

Program

Day 1 Monday 2 December	Day 2 Tuesday 3 December	Day 3 Wednesday 4 December
08:30-09:30 On-site Registration		
9:30-10:00 Introduction to the Workshop		
10:00-11:00 Dust transport, mixing, and aging	9:10-11:10 Satellite remote sensing and validation	9:10-11:10 Dust direct and indirect radiative effects
11:10-11:40 Coffee Break	11:10-11:50 Coffee Break	11:10-11:40 Coffee Break
11:40-13:40 Dust transport, mixing, and aging	11:50-13:30 Ground-based and airborne observations	11:40-12:20 Dust direct and indirect radiative effects
		12:20-13:20 New sensors, algorithms and methods
		13:20-13:40 Dust impacts on health and biological systems
13:45-15:15 Lunch Break	13:45-15:15 Lunch Break	13:45-15:15 Lunch Break
15:30-16:10 Dust transport, mixing, and aging	15:15-16:15 Ground-based and airborne observations	15:15-15:55 Dust impacts on health and biological systems
16:15-16:45 Coffee Break	16:15-16:45 Coffee Break	16:00-16:45 Conclusions
16:45- 17:15 Dust transport, mixing, and aging	16:45-17:45 Ground-based and airborne observations	
17:30-19:30 Welcome Cocktail + Posters	Dinner	

December 2, 2013

- 9:30 Workshop opening
B. Bojkov (ESA)
V. Artale (ENEA)
- Session **Dust transport, mixing, and aging / Chair: P. Formenti and N. Saliba**
- 10:00 *Kallos, G., J. Kushta, S. Solomos, and M. Astitha*: Recent development of the integrated modelling system RAMS/ICLAMS
- 10:20 *Terradellas, E., S. Basart, J. M. Baldasano, J.-J. Morcrette, G. Pejanovic, O. Jorba, M. E. Brooks, A. Da Silva, S. Lu, and F. Benincasa*: SDS-WAS: Evaluation of dust forecast models
- 10:40: *Mircea, M., G. Briganti, A. Malaguti, S. Finardi, C. Silibello, C. Spyrou, C. Kalogeri, G. Kallos, and G. Zanini*: Modelling of Saharan dust transport to the Southern Italy
- 11:10 *Coffee Break*
- 11:40 *Benedetti, A., L. Jones, and J.-J. Morcrette*: Numerical prediction of dust at ECMWF: current status and challenges
- 12:00 *Basart, S., C. Gama, O. Jorba, M. Spada, C. Pérez, J. M. Baldasano, O. Tchepele, and C. Pío*: Desert dust and sea-salt evaluation of the NMMB/BSC-CTM model for North Africa
- 12:20 *Finardi, S., A. D'Allura, A. Bolignano, R. Sozzi, G. P. Gobbi, C. Spyrou, and G. Kallos*: Estimation of Sahara dust contribution to PM concentrations within Rome Air Quality Prediction System
- 12:40 *Spyrou, C., G. Kallos, and N. Bartsotas*: Modelling the regional characteristics of desert dust sources
- 13:00 *Schepanski, K., M. Mallet, J. Pelon, P. Formenti, H. Deneke, L. Klüser, T. Kunze, B. Heinold, and I. Tegen*: North African dust over the Mediterranean basin: Dust source characteristics and atmospheric controls
- 13:20 *Chung, Y.-S., H.-S. Kim, and M.-B. Park*: On air pollutant variations in the cases of long-range transport of dust particles observed in Central Korea in the leeside of the East Asia in 2010
- 13:45 *Lunch*
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- Session **Dust transport, mixing, and aging / Chair: G. Kallos and Y. S. Chung**
- 15:30 *Formenti, P., K. Desboeufs, C. Denjean, C. Di Biagio, S. Caquineau, A. Klaver, S. Chevaillier, S. Triquet, M. Le Quilleuc, S. Oskanian, C. Gaimoz, J. L. Rajot, B. Laurent, P. Vallejo, M. Quiñones Rosado, O. Mayol-Bracero and M. Mallet*: Investigating the evolution of the composition and size of African mineral dust across their atmospheric cycle
- 15:50 *Saliba, N.A., R. Baalbaki, L. El Dada, M. Jaafar, N. Daher, A. Shihadeh, and C. Sioutas*: Dust episodes and their effects on the chemical and biological transformations of coarse and fine particles in Beirut, Lebanon
- 16:10 *Coffee break*
- 16:45 *Malaguti, A., T. M.G. LaTorretta, M. Stracquadanio, C. Telloli, E. Petralia, M. Mircea, M. Berico, and G. Zanini*: Experimental evidence of Saharan dust transport and interactions with aerosol chemical species at ground level during Trisaia campaign (May-June 2010)
- 17:05 *Ediang, O.A., and A.A. Ediang*: Understanding and forecasting dust disasters along the coastline of West Africa: Lessons learned
- 17:30 *Welcome Cocktail + Posters*

