

Poster Presentations

3rd International Workshop on Mineral Dust
September 15-17, Leipzig, Germany

| Authors | Poster title | Theme-# |
|---|--|---------|
| Session 1: Measurements and modeling of dust emission and deposition | | |
| <u>C. Bouet</u> , G. Cautenet, B. Marticorena, G. Bergametti, and J.L. Rajot | Modeling the impact of a tropical mesoscale convective system on surface wind field for application to aeolian dust assessments | 1-1 |
| <u>S. Engelstaedter</u> and N. Mahowald | Assessing the importance of specific surface characteristics associated with desert environments for global dust production | 1-2 |
| <u>R. Funk</u> , L. Völker, W. Engel and H. I. Reuter | Calculation of dust emissions from agriculturally used soils in NE-Germany | 1-3 |
| <u>D. Goossens</u> , B. Buck, B. McLaurin | Natural and anthropogenic emission of soil dust in Nellis Dunes Recreational Area, Clark County, Nevada | 1-4 |
| <u>C. Hoffmann</u> and R. Funk | Separation and quantification of dust transported by local wind erosion from supra-regional dust storms | 1-5 |
| <u>M. Ishizuka</u> , M. Mikami, J. Leys, Y. Yamada and Y. Shao | Saltation and dust emission under wet soil and dry weak crust after small precipitation at a fallow-wheat field in Australia | 1-6 |
| <u>E. Jung</u> and S.C. Yoon | An assessment of uncertainties in dust modeling due to vegetation | 1-7 |
| C. Deutscher and <u>P. Knippertz</u> | A Climatology of Evaporation-Driven Density Currents in the Southern Foothills of the High Atlas in Southern Morocco | 1-8 |
| <u>P. Knippertz</u> , A. Ansmann, D. Althausen, D. Müller, M. Tesche, E., Bierwirth, T. Dinter, T. Müller, W. von Hoyningen-Huene, K. Schepanski, M. Wendisch, B. Heinold, K. Kandler, A. Petzold, L. Schütz and I. Tegen | Dust Mobilization and Transport in the Northern Sahara during SAMUM 2006 | 1-9 |
| <u>Y. Kurosaki</u> , M. Mikami, M. Shinoda, I N. Sokolik | Statistically estimated threshold wind speed from surface synoptic data in East Asia | 1-10 |
| <u>B. Laurent</u> , I. Tegen, B. Heinold and K. Schepanski | Regional investigations on Saharan dust events using the LM-MUSACT-DES model | 1-11 |
| <u>B. Marticorena</u> , B. Chatenet and J. L. Rajot | Temporal variability of mineral dust content over West Africa: Analyses of a 2 years monitoring from the AMMA Sahelian Dust Transect | 1-12 |
| <u>E. Nowottnick</u> , P. Colarco, A. da Silva, G. Chen, R. Ferrare, E. Browell, S. Ismail, B. Anderson | Comparisons of dust emission schemes in GEOS-5 simulations of the 2006 NAMMA experiment | 1-13 |
| <u>A. O'Donoghue</u> , T. Zobeck, A. Chappell and C. Collier | Variation in dust emission according to mineralogy | 1-14 |
| <u>H.I.Reuter</u> , L.Montanarella | Wind erosion events in Europe – how can Digital Soil Mapping help us understand uncertainties? | 1-15 |
| <u>N. Seino</u> , A. Yamamoto, and M. Chiba | Regional simulation of dust storm in the Taklimakan Desert | 1-16 |
| <u>S. Xiao</u> , F.H. Chen, M.R. Qiang | Grain Size Evidence for the Origin of Aeolian Dust Recorded in Surface Sediments from Sugan Lake on Tibetan Plateau, China | 1-17 |

| Authors | Poster title | Theme-# |
|---|---|----------------|
