF CLOUDS**

**Chairperson: TBD**

- P10.1 **Anna K. Jagodnicka, Tadeusz Stacewicz, Michal A. Posyniak, Sandra Blindheim, Michael Gaussa**  
Lidar investigation of aerosol particle size distribution in the vicinity of clouds
- P10.2 **Brian A. Tinsley**  
The Role of the Global Electric Circuit in Forcing of Clouds and Climate
- P10.3 **Greg M. McFarquhar, Hailong Wang**  
The impact of varying meteorological conditions on aerosol indirect effects over the Indian Ocean
- P10.4 **Jean-Pierre Chaboureaud, Jean-Pierre Pinty**  
Use of satellite observation for constraining cloud parameterizations
- P10.5 **Jon-Egill Kristjansson, Trude Storelvmo**  
Indirect Effect of Clouds on Surface Radiation

- P10.6 **Josep Calbó Angrill, Jeff M. Sabburg, Jordi Badosa Franch, Josep-Abel González Gutiérrez**  
Cloud effects on UV radiation at two opposing hemispheric sites
- P10.7 **Kazuaki Kawamoto, Tadahiro Hayasaka**  
Potential Radiative Forcing to the surface shortwave irradiance over China
- P10.8 **Kerstin Ebell, Ulrich Loehnert, Susanne Crewell**  
Use of integrated profiling techniques for testing radiative transfer schemes
- P10.9 **Qi Liu, Yunfei Fu, Liang Sun, Yu Wang**  
The difference of radiative signals between precipitating clouds and non-precipitating clouds derived from TRMM PR and VIRS measurements
- P10.10 **Sebastian Schmidt, Peter Pilewski, Graham Feingold, Hongli Jiang**  
The shortwave radiative properties of cloud fields during GoMACCS and TC4
- P10.11 **Sethu Raman**  
Role of cloud radiation interaction in the diurnal variation of precipitation
- P10.12 **Steven Dobbie**  
The impact of aerosols on non-precipitating marine Sc, semi-direct and indirect effects
- P10.13 **Tamir Reisin, Ilan Koren, Orit Altaratz**  
Numerical simulations of hesitant clouds in the twilight zone
- P10.14 **Tatsuya Mitsui, Kentaro Suzuki, Hirohumi Tomita, Akira Noda, Masaki Satoh, Teruyuki Nakajima**  
Radiative Effects of Global Cloud Resolving Model in the framework of 1-Moment bulk scheme combined with Aerosol Transport Model
- P10.15 **Thomas Nauss, Boris Thies, Jörg Bendix, Alexander A. Kokhanovsky**  
An operational 24/7 technique for the delineation of raining from non-raining clouds based on cloud water path retrievals from multispectral satellite data
- P10.16 **Volodymyr Bakhanov, Olexiy Kryvobok, Boris Dorman**  
Radiative properties of mixed frontal clouds. Cloud particle phase determination from multispectral radiometric satellite data
- P10.17 **William D. Hart, Matthew McGill, Dennis Hlavka, Robert Holz**  
Cirrus thermal infrared source function from aircraft and spaceborne measurements

13:15-14:45

Poster Session 11: AIDA

Chairperson: TBD

- P11.1 **Stefan Benz, Ottmar Moehler, Robert Wagner, Helmut Bunz, Martin Schnaiter, Harald Saathoff, Thomas Leisner**  
Freezing of supercooled sulphuric acid particles in the aerosol chamber AIDA
- P11.2 **Ottmar Möhler, Johannes Schneider, Saskia Walter, Andrew J. Heymsfield, Carl Schmitt, Z. Ulanowski, the AIDA Team**  
How coating layers influence the deposition mode ice nucleation on mineral particles
- P11.3 **Richard Cotton**  
Performance testing of a continuous-flow Ice Nucleus Counter at ICIS2007
- P11.4 **Hazel M. Jones**  
Initial results from the Manchester Ice Nucleation Counter taken during ICIS2007
- P11.5 **Admir Targino, Ottmar Möhler, Hugh Coe**  
On the ice nucleation characteristics of bacteria
- P11.6 **Silvia Henning, Markus Ziese, Alexei Kiselev, Frank Stratmann, Stefan Benz, Ottmar Möhler**  
Relationship between hygroscopicity / CCN efficiency and ice nucleation potential of coated and uncoated soot – results from the AIDA campaign IN11

Parallel Sessions: Session 10 Radiative+ Session 11 AIDA

14:45-16:45

Parallel Oral Session 10: RADIATIVE PROPERTIES OF CLOUDS (with Session 11: AIDA)