December 3, 2013

Session **Satellite remote sensing and validation / Chair: T. Fehr and N. Hatzianastassiou**

- 9:10 *Crumeyrolle, S., Z. Liu, T.D. Fairlie, A. Omar, M. Vaughan, G. Schuster, L.D. Ziemba, B.E. Anderson, A.J. Beyersdorf, K.L. Thornhill, E.L. Winstead, J. Dibb, R. Moore, and G. Chen*: Long range transport of African dust over the Atlantic Ocean: Case study from the GRIP field campaign
- 9:30 *Nowotnick, E., P. Colarco, J. Welton, and A. da Silva*: Evaluating the 3-Dimensional climatology of Saharan dust transport in the NASA GEOS-5 AGCM using CALIOP
- 9:50 *Korras-Karraca, K., A. Gkikas, C. Papadimas, A. Sayer, C. Hsu, N. Mihalopoulos, and N. Hatzianastassiou*: The regime of aerosol optical depth over Sahara and Arabian Peninsula based on MODIS Aqua Deep Blue 2002-2010 data
- 10:10 *Mancera, D., L. Klüser, and M. Schroedter-Homscheidt*: Aerosol occurrence in the lower boundary layer - Support for solar energy plants' site assessment
- 10:30 *Fehr, T.*: The ESA missions for aerosols and dust
- 10:50 *Gherboudj, I., and H. Ghedira*: Sensitivity analysis of the thermal infrared dust indices to the atmospheric and surface parameters over arid area
- 11:10 *Coffee Break*

Session **Ground-based and airborne observations / Chair: F. Dulac and G. Pace**

- 11:50 *Di Iorio, T., F. Anello, C. Bommarito, M. Cacciani, L. De Silvestri, C. Di Biagio, A. di Sarra, P. Formenti, J. L. Gómez-Amo, J. A. Martínez-Lozano, D. Meloni, F. Monteleone, G. Pace, S. Piacentino, R. Schioppa, and D. Sferlazzo*: Overview and preliminary results of ground-based measurements during the summer 2013 Charmex/ADRIDMED campaign at Lampedusa
- 12:10 *Dagsson-Waldhauserova, P., O. Arnalds, H. Olafsson, L. Skrabalova, G. M. Sigurdardottir, M. Branis, J. Hladil, R. Skala, T. Navratil, L. Chadimova, S. von Lowis of Menar, and T. Thorsteinsson*: Dust storm events in Iceland: Physical properties of Icelandic dust
- 12:30 *Moroni, B., S. Castellini, S. Crocchianti, F. Scardazza, M. Angelucci, M. Pompei, M. Vecchiocattivi, and D. Cappelletti*: Ground-based Measurements at the WMO SDS-WAS Rural Regional Background Monitoring Station of Monte Martano (Central Italy)
- 12:50 *Chen, B., M. Yamada, D. Zhang, A. Matsuki, G. Shi, and Y. Iwasaka*: Vertical changes in mixing state of aerosol particles in the boundary layer in Beijing, China: Balloon-borne measurements in summer and spring
- 13:10 *Duchi, R., A. Marinoni, P. Cristofanelli, D. Putero, F. Calzolari, T. C. Landi, L. Bourcier, and P. Bonasoni*: Five years of synoptic-scale dust transport events in the southern Himalayas
- 13:45 *Lunch*

