



# 3rd International Meeting on Meteorology and Climatology of the Mediterranean

## Program

6-9th June 2011

### Monday, 6th

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16:30 : *Opening work*

20:00 : *Dinner*

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### Tuesday, 7th

#### Block 1: Climatology

Chairmen: *Giuseppe Rossi, Josep Calbò, José A. Guijarro*

9:00-9:30 **Habibullo Abdussamatov**, (invited lecture), Pulkovo Observatory - Saint Petersburg: *Climate is driven by Sun*

9:30-9:45 **E. Caporali, S. Fatichi, G. Rossi**: *Spatial and temporal variability of rainfall indexes in Tuscany*

9:45-10:00 **P. Faggian, D. Ronzio**: *Climatic Change impacts on Electric System over Italian Region*

10:00-10:15 **J.A. Guijarro**: *Automatic homogenization of climatological series with the R package 'Climatol'*

10:15-10:30 **U. Lall, F. Cioffi, E. Volodin, C. Karamperidou, R. Purini**: *Extreme Precipitation in the South and South-East Mediterranean: Climate structure and predictability*

10:30-10:45 **A. Longobardi, P. Villani**: *Time and space variability of precipitation trends in a large Mediterranean region*

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10:45 to 11:30 : *Poster Session: Block 1 & 2*

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11:30-11:45 **G. Grieco, G. Masiello, C. Serio**: *Impact of spectroscopy and atmosphere state uncertainties on the H<sub>2</sub>O and CO<sub>2</sub> climate forcing*

11:45-12:00 **C. Novaes De Santana, R. Romero, V. Homar**: *Dynamical-statistical projections of annual and seasonal precipitation in Spain during the 21st century*

12:00-12:15 **S. Lovelli, M. Perniola, M. Valerio, M. Amato**: *Effect of Climate Change on Water Use and Irrigation Requirement of crops in the Mediterranean area*

12:15-12:30 **Y. Sola, J. Lorente**: *Ozone "mini-hole" occurrence over the northwestern Mediterranean: influence on surface solar UV irradiance*

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13:00 to 15:30 : *Lunch Break*

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#### Block 2: Processes and applications

Chairmen: *Joan Cuxart, José Luís Palau, Francesco Vespe*

15:00-15:30 **Dino Zardi** (invited lecture), University of Trento: *Diurnal mountain and valley winds: dynamics, phenomena and interactions with coastal processes*

15:30-15:45 **B. Bove, A.M. Crisci, M. Lovallo, L. Mangiamele, L. Ticconi**: *Integrated approach of methods and measurements to study Saharian intrusion at local scale*

15:45-16:00 **F. Castellví, S. Consoli, R. Papa**: *A first analysis to evaluate the fetch requirements using surface renewal analysis*

16:00-16:15 **C. De Luca, A. Pelosi, A. Cuomo, P. Furcolo, F. Rossi**: *An improved procedure for the regionalization of extreme rainfall in the Campania region*

16:15-16:30 **J.L. Gómez-Amo, V. Pinti, T. Di Iorio, A. di Sarra, D. Meloni, V. Bellantone, M. Cacciani, D. Fuà, M.R. Perrone**: *Aerosol radiative forcing and atmospheric heating rates during a desert dust event in the Central Mediterranean: the role of the vertical distribution of aerosol properties*

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16:45 to 17:30 : *Poster Session: Block 1 & 2*

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17:15-17:30 **V. Imbrenda, R. Coppola, V. Cuomo, M. Lanfredi, M. Ragosta, T. Simoniello**: *Correlation of vegetation and temperature seasonal profiles: Spatial arrangement and temporal variability*

17:30-17:45 **A.M. Palomares**: *Wind flow characteristics through the Strait of Gibraltar*

17:45-18:00 **S. Sasso, L. Scrano, L. Fraddosio Boccone, M. Lovallo, A. Palma, S.A. Bufo**: *Air pollution, climate change and calcarenite stone:*

a case of study

**18:00-18:15** V. Imbrenda, R. Coppola, M. D'Emilio, M. Lanfredi, M. Macchiato, M. Ragosta, T. Simoniello: *Detection of persistent anomalies in air temperature and NDVI spatial patterns for the identification of degraded areas*

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**20:00** : Dinner

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## Wednesday, 8th

### Block 3: Remote and in situ measurements

Chairmen: *Vicente Caselles, Mauro Fiorentino, Cosimo Marzo*

**9:00-9:30** Marco Mancini, (invited lecture), Polytechnic of Milan: *Use of satellite and ground data for mass balance control in distributed hydrological models*

**9:30-9:45** C. Cammalleri, F. Capodici, G. Ciraolo, A. Maltese: *Effect of morphology on remote sensing-based evapotranspiration assessment at basin scale*

