

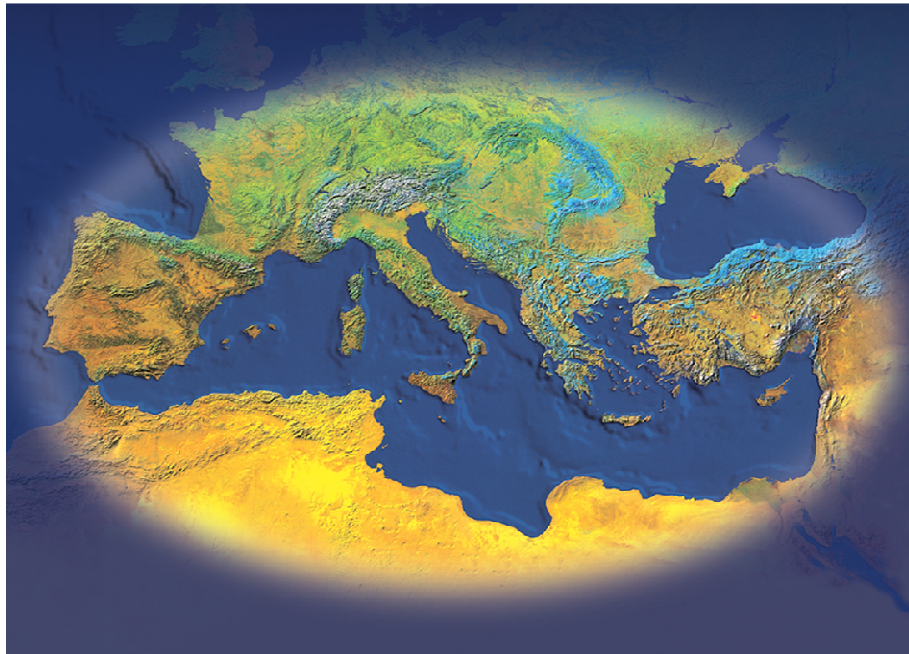
# *MedCLIVAR Final Conference*

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## **Mediterranean Climate: From Past to Future**

**6-9 June 2011**

**Lecce, Italy**



*Programme*

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## *Convenors and Sponsors:*

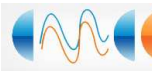
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**E**UROPEAN  
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**UNIVERSITÀ  
DEL SALENTO**



**Centro Euro-Mediterraneo  
per i Cambiamenti Climatici**



## *Scientific Committee:*

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**Piero Lionello**, University of Salento, IT

**Uwe Ulbrich**, Freie Universität Berlin, DE

**Jürg Luterbacher**, Justus Liebig University Giessen, DE

**Mikis Tsimplis**, NOCS, UK

**Pinhas Alpert**, Tel-Aviv University, IL

## Sunday 5 June

16:00 - 20:30 **Registration**

## Monday 6 June

08:00 - 09:00 **Registration**

09:00 - 09:30 **Welcome**

D. Laforgia - Rector of the University of Salento  
L. Nicastro - Assessore all'Ambiente Regione Puglia  
B. Ciccarese - Assessore Provincia di Lecce  
B. Avril - European Science Foundation  
G. Aloisio - CMCC EuroMediterranean Center for Climate Change  
P. Lionello - Chair of the MedCLIVAR programme

## Session 1: Mediterranean climate relevant and important scientific issues

### **Convenors:**

*P. Lionello* - University of Salento, IT

*P. Drobinski* - Laboratoire de Météorologie Dynamique, FR

09:30 - 10:00 **P. Lionello** - University of Salento, IT  
*Mediterranean climate : recent progresses and open issues*

10:00 - 10:30 **P. Drobinski** - Laboratoire de Météorologie Dynamique, FR  
*The Mediterranean water cycle: To couple or not couple, what are the questions?*

10:30 - 11:00 **P. Alpert** – Tel Aviv University, IL  
*Global Dimming or Local Dimming? The Megacities Contribution*

## 11:00 - 11:30 **Poster Session and Coffee Break**

### **Authors in attendance**

**G. Hancz** - Making use of scenario planning in identifying climate change-related research hotspots in the Mediterranean

**MC. Llasat** - The Report on Climate Change in Catalonia

**I. Bladè** - Climate in Spain: Past, Present and Future

**M. Baldi** - The role of the Euro-Atlantic circulation in the occurrence of summer temperature anomalies and extremes in the Mediterranean

## Session 2: The circulation of the Mediterranean Sea: trends and changes

### **Convenors:**

*A. Harzallah* - Institut National des Sciences et Technologies de la Mer, TN

*V. Zervakis* - University of the Aegean, GR

11:30 - 12:00 **A. Harzallah** - Institut National des Sciences et Technologies de la Mer, TN  
*Variability and trends of the hydrographic characteristics in the Strait of Sicily*