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- 15:15 *Nava, S., G. Calzolari, M. Chiari, M. Giannoni, F. Lucarelli, S. Becagli, M. Marconi, R. Traversi, and R. Udisti*: Saharan dust impact on PM_{2.5} in central Italy
- 15:35 *Pace, G., W. Junkermann, M. Berico, M. Cacciani, G. Cremona, A. di Sarra, D. Meloni, and L. Vitali*: Desert dust intrusion in a complex orographic coastal site: A case study from the MORE campaign
- 15:55 *Perrino, C., C. Farao, I. Morricone, and S. Canepari*: Contribution of water to atmospheric PM during duststorms
- 16:15 *Coffee break*
- 17:00 *Bourcier, L., A. Marinoni, P. Cristofanelli, R. Duchi, D. Putero, T.C. Landi, F. Calzolari, M. Busetto, U. Bonafè and P. Bonasoni*: Optical properties of atmospheric Saharan dust particles at the Mount Cimone GAW Global Station, Italy (2165 m a.s.l.)
- 17:20 *Mona, L., V. Amiridis, A. Amodeo, G. D'Amico, A. Hiebsch, N. Papagiannopoulos, A. Papayannis, M. Sicard, U. Wandinger, A. Comeron, and G. Pappalardo*: Long-term EARLINET dust observations

Workshop dinner

December 4, 2013

Session **Dust direct and indirect radiative effects / Chair: M. Mallet and D. Meloni**

- 9:10 *Meloni, D.*: Optical properties and radiative forcing of desert dust at Lampedusa island: What we have learned since 1999
- 9:30 *Mallet M., and the ADRIMED group*: The Aerosol Direct Radiative Impact in the MEDiterranean (ADRIMED) project
- 9:50 *Denjean, C., C. Di Biagio, S. Chevaillier, C. Gaimoz, N. Grand, R. Loisil, S. Triquet, P. Zapf, G. Roberts, T. Bourrienne, K. Sellegri, E. Freney, A. Schwarzenbock, F. Ravetta, M. Mallet, and P. Formenti*: Scattering and absorption properties of transported mineral dust aerosols in the visible spectrum: dependence on source region and temporal evolution
- 10:10 *Derimian, Y., O. Dubovik, T. Lapyonok, P. Dubuisson, P. Litvinov, and D. Tanré*: Sensitivity of aerosol forcing to particles shape, composition and properties of underlying surface
- 10:30 *Di Biagio, C., P. Formenti, H. Boucher, J. Cuesta, and J.-F. Doussin*: Experimental determination of the complex refractive index and optical properties of mineral dust in the infrared spectral range
- 10:50 *Nabat, P., S. Somot, M. Mallet, A. Culot, and E. Bruhier*: Dust aerosol effects on the aerosol-atmosphere-ocean interactions during a dust outbreak over the Mediterranean region in summer 2012 (ChArMEx/TRAQA field campaign)
- 11:10 *Coffee Break*
- 11:40 *di Sarra, A., S. Becagli, L. De Silvestri, T. Di Iorio, R. Ellul, J. L. Gomez Amo, D. Meloni, F. Monteleone, G. Pace, and D. Sferlazzo*: The big dust event of May 22, 2013, in the Central Mediterranean: Optical properties and surface radiative forcing
- 12:00 *Gomez-Amo, J.L., A. di Sarra, and D. Meloni*: Quantification of the dust layer effect in the temperature profiles due to the stratification of aerosol absorption

Session **New sensors, algorithms and methods / Chair: A. di Sarra and J. Groebner**

- 12:20 *Torres, B., L. Blarel, P. Goloub, M. Mallet, T. Bourrienne, D. Tanré, F. Dulac, O. Dubovik, C. Verwaerde, T. Podvin, A. Mortier, Y. Derimian, J.L. Guerrero-Rascado, L. Alados-Arboledas, M.J. Granados-Muñoz, J.A. Bravo-Aranda, G. Roberts, G. Monboisse, P. Chazette, J. Totems, M.-L. Boytard, and D. Fuertes*: First retrievals of aerosol properties derived from measurements of the new airborne Sunphotometer PLASMA during the campaigns SHADOWS and ChArMEx
- 12:40 *Gobbi, G.P., F. Barnaba, F. Costabile, L. Di Liberto, C. Tirelli, R. Sozzi, A. Bolignano, M. Morelli, L. Sauvage, and S. Loaec*: DIAPASON: An user-oriented EC-LIFE+ Project to quantify the role of Saharan dust on European PM10 levels
- 13:00 *Renard, J.-B., F. Dulac, G. Berthet, D. Vignelles, F. Jégou, M. Jeannot, M. Mallet, J.-C. Dupont, C. Thauray, T. Tonnelier, N. Verdier, and P. Charpentier*: Light Optical Particle Counter LOAC: A small aerosol counter with particle characterization capabilities for surface and airborne measurements