**9:45-10:00** C. Corbari, J.-H. Lee, M. Mancini: *The role of satellite data in a distributed energy-water balance model at local and basin scales*

**10:00-10:15** A. D'Errico, B. Basso, S.A. Bufo: *Agricultural applications of Wireless Sensor Networks (WSN)*

**10:15-10:30** P. Di Girolamo, D. Summa, R. Bhawar, T. Di Iorio, G. Vaughan, G. Peters, Y. Dufournet: *Lidar and Radar Measurements of the melting layer in the frame of the Convective and Orographically-induced Precipitation Study: observations of dark and bright band phenomena*

**10:30-10:45** R. Matarrese, I. Portoghese, M. Vurro, P. Soldo: *Estimation of Evapotranspiration by use of Remote Sensing techniques*

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**10:45 to 11:30** : Poster Session: Block 3 & 4

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**11:30-11:45** G. Grieco, G. Masiello, C. Serio: *A novel method to retrieve CO<sub>2</sub> from satellite-borne high spectral resolution infrared sensors*

**11:45-12:00** V. García-Santos, E. Valor, S. Sánchez, C. Coll, V. Caselles: *Water vapor content estimation from radiance measurements in the TIR region*

**12:00-12:15** J. Mazon, M. Viñas: *Raindrop diameter distribution experiment in Mediterranean climate of northeast of Iberian Peninsula (2008-2010)*

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**13:00 to 15:00** : Lunch Break

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**15:00-15:15** G. Mendicino, T. Mungari, A. Senatore: *Spatial distribution of reference evapotranspiration in Southern Italy by means of a temperature-based equation*

**15:15-15:30** N. Montaldo, R. Corona, J.D. Albertson: *Micrometeorological measurements and evapotranspiration estimates in two Contrasting Water-limited Mediterranean Ecosystems on Sardinia, Italy*

**15:30-15:45** F. Vespe, R. Pacione, C. Benedetto, B. Pace, V. Scasciamacchia, R. Tolve, M. Virelli, M. Amoroso, P. Sacco: *The Role of GPS networks for Meteorology Applications in the Mediterranean Area*

**15:45-16:00** F. Vespe, R. Pacione, C. Benedetto, B. Pace, V. Scasciamacchia, R. Tolve, M. Virelli, M. Amoroso, P. Sacco: *Climate Investigation in Mediterranean Area with Global Navigation Satellite Systems*

**16:00-16:15** R. Niclòs, J.A. Valiente, M.J. Barberà, M.J. Estrela, V. Caselles: *Surface air temperature assessment from remote sensing and geographical data*

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**16:15 to 17:00** : Poster Session: Block 3 & 4

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### Block 4: Numerical Modelling

Chairmen: *Bernat Codina, Carmine Serio, Lluís Fita*

**17:00-17:30** Stavros Solomos, (invited lecture), University of Athens: *The role of airborne particles on radiation-cloud-precipitation cycle in Mediterranean*

**17:30-17:45** M. García-Diez, J. Fernández, L. Fita, C. Yagüe: *WRF skill over Europe with 3 PBL schemes during the year 2001*

**17:45-18:00** L. Garcies, V. Homar: *Ensemble sensitivities of Mediterranean high-impact weather: from a climatological perspective to real-time forecasting environment*

**18:00-18:15** G. Grieco, G. Masiello, C. Serio:  *$\varphi$ -IASI products for the Mediterranean area*

**18:15-18:30** P. Costabile, C. Costanzo, F. Macchione: *Fully dynamic wave modelling of overland flow*

**18:30-18:45** J. Mazon, M. Bariendos, D. Pino, A. Puertas: *Rapids and sudden invasions of very hot and dry air bubbles in the east and northeast of the Iberian Peninsula: the case of 27th August 2010*

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**20:00** : Gala Dinner

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## Thursday, 9th

**9:00-9:15 L. Brocca, S. Camici, A. Tarpanelli, F. Melone, T. Moramarco:** *Climate change effects on floods frequency through a continuous hydrological modelling*

**9:15-9:30 M. Di Leo, V. Iacobellis, T. Lacava, S. Manfreda, M.R. Margiotta, B. Onorati, N. Pergola, V. Tramutoli:** *Exploring the potential of AMSU-based soil wetness indices for the description of soil water content over the experimental basin of Corleto (Potenza, Basilicata Region)*

**9:30-9:45 M. Sciortino:** *Modeling tools for climate change impact studies*

**9:45-10:00 B. Bonaccorso, G. Di Mauro, A. Cancelliere, G. Rossi:** *Investigating the influence of North Atlantic Oscillation Index on the assessment of drought transition probabilities: an application to Sicily*