12:00 - 12:30 **V. Zervakis** - University of the Aegean, GR  
*Variability of the Eastern Mediterranean overturning circulation, with emphasis on Aegean Sea developments*

12:30 - 13:00 **K. Schroeder** - CNR, IT  
*Thermohaline variability in the western Mediterranean Sea*

13:00 - 14:30 **Lunch**

### Session 3: Paleoclimatic evidence from the Mediterranean

#### **Convenors:**

*J. Luterbacher* - Justus Liebig University Giessen, DE

14:30 - 15:00 **J. Luterbacher** - Justus Liebig University Giessen, DE  
*A review of 2000 years of paleoclimatic evidence in the Mediterranean*

15:00 - 15:30 **Y. Kushnir** - Columbia University, US  
*Atlantic role in Eastern Mediterranean hydroclimate variability throughout the Holocene*

15:30 - 16:00 **N. Waldmann** - University of Haifa, IL  
*The Dead Sea sedimentary archive: insights into high resolution paleoclimate reconstructions of the last ~300 ka*

### 16:00 - 16:30 Poster Session and Coffee Break

#### **Authors in attendance**

**I. Rivetti** - Long-Term Evolution of the Mediterranean Water Column and Biological Response

**F.O. Amore** - Coccolithophores response to Nao-like millennial forcing: a time-space reconstruction over the last 30 Ka in the Thyrrenian sea

**M. Morellon** - Paleoclimatic reconstruction of the Medieval Climate Anomaly and the Little Ice Age from continental and marine records of the Iberian Peninsula

**A. Schimmelmann** - Paleoenvironmental transitions in the central Peloponnese: A sediment record from a former lake near Asea, Greece

**A. Gogou** - Reconstructions of climatic and productivity patterns in the NE Mediterranean Sea during the Holocene using biogeochemical proxies

### 16:30 – 18:00 Parallel Sessions (15 minutes each)

#### Session 1: Mediterranean climate: relevant and important scientific issues (Sala Donatello)

**H. Kontoyiannis** - Influence of atmospheric circulation on turbulent air-sea heat fluxes over the Mediterranean Sea during winter: An overview

**C. Gonzalez-Hidalgo** - MOPREDAS, a new tool for subregional precipitation trend analyses of Spain

**C. Kelley** - The relative contributions of radiative forcing and internal climate variability to the late 20th century drying of the Mediterranean region

**J. López-Parages** - The ENSO influence on the Mediterranean rainfall. A multidecadal modulated relationship?

**A. Mariotti** - Decadal climate variability and drought in the Mediterranean region"

**M. Zampieri** - Recent temperature trend in the Middle East, Northern Africa and Eastern Mediterranean

#### Session 2: The circulation of the Mediterranean Sea: trends and changes (Sala Raffaello)

**P. Fraunie** - Impact of wind forcing resolution on the coastal turbulent structures and mixing

**M. Herrmann** - What induced the exceptional 2005 convection event in the northwestern Mediterranean basin? Answers from a modeling study

**H. Kontoyiannis** - Climatic variability of the near-surface sea temperatures in the Aegean-Black Sea system and relation to meteorological forcing

### Session 3: Paleoclimatic evidence from the Mediterranean (Sala Leandro)

- F. Adloff** - Upper ocean climate of the Eastern Mediterranean during the Holocene Insolation Maximum – a model study  
**S. Akcer On** - High-Resolution Late Holocene Climatic Records of Lakes and Lagoons at Western Turkey  
**C. Alvarez Castro** - Meteorological Database Over The Mediterranean Sea Through Old Royal Navy Logbooks  
**R. Grimm** - Ocean biogeochemical modeling of scenarios leading to eastern Mediterranean sapropel formation during the early Holocene  
**A. Persoiu** - The interplay between North Atlantic and Mediterranean climatic influences in Central Europe during the Holocene: a view from cave ice cores  
**A. Prendergast** - A palaeoclimatic framework for the late Pleistocene human occupation of the North African Mediterranean: correlating marine and terrestrial proxies from the stable isotope analysis of molluscs