Session **Dust impacts on health and biological systems / Chair: S. Becagli and A. Benedetti**

- 13:20 *Landi, T.C., A. Riccio, L. Bourcier, P. Cristofanelli, A. Marinoni, M. Busetto, F. Cairo, and P. Bonasoni*: Quantification of natural contribution on PM10 exceedances: A novel method developed in the framework of I-AMICA Project

13:45 *Lunch*

- 15:15 *Moroni, B., D. Cappelletti, and F. Scardazza*: Morphochemical characteristics and toxic potential of Fe-bearing minerals from Saharan dust outbreaks
- 15:35 *Maki, T., F. Kobayashi, B. Chen, F. Puspitasari, M. Kakikawa, A. Matsuki, G. Shi, H. Hasegawa, and Y. Iwasaka*: Diversity and structure dynamics of airborne bacteria (bioaerosols) in Dunhuang City during a dust event
- 16:00 *Wrap-up and conclusions*

POSTERS

Dust transport, mixing, and aging

- T1:** *Beegum, S.N., and H. Ghedira:* Aerosol Microphysics over Abu Dhabi: Source strengths and potential advection pathways
- T2:** *Moshayedi, F., and S. Shirkhani:* Sand & dust storm in west Asia
- T3:** *Sessions, W., J.M. Baldasano, S. Basart, Angela Benedetti, P.R. Colarco, A. da Silva, O. Jorba, Sarah Lu, P. Lynch, J.-J. Morcrette, M. Razinger, J.S.Reid, M. Spada, T.T. Sekiyama, T.Y. Tanaka:* International Cooperative for Aerosol Prediction Multi-Model Ensemble
- T4:** *Soares J., and M. Sofiev:* Global wind-blown dust emission and dispersion estimated by the chemical transport model SILAM