| <u>J. M. Prospero</u> | Iceland Dust Storms: The Importance of Glacial Outwash Terrains as High Latitude Dust Sources | 1-18 |
| Session 2: Chemical and physical properties of dust aerosol | | |
| V.G. Arshinova, <u>B.D. Belan</u> , T.M. Rasskazchikova, D.V. Simonenkov, and G.N. Tolmachev | The influence of a big enough city on the chemical and disperse composition of atmospheric aerosols | 2-1 |
| <u>B.D. Belan</u> , D.V. Simonenkov, and G.N. Tolmachev | Elemental and ionic composition of an atmospheric aerosol over different regions of Eurasia | 2-2 |
| <u>B.D. Belan</u> , D.V. Simonenkov, G.N. Tolmachev | Some regularities in the distribution of chemical components of aerosol matter over southern part of the West Siberia | 2-3 |
| <u>P. Formenti</u> , J. L. Rajot, B. Marticorena, K. Desboeufs, A. Zakou, E. Journet, N. Grand, N. Mouget, S. Chevaillier, S. Caquineau, A. Gaudichet, B. Chatenet, S. Alfaro, G. Bergametti, M. Maille, M. Sow, B. Laurent, S. Triquet, J. M. Velay, K. Hungershoefer, C. Chou, P. Ausset, G. Di Donfrancesco, F. Cairo, F. Fierli, B. Heese, D. Tanné, S. Osborne, J. Haywood | Properties of aerosol in the west African dry and wet seasons: results from the ground-based and airborne measurements from the AMMA campaigns | 2-4 |
| <u>Y. S. Ghim</u> and I.-S. Park | Variations in Heavy Metals During the Asian Dust Periods in Korea | 2-5 |
| <u>D. Jugder</u> , M. Nishikawa, I. Matsui and N. Sugimoto | PM10 concentrations in the Gobi of Mongolia | 2-6 |
| <u>N. Kaaden</u> , A. Massling, T. Müller, A. Schladitz, K. Kandler, and A. Wiedensohler | Hygroscopic properties and particle number size distribution of desert dust during SAMUM 2006 | 2-7 |
| <u>K. Kandler</u> , L. Schütz, M. Ebert, C. Deutscher, H. Hofmann, S. Jäckel, R. Jaenicke, K. Lieke, and S. Weinbruch | Mass concentration and mineralogical composition of the boundary layer aerosol at Tinfou, Morocco and at Praia, Island of Santiago, Cape Verde | 2-8 |
| <u>K. Kandler</u> , L. Schütz, C. Deutscher, P. Knippertz, K. Lieke, B. Weinzierl, S. Zorn, M. Eber, R. Jaenicke, A. Petzold, and S. Weinbruch | Single particle chemical and mineralogical composition and derived optical parameters of the aerosol at and over Tinfou, Morocco, during SAMUM 2006 | 2-9 |
| L. Schütz, <u>K. Kandler</u> , C. Deutscher, K. Lieke, A. Maßling, A. Nowak, A. Schladitz, M. Ebert, K. Lieke, S. Weinbruch, P. Knippertz, and R. Jaenicke | Boundary layer aerosol size distributions during SAMUM I-II | 2-10 |

| Authors | Poster title | Theme-# |
|---|--|----------------|
| F. Zimmermann, M. Ebert, E. Ganor, S. Weinbruch and <u>L. Schütz</u> | IN ability investigations of atmospheric aerosol samples | 2-11 |
| <u>S. Lafon</u> , I. N. Sokolik, P. Formenti, S. Chevaillier, J. L. Rajot and S. Alfaro | Size-resolved elemental composition and iron-oxide content of mineral dust originating from Asia and Africa | 2-12 |
| K. Lieke, K. Kandler, L. Schütz, C. Deutscher, M. Ebert, D. Müller-Ebert, A. Petzold, K. Rasp, B. Weinzierl, S. Weinbruch | Chemical Composition of Saharan Mineral Dust, Biomass Burning and Dakar Urban Aerosol during the Saharan Mineral Dust Experiment II in January and February 2008 | 2-13 |