**10:00-10:15 E. Tan:** *An Investigation of the Mediterranean Extreme Precipitation*

**10:15-10:30 M. Vich, R. Romero, E. Richard, P. Arbogast, K. Maynard:** *Modification of initial conditions through perturbing the potential vorticity field in mesoscale forecasts of Mediterranean heavy precipitation events: 10 June 2000 and 9 October 2002*

**10:30-10:45 G. Ibarra-Berastegi, J. Saézn, A. Ezcurra, A. Elías, J. Diaz Argandoña, I. Errasti:** *Downscaling of surface moisture flux using analogues followed by random forests at a West Mediterranean location (Tortosa)*

## Poster Program

### Block 1: Climatology

**PB1.1** Autorità di Bacino della Basilicata: *Effects of climate changes in Basilicata. The coastal erosion of Jonic area*

**PB1.2** F. De Paola, A. Ranucci: *Rain Vs temperature spatial distribution in the U.S.*

**PB1.3** U. Fratino, A.R. Di Santo, C. Campana, V. Iacobellis, L. Romano: *Introducing climatic change in river basin management*

**PB1.4** C. Brindisi, C. Glisci, G. Marchetta, R. Votta: *SPI index trend (1960-1990) in Agri and Sinni basins (Basilicata Region). Analysis and valuations*

**PB1.5** M. Greco, G. Martino, A. Guariglia: *Sea climate analysis through the assessment of maritime erosion index for jonic-Lucanian coast*

**PB1.6** R. Izquierdo, M. Alarcon, A. Avila: *Evaluation of origin and trends in the precipitation ionic content at La Castanya (Catalonia, NE Spain)*

**PB1.7** B. Majone, A. Bellin, C.I. Bovolo, S. Blenkinsop, H.J. Fowler: *Impacts of climate change on water resources: the case of the Gallego river basin*

(Spain)

**PB1.8** F. Molinos, J. Cuxart: *Using WindRass profiles to characterize climatologically the main wind circulation patterns of the boundary layer in the Eastern Ebro river basin*

**PB1.9** R. Palumbo, V. Telesca: *Is Global Cooling Process Real or Not?*

**PB1.10** E. M<sup>a</sup> Hernández, L. M<sup>a</sup> Bañón, F. Belda: *Spatial layout of forecasted extreme temperatures in the city of Murcia (Spain)*

**PB1.11** M. Ragosta: *Air quality and climate change: analysis at local scale for an integrated strategy*

**PB1.12** A. Elferchichi, V. Telesca, N. Lamadadena: *Temperature trend analysis of the period 1950-2003: case of Apulia region in southeastern of Italy*

**PB1.13** A. Elferchichi, V. Telesca, N. Lamadadena: *Precipitation trend analysis of the period 1950-2003: case of Apulia region in southeastern of Italy*

**PB1.14** F. Viola, E. Arnone, L.V. Noto: *Investigating the changes in extreme rainfall in Sicily*

### Block 2: Processes and Applications

**PB2.1** D. Caniani, C. Lavinia, I.M. Mancini, S. Masi: *Hydrological balance and surface water quality at river basin scale*

**PB2.2** N. Castell, E. Mantilla, A. Daukševičiūtė, L. Téllez, H. Espinós, T. Gómez, M. Doval, A.L. Torres, E. Baltrėnaitė, M.M. Millán: *Ozone and NO<sub>2</sub> monitoring using diffusive samplers: first results of the 2010 summer campaign in the Turia river basin (Southeastern Iberian Peninsula)*

**PB2.3** J. Cuxart, F. Molinos, I. Roselló, F. Santacruz, J.L. Palau, B. Wrenger, J. Dünnermann: *Nighttime evolution of a strong surface inversion in the Eastern Ebro basin*

**PB2.4** A. D'Angella, F. Canora, V. Telesca, G. Spilotro: *Analysis and assessment of the sensitivity to desertification in the Bradano river basin (Basilicata, Southern Italy)*

**PB2.5** G. Gangoiti, E. Sáez de Cámara, I. Gómez-Domenech, L. Alonso, M. Navazo, J. Iza, J.A. García, J.L. Iardía, M.M. Millán: *Evaporative moisture sources during two heavy rainfall episodes in the Alpine region*

**PB2.6** M.A. Jiménez, M.O. Jonassen, J. Cuxart: *Diurnal cycle of upslope and downslope flows on the northern side of central Pyrenees*

**PB2.7** P. Jiménez-Guerrero, J.J. Gómez-Navarro, Z. Hernández, R. Lorente-Plazas, S. Jerez, J.P. Montávez: *Defining the spatio-temporal changes in future air pollution in the Mediterranean under SRES A2 and B2 scenarios*

**PB2.8** M. López-Pacheco, J. Belmonte, M. Alarcón: *Cluster analysis of back trajectories and atmospheric pollen in Catalonia, NE Spain*