Ground-based and airborne observations

- O1:** *Angiuli, L., G. Assennato, R.Giua, and L.Trizio:* Saharan dust outbreaks in Apulia region: Influence on PM10 concentrations from 2005 to 2013
- O2:** *Basart, S., F. Dulac, J.M. Baldasano, P. Nabat, M. Mallet, F. Solmon, B. Laurent, J. Vincent, L. Menut, L. El Amraoui, B. Sic, J.-P. Chaboureau, J.-F. Léon, B. Vogel, J.-B. Renard, F. Ravetta, J. Pelon, C. Di Biagio, P. Formenti, I. Chiapello, J.-L. Roujean, X. Ceamanos, D. Carrer, M. Sicard, H. Delbarre, and J.-L. Attié:* Dust Model Intercomparison For Summer 2012 In The Western Mediterranean and Comparison to The Pre-ChArMEx/TRAQA Campaign Observations
- O3:** *Becagli, S., D. M. Sferlazzo, C. Bommarito, M. Chiari, A. di Sarra, D. Frosini, J.L. Gómez-Amo, F. Lucarelli, M. Marconi, D. Meloni, S. Nava, G. Pace, S. Piacentino, M. Severi, R. Traversi and R. Udísti:* Seasonality of Saharan dust outbreaks over Lampedusa island (central Mediterranean Sea) revealed by chemical composition of PM10 sampled at ground level and optical properties measured over the air column
- O4:** *Binietoglou, I., G. D'Amico, N. Pappagianopoulos, and G. Pappalardo:* A Lidar-based algorithm for the retrieval of dust mass concentration profiles
- O5:** *Bucci, S., F. Cairo, G. Di Donfrancesco, L. Diliberto, F. Fierli, F. Ravetta, and M. Viterbini:* Characterization of dust transport events over the Mediterranean Basin region during Summer 2012
- O6:** *Calzolari, G., M. Chiari, M. Giannoni, F. Lucarelli, S.Nava, D. Frosini, S. Becagli, F. Amato, A. Karanasiou, X. Querol, C. Alves, M. Duarte, T. Nunes, C. Pio, E. Diapouli, V. Vasilatou, and K. Eleftheriadis:* Study of desert dust transport episodes in Southern Europe: preliminary results from the AIRUSE LIFE+ Project
- O7:** *Ciardini, V., T. Di Iorio, L. Di Liberto, C. Tirelli, G. Casasanta, A. di Sarra, and M. Cacciani:* Desert dust observations in the urban environment of Rome during 2006-2009
- O8:** *Dagsson-Waldhauserova, P., O. Arnalds, H. Olafsson, L. Skrabalova, G. M. Sigurdardottir, M. Branis, S. von Lowis of Menar, and T. Thorsteinsson:* Atmospheric Dust Measurements in Iceland (ADMI 2013)
- O9:** *Dulac F., and the international ChArMEx Team:* Overview of the ChArMEx project activities on Saharan dust in the Mediterranean region
- O10:** *Gkikas, A., C. Papadimas, N. Mihalopoulos, and N. Hatzianastassiou:* Effect of intense dust episodes on atmospheric lapse rates in the Mediterranean basin
- O11:** *Gröbner, J., N. Kouremeti, A. di Sarra, J. L. Gómez-Amo, D. Meloni, and D. M. Sferlazzo:* Radiation measurements during the 2013 Charmex campaign at Lampedusa, Italy
- O12:** *Mbithi, D:* The relationship between atmospheric aerosols and rainfall over the three cities in Kenya
- O13:** *Mortier, A., P. Goloub, T. Podvin, D. Tanré, Y. Derimian, C. Deroo, A. Diallo, T. N'Diaye, E. Cuevas, S. Basart, and J.M. Baldasano:* Variability of aerosol properties and radiative forcing over M'Bour (Senegal) as revealed by a 6 years coincident Sunphotometer and Lidar dataset
- O14:** *Papagiannopoulos, N., L. Mona, M. Sicard, G. D'Amico, A. Comeron, and G. Pappalardo:* EARLINET measurement campaign during summer 2012
- O15:** *Shalaby A., and E. Eltahir:* Severe dust storms over the Arabian Peninsula: Observations and modeling
- O16:** *Tositti, L., E. Brattich, and A. Riccio:* An outstanding Saharan dust event at Mt. Cimone (2165 m a.s.l., Italy) in March 2004
- O17:** *Yadav, R., L.K.Sahu, S.N.A. Jaaffrey, and G.Beig:* Distributions of ozone and related trace gases at an urban site in western India

Satellite remote sensing and validation

- S1:** *Bucci, S., C. Cagnazzo, F., L. Di Liberto, and F. Fierli:* Aerosol variability and atmospheric transport in the Himalayan region from CALIOP 2007–2010 observations
- S2:** *Chiapello, I., Q. Coopman, P. Goloub, F. Ducos, D. Tanré, and F. Dulac:* Aerosol variability and properties from POLDER-3/PARASOL satellite retrievals in the Mediterranean region
- S3:** *Ibeh, G.F., G. A. Agbo, and I. O. Godwin:* Effects of meteorological parameters and geomagnetic activities on radio refractivity in the troposphere
- S4:** *Laneve, G., R. De Bonis, L. Fusilli, P. Marzialetti, and G. Santilli:* Real Time WMS for the detection of duststorms based on optical satellite imagery
- S5:** *Gherboudj, I., and H. Ghedira:* Characterization of the dust events over the Arabian Peninsula desert

Dust direct and indirect radiative effects

- R1:** *Bassani, C., A. Pietrodangelo, R. Salzano, S. Pareti, and C. Perrino:* Towards the direct radiative effects of the local mineral dust In the Rome area
- R2:** *D'Errico, M., C. Cagnazzo, P. G. Fogli, W. K. Lau, J. von Hardenberg, and F. Fierli:* Asian monsoon and the elevated-heat-pump mechanism in coupled aerosol-climate model simulations
- R3:** *Gkikas, A., N. Mihalopoulos, and N. Hatzianastassiou:* Modification of solar radiative fluxes and atmospheric temperatures due to intense dust episodes in the greater Mediterranean basin

Dust impacts on health and biological systems

- H1:** *Kobayashi, F., T. Maki, M. Kakikawa, M. Yamada, A. Matsuki, T. Naganuma, and Y. Iwasaka:* Direct sampling of atmospheric bioaerosol using a tethered balloon over the Antarctic