### 19:00 Reception (Grand Hotel Tiziano)

## Tuesday 7 June

### Session 4: Synoptic patterns: climatology and trends

#### Convenors:

- U. Ulbrich** - Freie Universität Berlin, DE  
**A. Jansà** - AEMET, ES

- 09:00 - 09:30 **U. Ulbrich** - Freie Universität Berlin, DE  
**A. Jansà** - AEMET, ES  
*Synoptic patterns, cyclones and weather in the Mediterranean. Present situation and trends*
- 09:30 - 10:00 **R. Trigo** - University of Lisbon, PT  
*Atmospheric circulation associated with major heat waves in the Euro-Mediterranean region*
- 10:00 - 10:30 **H. Flocas** - University of Athens, GR  
*Explosive cyclones in the Mediterranean: vertical structure and dynamics*

### 10:30 - 11:30 Poster Session and Coffee Break

#### Authors in attendance

- M. Reale** - Characterization of cyclones producing intense precipitation events in the Mediterranean region  
**D.J. Brayshaw** - Understanding the climatological structure of the Mediterranean winter-time storm track  
**D. Novotna** - Phase-coherent oscillatory modes in solar/geomagnetic activity and climate variability  
**L. Scarascia** - Links between Sea Level in the Northern Adriatic Sea and large scale patterns  
**G. Jordà** - Atmospheric contribution to Mediterranean and nearby Atlantic sea level variability under different climate change scenarios  
**L. Cavicchia** - Towards a long-term climatology of Medicanes”  
**L. Congedi** - Assessing improvement of RCM with respect to GCM climate simulations over the Mediterranean region: mean monthly fields

## Session 5: Mediterranean Sea Level

### Convenors:

*M. Tsimplis* - NOCS, UK

*D. Gomis* - Universitat de les Illes Balears, ES

11:30 – 12:00 **M. Tsimplis** - NOCS, UK

**D. Gomis** - Universitat de les Illes Balears, ES

*Open issues on long term Mediterranean Sea level variability*

12:00 - 12:30 **S. Josey** - University of Athens, GR

*Mediterranean Air-Sea Interaction : An Overview of Basin Budgets, Impacts of Severe Heat Loss Events and Links to the Wider Climate System*

12:30 - 13:00 **E. Alvarez** - University of Athens, GR

*Regional hindcasts and climate projections for the study of long term Mediterranean Sea level variability*

13:00 - 14:30 **Lunch**

## Session 6: Modeling of the Mediterranean climate system

### Convenors:

*L. Li* - Laboratoire de Météorologie Dynamique, FR

*P. Ruti* - Italian National Agency for New Technologies, Energy and Sustainable Economic Development, IT

14:30 - 15:00 **L. Li** - Laboratoire de Météorologie Dynamique, FR

*A review on recent efforts of the Mediterranean regional climate modeling*

15:00 - 15:30 **P. Ruti** - Italian National Agency for New Technologies, Energy and Sustainable Economic Development, IT

*Climate Local Information in the Mediterranean region: Responding to User Needs*

15:30 - 16:00 **U. Mikolajewicz** - Max-Planck-Institut für Meteorologie, DE

*Modeling Mediterranean Ocean Climate for the LGM and the Early Holocene*

16:00 - 16:30 **Poster Session and Coffee Break**

### Authors in attendance

**T. Agacayak** - The effect of meteorological conditions on PM10 in Istanbul

**J. Ciarlo** - Investigating relationships between Oscillation Patterns around the Mediterranean and their influence on aerosol transport using a Regional Climate Model (RegCM4)

**S. Becagli** - A study of anthropic and natural sources of aerosol in central Mediterranean Sea by bulk PM10 and size-segregated aerosol chemistry

**Y. Mamane** - Characterization of Coarse and Fine Particles in Tel Aviv, Israel, during Dust Storm Episodes of Spring 2006

**M.A. Ramos** - Changes in Present and Future Circulation Types Frequency in Northwest Iberian Peninsula

**I. Güttler** - Modelling recent climate and climate change over the eastern Adriatic"

**G. Maggionto** - Effects of climate change on UHI with focus on Mediterranean cities

## 16:30 – 18:00 Parallel Sessions (15 minutes each)

### Session 3: Paleoclimatic evidence from the Mediterranean (Sala Donatello)

- H. Reade** - North African Palaeoclimate over the last ~80 ka: Isotopic Analysis of Mammalian Tooth Enamel from Northeast Libya  
**S. Desprat** - Holocene vegetation and marine environment variability in Central Mediterranean from a direct land-sea correlation  
**B. Martrat** - Climate of relatively stable warm periods. A Mediterranean paleo-perspective  
**G. Orombelli** - Holocene glacier fluctuations in the Italian Alps  
**M.A. Sicre** - PaleoMex (Paleo-Mediterranean) Initiative  
**I. Unkel** - StymphaCore – Reconstructing the Climate History of the Northern Peloponnese, Greece