| H. Ogata, W. Fujie, M. Yamada and <u>D. Zhang</u> | Iron in Asian dust particles from two cases in Southwestern Japan | 2-14 |
| <u>N. Pérez</u> , R. Bhatia, M. Hanvey, B. Spiro, X. Querol, A. Alastuey | Ship-based measurements of mineral dust in PM10 from Oceanic II- The Scholar Ship along the West coast of Africa and the Mediterranean Sea | 2-15 |
| X. Querol, A. Alastuey, J. Pey, <u>N. Pérez</u> , M. Escudero, T. Moreno, S. Alonso, E. Cuevas, J. de la Rosa | African dust influence on ambient PM levels in Iberia: A quantitative approach to support implementation of Air Quality Directives | 2-16 |
| <u>M. Radhi</u> , M. A. Box, G. P. Box | Physical, Chemical and Optical Properties of Australian Desert Dust: a multiple analysis from several sites | 2-17 |
| <u>A. Schladitz</u> , T. Müller, A. Massling, N. Kaaden and A. Wiedensohler | Measurements of optical properties of dust particles during the SAharan Mineral dUst experiMent SAMUM 2006 | 2-18 |
| F. Solmon, <u>P. Chuang</u> , N. Meskhidze, and Y. Chen | Anthropogenic processing of iron in mineral dust over the north Pacific Ocean | 2-19 |
| <u>J.-B.W. Stuut</u> , I. Meyer, G. Lavik, E. Schefuß, M. Zabel | Seasonal variability of present-day aeolian dust collected off NW Africa | 2-20 |
| <u>F. Wagner</u> , S. Pereira, A. M. Silva | Effect of trajectories on the Properties of Desert Dust over Portugal | 2-21 |
| <u>A. Wegner</u> , H. Fischer, U. Ruth | Seasonal changes in dust size distributions in the EPICA-DML ice core in different climatic stages and implications for the dust transport | 2-22 |
| <u>Z. Wu</u> , Y. Cheng, M. Hu, B. Wehner, A. Wiedensohler | Number size distributions of dust particles and their influences on visibility during dust storm events in Beijing, China | 2-23 |
| <u>Z. Shi</u> , M. Krom, L. Benning, S. Bonneville, A. Bake, T. Jickells | Change in speciation of iron in mineral dust during simulated atmospheric processing | 2-24 |
| <u>S. Lehmann</u> , Yoshi Iinuma, Thomas Gnauk, Konrad Müller, Hartmut Herrmann | Chemical characterization of Saharan dust and marine particles on São Vicente, Cabo Verde Islands | 2-25 |
| Session 3: Dust Optical properties, remote sensing and radiative effects of dust aerosol | | |
| <u>S. Basart</u> , C. Pérez, E. Cuevas and J.M. Baldasano | Aerosol retrospective analysis for North of Africa, Northeastern Atlantic, Mediterranean and Middle East from AERONET sites | 3-1 |
| S. Bauer, E. Bierwirth, S. Eiermann, M. Wendisch | Impact of Saharan dust layers and biomass burning smoke on atmospheric radiation budget - First Results of SAMUM 2 | 3-2 |
| <u>E. Bierwirth</u> , A. Ehrlich, M. Wendisch, S. Otto, T. Trautmann | Surface Albedo in Morocco and its Impact on Radiative Forcing | 3-3 |

| Authors | Poster title | Theme-# |
|---|--|----------------|
| <u>M. Collaud Coen</u> , E. Weingartner, G. Wehrle, and U. Baltensperger | Detection and Climatology of Saharan dust events at the high-alpine site Jungfrauoch | 3-4 |
| Y. Derimian, J.-F. Léon, O. Dubovik, <u>I. Chiapello</u> , D. Tanré, A. Sinyuk, F. Auriol, T. Podvin, G. Brogniez, and B. N. Holben | Optical properties and radiative effect of aerosol mixture and dust observed over M'Bour (Senegal) during the AMMA 2006 dry season | 3-5 |