Chairperson: TBD

- |             |      |  |
|-------------|------|--|
| 14:45-15:00 | 10.1 | <p><b>Invited: Adrian A. Hill, Graham Feingold, Hongli Jiang</b></p> <p>The influence of entrainment on aerosol-cloud feedbacks in marine stratocumulus</p>  |
| 15:00-15:15 | 10.2 | <p><b>Ilan Koren</b></p> <p>On the contribution of hesitant and small clouds to the twilight zone in a sparse cumulus field</p>  |
| 15:15-15:30 | 10.3 | <p><b>Guoyong Wen, Alexander Marshak, Robert F. Cahalan, James A. Coakley, Lorraine Remer, Norman G. Loeb</b></p> <p>Enhancement of Clear Region Reflectance in the Vicinity of Boundary Layer Cumulus: Physical Mechanisms and a Simple Model for Corrections</p> |
| 15:30-15:45 | 10.4 | <p><b>Frederick Chosson, Jean-Louis Brenguier, Lothar Schuller</b></p> <p>Heterogeneous cloud fields and cloud parameters retrieval: radiative impact of entrainment-mixing processes.</p>   |
| 15:45-16:00 | 10.5 | <p><b>Paquita Zuidema, Huiwen Xue, Graham Feingold</b></p> <p>Shortwave radiative impacts from aerosol effects on marine shallow cumuli</p>  |
| 16:00-16:15 | 10.6 | <p><b>Gerald G. Mace</b></p> <p>A description of tropical upper tropospheric cloud systems derived from the synergy between coordinated remote sensing and in situ data</p>  |
| 16:15-16:30 | 10.7 | <p><b>Gregory C. Roberts, Muvva V. Ramana, Craig Corrigan, Dohyeong Kim, Veerabhadran Ramanathan</b></p> <p>Simultaneous measurements of cloud microphysical and radiative properties using unmanned aerial vehicles to observe aerosol-cloud interactions</p>     |
| 16:30-16:45 | 10.8 | <p><b>Mikhail Ovtchinnikov, Larry Berg, Evgenii Kassianov</b></p> <p>Dynamical, microphysical, and radiative interactions between aerosols and cumulus clouds</p>  |

14:30-16:30

Parallel Oral Session 11: AIDA (with Session 10: RADIATIVE PROPERTIES OF CLOUDS)

Chairperson: Thomas Leisner

- |             |      |   |
|-------------|------|---|
| 14:30-14:45 | 11.1 | <p><b>Invited: Ottmar Möhler, Paul J. DeMott, Olaf Stetzer</b></p> <p>The fourth international ice nucleation workshop ICIS-2007: Methods and instruments</p>   |
| 14:45-15:00 | 11.2 | <p><b>Luceoend Felix, Stetzer Olaf, Lohmann Ulrike</b></p> <p>Experimental Study on Immersion Freezing under Mixed-Phase Cloud Conditions</p>   |
| 15:00-15:15 | 11.3 | <p><b>Ulrich Bundke, Björn Nillius, Ruprecht Jaenicke, Holger Klein, Thomas Wetter, Heinz Bingemer</b></p> <p>Intercomparison between in situ Ice Nucleus measurements and measurements by the filter method.</p> |
| 15:15-15:30 | 11.4 | <p><b>Ian Crawford, Paul Connolly, Dantong Liu, Ottmar Möhler, Martin Gallagher</b></p> <p>Investigations into the ice nucleating ability of propane flame soot</p>   |
| 15:30-15:45 | 11.5 | <p><b>Thomas Leisner, Daniel Rzesanke, Maren Brinkmann</b></p> <p>Heterogeneous immersion freezing efficiencies of ice on mineral dust and biogenic particles</p>   |
| 15:45-16:00 | 11.6 | <p><b>Martin Gallagher, Paul J. Connolly, Ottmar Mochler</b></p> <p>Freezing of cloud by mineral particles in the AIDA chamber</p>  |
| 16:00-16:15 | 11.7 | <p><b>Paul J. DeMott, Ottmar Mochler, Olaf Stetzer</b></p> <p>The Fourth International Ice Nucleation Workshop (ICIS-2007): Objectives and Results</p>  |
| 16:15-16:30 | 11.8 | <p><b>Admir Targino, Ottmar Möhler, Hugh Coe</b></p> <p>Characterisation of ice nucleation ability of mineral dust in the AIDA chamber</p>  |

**END OF SESSIONS**