### Session 4: Synoptic patterns: climatology and trends (Sala Raffaello)

- J. Garcia-Serrano** - Large-scale atmospheric response to eastern Mediterranean summer SST anomalies  
**A. Douguedroit** - Main circulation types associated with weather regimes of significantly decreasing precipitation in the Mediterranean (1950 - 2000)

Followed by:

### Session 6: Modeling of the Mediterranean climate system (Sala Raffaello)

- R. Aznar** - Towards a more complete knowledge of the Iberian ocean waters climate through baroclinic ocean climate simulations”  
**J.C. Dutay** - Simulation of anthropogenic CO<sub>2</sub> uptake in the Mediterranean sea with the NEMO-MED12 model: impact on water masses acidification  
**G. Sannino** - Mediterranean Coupled Models comparison: response of the thermohaline circulation to climate change  
**S. Somot** - Regional Climate System Modelling of the Mediterranean region at CNRM: a multi-component approach to study climate variability

### Session 5: Mediterranean sea level (Sala Leandro)

- J. Sepic** - Mediterranean sea level variability changes and projections at high frequencies (1-100 days)  
**L. Fenoglio-Marc** - Water mass variation in the Mediterranean Sea and relation to climate change  
**M. Marcos** - Changes in storm surges in southern Europe during the 21st century”  
**A. Shaw** - Sea Level Reconstruction using Altimetry and Tide Gauges within the Mediterranean Basin  
**M. Said** - Climatic change and sea level variations off Alexandria, Egypt

## 19:00 Guided Tour of Lecce Old City Centre (Meeting point “Porta Napoli”)

## Wednesday 8 June

### Session 7: Aerosols chemistry and climate

#### Convenors:

*F. Dulac* - CEA, FR

*J. Lelieveld* - Max-Planck-Institut für Chemie, DE

- 09:00 - 09:15 **F. Dulac** - CEA, FR  
*The chemistry-aerosol Mediterranean experiment (ChArMEx) initiative*
- 09:15 - 09:30 **J. Lelieveld** - Max-Planck-Institut für Chemie, DE  
*Increasing heat stress and air pollution in the Middle East*
- 09:30 - 10:00 **S. Pandis** - Carnegie Mellon University, US  
*Air Quality in a Changing Climate*
- 10:00 - 10:30 **S. Kinne** - Max-Planck-Institut für Meteorologie, DE  
*Lecture Title TBA*

### 10:30 - 11:30 Poster Session and Coffee Break

#### Authors in attendance

**G. Bertini** - Forests and climate change. Recent evidences from the ICP-Forests intensive monitoring network in Italy

**K. Cindric** - Trends and variability in precipitation extremes along the eastern Adriatic

**M. Krželj** - Climatologic analysis of northern Adriatic Sea physical variations occurred in the recent period (1970-2007)

**V. Muradyan** - Studying the dynamics of the ecosystems of mountainous country applying multi spectral satellite images (ARMENIA)

**S. Seubert** - Ability of Synoptic Downscaling techniques for analysing precipitation extremes in the Mediterranean area

**G. Vogt** - Percentile-based extreme indices of precipitation in the Mediterranean area in a multi-model ensemble of global climate models

### Session 8: The climate of the Mediterranean region in future climate projections

#### Convenors:

*S. Planton* - Météo France, FR

*J. Jacobeit* - Augsburg University, DE

- 11:30 - 11:45 **S. Planton** - Météo France, FR  
*Application of climate models for regional climate change projections in the Mediterranean area*
- 11:45 - 12:00 **J. Jacobeit** - Augsburg University, DE  
*Application of statistical methods for regional climate change projections in the Mediterranean area*
- 12:00 - 12:30 **H. Paeth** - University of Wuerzburg, DE  
*Detection of climate change in the Mediterranean basin: The added value of regional climate models*
- 12:30 - 13:00 **S. Krichak** - Tel Aviv University, IL  
*Evaluation of the role of the moist air transport and intensity of jet streams in the Mediterranean precipitations based on results of an AOGCM simulation experiment*



13:00 - 14:30 **Lunch**

### **Session 9: The Mediterranean Climate research: Integrated and National projects**

**Convenors:**

V. Ducrocq - Meteo France, FR

14:30 - 15:00 **V. Ducrocq** - Meteo France, FR

*HyMeX – an observation and modelling programme dedicated to the Mediterranean Water Cycle*

15:00 - 15:30 **A. Navarra** - Istituto Nazionale Vulcanologia e Geofisica, IT

*A changing climate, an adapting world: what did we learn from the CIRCE project*

15:30 - 16:00 **S. Somot** - Météo-France, FR

*The international Med-CORDEX project: A multi-component and multi-model approach to study the physical processes, the variability and the trends of the Mediterranean regional climate system*