| <u>J. Gasteiger</u> , M. Wiegner, T. Schadow and C. Toledano | Numerical simulations of optical properties of dust particles and their validation in the frame of the SAMUM campaigns | 3-6 |
| <u>S. Gross</u> , V. Freudenthaler, M. Esselborn, M. Tesche, M. Wiegner | Wavelength dependence of the linear particle depolarization ratio of Saharan Dust at 355 nm, 532 nm, 710 nm and 1064 nm from lidar measurements during SAMUM 2 | 3-7 |
| <u>L. Klüser</u> , K. Schepanski, T. Holzer-Popp, A. Hartmann | Remote Sensing of Mineral Dust with MSG Infrared Channels | 3-8 |
| <u>C. Köhler</u> | Fourier Transform Infrared Spectrometer Measurements during SAMUM | 3-9 |
| <u>R. M. Mitchell</u> , Y. Q. and S. K. Campbell | Characterization and Time Variation of Australian Dust Aerosol | 3-10 |
| <u>T. Müller</u> , A. Schladitz, and A. Wiedensohler | Spectral imaginary part of refractive index of Saharan mineral dust. Observations during the Saharan Mineral Dust Experiment (SAMUM 1) | 3-11 |
| <u>T. Nishizawa</u> , N. Sugimoto, I. Matsui, and A. Shimizu | Aerosol retrieval algorithm considering dust nonsphericity using two-wavelength backscatter and one-wavelength polarization lidar measurements | 3-12 |
| <u>T. Nousiainen</u> , E. Zubko, J. Niemi, K. Kupiainen, M. Lehtinen, K. Muinonen, and G. Videen | Optical modeling of calcite dust particles | 3-13 |
| <u>S. Otto</u> | Solar optical properties of Saharan mineral dust | 3-14 |
| <u>M. Tesche</u> , D. Althausen, D. Müller, and A. Ansmann | Lidar Observations of Pure and Aged Saharan Dust During the Saharan Mineral Dust Experiments 1 and 2 | 3-15 |
| <u>A. Torge</u> , A. Macke, I. Tegen | Monte Carlo radiative transfer simulations of reflected solar radiances from Sahara dust plumes as observed from SEVIRI | 3-16 |
| <u>Z. Ulanowski</u> , O.V. Kalashnikova, P.W. Lucas and B. Bercot | Scattering Properties of Aligned Atmospheric Mineral Dust | 3-17 |
| <u>S. Vingataramin</u> , M. Legrand, B. Damiri, R.H. Petit, J. Molinié, S. Jacoby-Koaly, T. Feuillard, F. Brut, A. Fouéré, K. Desboeufs, E. Journet | Ground-based remote sensing in TIR of transported dust in the Lesser Antilles | 3-18 |
| <u>W. von Hoyningen-Huene</u> , T. Dinter, A. A. Kokhanovsky, G. Rohen, J. P. Burrows | Experimental determination of optical properties of desert dust at Porte au Sahara during SAMUM | 3-19 |
| <u>B. Weinzierl</u> , A. Petzold, M. Esselborn, K. Rasp, A. Minikin, A. Dörnbrack, M. Wirth, P. Mahnke and M. Fiebig | Saharan Mineral Dust Experiment 2008: Airborne observations of dust and biomass burning layers over Cape Verde | 3-20 |

| Authors | Poster title | Theme-# |
|--|--|----------------|
| <u>C. Linke</u> , M. Vragel, M. Schnaiter and T. Leisner | Influence of Soot Additon on the Optical Properties of Mineral Dust Aerosols - Laboratory Study | 3-21 |
| <u>M. Vragel</u> , C. Linke, M. Schnaiter, G. Beuchle, C. Verhaege and T. Leisner | Optical Properties of Synthetic Hematite and Quartz Particles: A Laboratory Study | 3-22 |
| F. J. Olmo, V. Lara, H. Lyamani, J.L. Guerrero-Rascado and <u>L. Alados-Arboledas</u> | Saharan dust radiative properties assessed by inversion of sky radiances measured in the principal plane at Granada, Spain | 3-23 |