**PB2.9** D. Martínez, J. Cuxart, D. Gomila: *Study of Basin Flows over a Large Valley by means of a Meteorological UAV*

**PB2.10** J.L. Palau; P. Rovira, M. Millán: *Mesoscale tropospheric interactions within the Western Mediterranean Basin*

**PB2.11** D. Serrano, M.J. Marín, M.P. Utrillas, J.A. Martínez-Lozano, J.L. Gómez-Amo: *UV index on inclined and vertical planes from experimental UV index on horizontal plane*

### **Block 3: Remote and in situ measurements**

**PB3.1** J. Bech, M. Aran, C. Brucet, N. Pineda, T. Rigo, E. Vilaclara: *Preliminary analysis of remote sensing observations of a Mediterranean thunder-snow and low-altitude heavy snowfall event*

**PB3.2** P. Di Girolamo, D. Summa, A. Orlando: *Characterization of Convection Precursors and Convection Initiation Processes by Raman lidar*

**PB3.3** C. Brindisi, L. Bruno, G. Di Nuzzo, C. Glisci, M. Lovallo, G. Marchetta, R. Votta: *Meteorological data measurement network in the framework of monitoring system managed by ARPAB*

**PB3.4** F. Carriero, L. Garramone, R. Loizzo, C. Marzo: *The Multimission National Center of the Italian Space Agency: an infrastructure for the distribution of Remote Sensing Satellite data and products*

**PB3.5** R. Guarini, R. Loizzo, C. Marzo: *Time series analysis of sPRI-MODIS for Italian forests*

**PB3.6** G. Frega, P. Piro, M. Carbone: *Analysis of useful instruments for the mitigation of the phenomenon of drought*

**PB3.7** L. Mona, G. Pappalardo, A. Papayannis, A. Ansmann, A. Apituley, L. Alados Arboledas, D. Balis, A. Chaikovsky, A. Comeron, A. Giunta, H. Linné, V. Mitev, D. Müller, D. Nicolae, M.R. Perrone, A. Pietruczuk, M. Pujadas, J.-P. Putaud, F. Ravetta, V. Rizi, V. Simeonov, N. Spinelli, D. Stoyanov, T. Trickl, F. Wagner, M. Wiegner: *EARLINET observations of Saharan dust events on continental scale*

**PB3.8** G. Cervarolo, V.A. Copertino, G. Mendi-cino, R. Palumbo, V. Pastore, G. Scavone, A. Senatore, V. Telesca: *Earth radiative fluxes evaluation at a regional scale*

**PB3.9** B. Bove, A.M. Crisci, G.L. D'avenia, L. Mangiamele: *Meteorological data processing to characterize PBL starting from measurements by regional air quality network*

**PB3.10** C. Cammalleri, F. Capodici, G. Ciraolo, A. Maltese: *Regional Soil Moisture Retrieval Using Remotely Sensed Crop Water Stress Indicators*

**PB3.11** S. Matamoros, J.-A. González, J. Calbó: *Closure validation of cloud optical depth derived from transmittance measurements*

**PB3.12** F. Madonna, A. Amodeo, A. Boselli, C.

Cornacchia, G. D'Amico, A. Giunta, L. Mona, G. Pappalardo: *CIAO: the CNR-IMAA advanced observatory for atmospheric research*

**PB3.13** M.R. Muolo, V. Ancona, R. Matarrese, V.F. Uricchio, N. Dongiovanni: *A preliminary study to assess remote sensing efficiency in soil organic carbon monitoring*

**PB3.14** F. Santa Cruz, F. Sanzi, J.L. Palau, G. Montalvo, M. Bigeriego: *Application of AERMOD Modeling System on the calculation of fertilizers emissions*

**PB3.15** V.A. Copertino, M. Di Pierro, G. Scavone, V. Telesca: *Meaningfulness and representativeness of eddy covariance measurements at Terra Montonata tower*

### **Block 4: Numerical Modelling**

**PB4.1** A. Acampora, T. Pizzolla, S. Manfreda: *Effects of Morphology on Solar Radiation and Vegetation Patterns*

**PB4.2** L. Fita, J. Fernández, M. García-Díez: *WRF model sensitivity to horizontal, vertical and temporal resolution*

**PB4.3** E. Trulli, N. Longino, P. Di Girolamo: *Influence of rainfall on mobility of atmospheric and soil pollutants in water cycle*

**PB4.4** A. Ossó, Y. Sola, J. Lorente: *Correlations between climate patterns and ozone column over Western Europe*

**PB4.5** C. Giovanna, V. Pasquale, De Luca Davide L.: *Mathematical models for real time prediction of landslides induced by rainfalls*