16:00 - 16:30 **Poster Session and Coffee Break**

### **16:30 – 18:00 Parallel Sessions (15 minutes each)**

#### **Session 7: Aerosols chemistry and climate (Sala Donatello)**

**M. Gaetani** - Summer Mediterranean SST impact on Saharan aerosols transport: seasonal modulation and related atmospheric circulation regimes

**Di Sarra** - Radiative forcing by Mediterranean aerosols in the infrared spectral range

**Followed by:**

#### **Session 8: The climate of the Mediterranean region in future climate projections (Sala Donatello)**

**Barrera-Escoda** - Dynamical downscaling of climate change projections for Catalonia (NE Spain) during the 21st Century

**M. Dubrovsky** - Projection of future climate in the Mediterranean based on multiple GCMs and stochastic weather generator

**I. Bladè** - Connections Between The Summer Nao And Drying In The Mediterranean Region

#### **Session 9: The Mediterranean Climate research: Integrated and National projects (Sala Raffaello)**

**C. Pizzagalli** - Climate data analysis in the WASSERMed project

**B. Acma** - Climate change and tourism: southeastern Anatolia region and southeastern Anatolia project (GAP) in Turkey as a case study

**G. Coppini** - Mediterranean Operational Oceanography Network in support of environmental applications

**M. Todorovic** - Climate change impact on agricultural water demand in Italy

**M. Tonani** - MyOcean: Mediterranean Monitoring and Forecasting Centre

#### **Session 10: Extremes and impact of climate variability and change (Salla Leandro)**

**Paxian** - Dynamical downscaling of future climate change of extreme events in the Mediterranean area

**J. Kysely** - Precipitation extremes in regional climate model simulations estimated by the region-of-influence method

**Di Filippo** - Climate-change induced bioclimatic shifts in Italian beech (*Fagus sylvatica* L.) forests assessed through a tree-ring network crossing the Mediterranean-Temperate biomes

**S. Mathbout** - Study on climate change and its potential impacts on vegetation over last five decades in Syria

**H. Rendell** - Extreme rainfall events: changing magnitudes, frequencies and impacts in the Mediterranean

**P. Sousa** - Links between fire regimes in Iberia and large-scale meteorological variability

**I. Tsanis** - Climate change induced trends on water availability in the Island of Crete, Greece  
**A.M. Ramos** - Evolution of extreme temperatures over Portugal - recent changes and future scenarios

**20:00 Conference Dinner (Grand Hotel Tiziano)**

**Thursday 9 June**

**Session 10: Extremes and impact of climate variability and change**

**Convenors:**

*MC. Llasat* - University of Barcelona, ES

*E. Xoplaki* - Universität Bern, CH

09:00 - 09:15 **MC. Llasat** - University of Barcelona, ES  
*Hydrometeorological Risks evolution in Catalonia (Spain): climate variability and vulnerability*

09:15 - 09:30 **E. Xoplaki** - Universität Bern, CH  
*Large-scale atmospheric circulation driving extreme climate events in the Mediterranean and related impacts*

09:30 - 09:50 **A. Toreti** - Universität Bern, CH  
*Extreme precipitation in the Mediterranean: evolution and related large scale circulation*

09:50 - 10:10 **E. Fischer** - ETH Zurich, CH  
*Consistent geographical patterns of changes in high-impact European heatwaves*

10:10 - 10:30 **A. Iglesias** - Universidad Politecnica de Madrid  
*A protocol for early drought warning systems in Mediterranean countries*

10:30 - 11:00 **Coffee Break**

11:00 - 11:30 **D. Gomis** - Universitat de les Illes Balears, ES & MedCLIVAR book leading authors  
*Mediterranean climate from past to the future: the second MedCLIVAR book*

**11:30 - 13:00 Discussion Panel**

**Convenor:**

*V. Artale* - Italian National Agency for New Technologies, Energy and Sustainable Economic Development, IT

**M. Gacic** - Chair of the CIESM committee on Physics and Climate of the Ocean  
*An observational strategy for the Mediterranean Sea circulation and the MedSHIP programme*

**R. Molinari** - International CLIVAR Project Office, UK  
*The future CLIVAR and WCRP and its potential relation to the next version of MedCLIVAR*

13:00 **Lunch**

14:30-15:00 **Press Conference**

## *Poster List (alphabetical order):*

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1. **T. Agacayak** - The effect of meteorological conditions on PM10 in Istanbul
2. **F.O. Amore** - Coccolithophores response to Nao-like millennial forcing: a time-space reconstruction over the last 30 Ka in the Thyrrhenian sea
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