| Session 5: Integration of models and remote sensing observations for 3D characterization of spatiotemporal distribution of dust | | |
| <u>L. Alados-Arboledas</u> , J.L. Guerrero-Rascado, H. Lyamani, D. Pérez-Ramírez, F. Navas-Guzman and F. J. Olmo | Multi-instrumental approach for the monitoring of Saharan outbreaks | 5-1 |
| <u>S. Alonso-Pérez</u> , E. Cuevas, C. Pérez, X. Querol, J.M. Baldasano | Positive trend of African air mass intrusions over the Subtropical Eastern North Atlantic Ocean in winter driven by the Azores high shift | 5-2 |
| <u>J. Banks</u> | A 3D Regional Saharan Dust Transport Model and Comparisons with Satellite Observations | 5-3 |
| <u>L. A. Barrie</u> and S. Nickovic | The WMO Sand and Dust Storm Warning and Assessment System (SDS-WAS): A Global Consortium Helping Society Reduce Risk Through Research, Assessments and Forecasts | 5-4 |
| <u>V. Bellantone</u> , F. De Tomasi, M. R. Perrone | Saharan dust events monitored by Raman lidar measurements | 5-5 |
| <u>Y. Ben-Ami</u> and I. Koren | Patterns of Saharan dust transport over the Atlantic calculated from CALIPSO backscatter measurements | 5-6 |
| <u>A. Darmenoy</u> , I. N. Sokolik, K. Darmenova, H.-J. Choi | Characterization of 3D spatiotemporal distribution of Asian dust by merging observations and predictions from the regional dust modeling system WRF-DuMo | 5-7 |
| <u>T. Dinter</u> , W. von Hoyningen-Huene, A.A.Kokhanovsky, G. Rohen, J.P. Burrows | Improvements of satellite AOT retrieval using closure experiments like SAMUM campaign | 5-8 |
| <u>D. Garbuzov</u> , P. Ginoux, C. Hsu, S. Lin, and E. Shevliakova | Global dust source inventory using MODIS Deep Blue products | 5-9 |
| <u>Y. Hara</u> , I. Uno, K. Yumimoto, M. Tanaka, A. Shimizu and N. Sugimoto | Summertime dust distribution in the Tarim Basin retrieved by satellite remote sensing and mesoscale meteorological model | 5-10 |
| <u>K. Haustein</u> , C. Pérez, J. M. Baldasano, D. Müller, M. Tesche, A. Schladitz, V. Freudenthaler, B. Heese, M. Esselborn, B. Weinzierl, K. Kandler and W. v. Hoyningen-Huene | Evaluation of the DREAM forecast system over North Africa during the SAMUM-I campaign | 5-11 |
| <u>N. Huneus</u> , M. Schulz, Y. Balkanski, J. Griesfeller, and S. Kinne | On the definition of a benchmark test for global dust models | 5-12 |

| Authors | Poster title | Theme-# |
|---|---|----------------|
| G. Kallos, S. Solomos, I. Kushta, C. Spyrou, E. Mavromatidis, M. Astitha, C. Mitsakou | The Integrated Community Limited Area Modeling System – ICLAMS | 5-13 |
| Y. Kurosaki, I. N. Sokolik, M. Shinoda / | Analyses of ground-based observations for developing a 50-year dust climatology in Central and East Asia / | 5-14 |
| F. Li, P. Ginoux , V. Ramaswamy | Mechanisms of dust transport to East Antarctica | 5-15 |
| M. Martet, V.H. Peuch, B. Laurent, B. Marticorena and G. Bergametti | Comparisons of MOCAGE results with observations on two long-range transport episodes of Saharan dust | 5-16 |
| A. Papayannis, V. Amiridis, L. Mona, R. E. Mamouri, A. Apituley, L. A. Arboledas, D. Balis, A. Chaikovski, F. De Tomasi, I. Grigorov, O. Gustafsson, H. Linne, I. Mattis, V. Mitev, F. Molero, D. Müller, D. Nicolae, C. Pérez, A. Pietruczuk, J.P. Putaud F. Ravetta, V. Rizi, F. Schnell, M. Sicard, V. Simeonov, K. Stebel, T. Trickl, G. D'Amico, G. Pappalardo and X. Wang | Coordinated lidar observations of Saharan dust over Europe in the frame of EARLINET-ASOS project during CALIPSO overpasses: A case study analysis with modeling support | 5-17 |
| C. Schmechtig, B. Marticorena, G. Bergametti, C. Bouet, B. Chatenet, G. Foret, B. Laurent, J.L.Rajot | Seasonal Cycle of the mineral dust content over Western Africa simulated by Chimere Dust model | 5-18 |
| A. Ansmann, M. Tesche, D. Althausen, D. Müller, P. Knippertz, and E. Bierwirth | Vertical profiling of convective dust plumes in southern Morocco during SAMUM | 5-19 |
| Session 6: Impacts of dust on clouds and atmo-spheric dynamics | | |
| A. Ansmann, M. Tesche, D. Althausen, D. Müller, and P. Seifert | Heterogeneous ice formation in altocumulus embedded in fresh Saharan dust observed with lidar during SAMUM 2006 | 6-1 |
| P. J. DeMott, A. J. Prenni, J. L. Stith, C. H. Twohy, J. Anderson, T. Lersch, G. Cassucio, B. Adhikary, G. Carmichael, R. Subramanian, G. Kok, S. M. Kreidenweis, D.C. Rogers, W. A. Cooper and V. Ramanathan | Ice nuclei measurements within dust plumes during transoceanic atmospheric transport | 6-2 |
| K. Desboeufs, E. Journet, S. Triquet, J.-L. Rajot and P. Formenti. | What is the role of dust in the formation of precipitating systems during African Monsoon? | 6-3 |
| B. Heinold, I. Tegen, B. Laurent, K. Schepanski | Radiative Effects and Feedbacks of Mineral Dust on Boundary Layer Dynamics in the Saharan Desert - Results from a Regional Modeling Study | 6-4 |
| P. Kumar, I.N. Sokolik, A. Nenes | Parameterization of Cloud Droplet Formation for Global and Regional Models: Activation of Hydrophilic Insoluble Dust Particles | 6-5 |

| Authors | Poster title | Theme-# |
|--|--|----------------|
| <u>Y.-C. Lin</u> and J.-P. Chen | Local dust formation due to land-use change and its impact on cloud microphysics | 6-6 |
| B. I. Cook, <u>R. L. Miller</u> and R. Seager | Dust and Sea Surface Temperature Forcing of the 1930s "Dust Bowl" Drought | 6-7 |
| <u>R. L. Miller</u> | Transient Response to Aerosol Radiative Forcing and Implications for Hurricanes | 6-8 |
| J. Perlwitz ,and <u>R. L. Miller</u> | Cloud Cover Increase by Absorbing Aerosols: A Counterexample to the Classic Semi-direct Aerosol Effect | 6-9 |
| P. Xian and <u>R. L. Miller</u> | Aerosol Radiative Forcing of an Axisymmetric Tropical Circulation | 6-10 |
| B.I. Nazarov, <u>S.F. Abdullaev</u> | Aerosol pollution of the atmosphere as a result of dust storms (dust haze) in arid zones of Tajikistan | 6-11 |
| <u>S. Nickovic</u> | A Regional Model of Atmospheric Iron Dust Transport and Deposition To The West African Ocean | 6-12 |
| <u>J.-S. Park</u> , Y. S. Ghim, Y. Choi, C.-H. Kim, C.-J. Lee, and J.-S. Kim | Estimating the Exposure Intensity of Asian Dust Storm in South Korea | 6-13 |
| <u>A. Sealy</u> , N. Mahowald | Interactions between dynamic vegetation, dust and Sahel precipitation | 6-14 |
| <u>F. Solmon</u> | A regional climate modeling study of the effect of desert dust on the West African monsoon | 6-15 |
| <u>M. J. Woodage</u> | UK-HiGEM: Simulations of desert dust with a high-resolution AGCM | 6-16 |