

PRELIMINARY PROGRAMME:

Sunday, September 14, 2008

Symposium opening

Session dealing with the nature -timing, spatial patterns of change- of major climatic extremes in recent millennia in the Mediterranean region. This would include an assessment of the magnitude, temporal and spatial extent of pluvials, droughts, etc.

Monday, September 15, 2008

Session dealing with specific historical and cultural markers in the Mediterranean region that have plausible or well documented connections to major "anomalous" climatic episodes in the recent millennia.

Tuesday, September 16, 2008

Session devoted to providing a synthesis of papers and other information presented at the symposium. This will involve some panel discussions and plenary discussions to consider future directions and initiatives regarding the nature of climatic changes in the past and an evaluation of the potential impact of anthropogenic climate change in the future.

APPLICATIONS & DEADLINES:

Submission of abstracts should be sent by email to Elena Xoplaki at elena.xoplaki@giub.unibe.ch. Deadline for abstract submissions and application for travel support is May 15, 2008. A registration fee of €100 applies payable in cash on arrival.

LOCATION:

The Symposium will take place at the premises of the National and Kapodistrian University of Athens (www.uoa.gr) in the center of Athens in Greece. Daily flights from Europe and the US are arriving at the Eleftherios Venizelos airport of Athens approx 30km away from the Symposium venue.

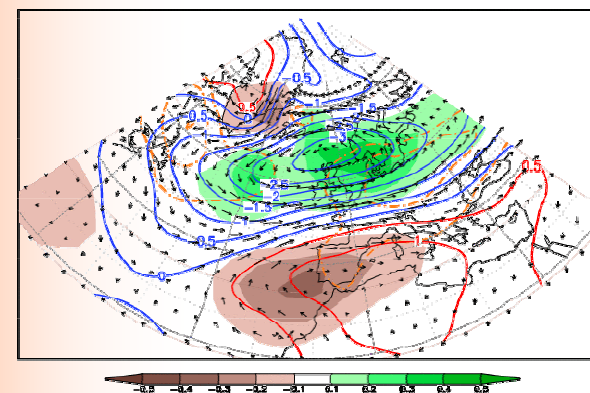
ORGANIZATION AND SUPPORT:

The Symposium is being organized in an interdisciplinary context with attendance by invitation. We will work to obtain travel support. We anticipate approximately 50 people will attend the meeting. The Symposium is organised by ESF-MedCLIVAR, the Mariolopoulos-Kanaginis Foundation and IGBP-PAGES, and it is being hosted locally by the Academy of Athens, the University of Athens and the Mariolopoulos-Kanaginis Foundation in Greece.

Symposium

Climate Extremes During Recent Millennia and their Impact on Mediterranean Societies

National and Kapodistrian University of Athens
Academy of Athens
Athens, Greece
14-16 September 2008



Organizers

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CLIMATE EXTREMES IN THE MEDITERRANEAN

Climatic extremes in the past few thousand years have severely impacted societies throughout the Mediterranean and changed the outcome of historical events in some instances. Most natural disasters involve increased vulnerability to natural hazards as a consequence of human actions preceding such events. The impacts of climatic extremes—droughts, floods, prolonged cold and heat—affect society in a variety of forms—operating through famine, disease, and social upheaval.

High-resolution paleoclimate research using tree rings, tropical corals, speleothems, other natural archives and man-made documentary evidence demonstrates that large-scale climatic phenomena, such as the El Niño-Southern Oscillation, large-scale circulation patterns such as the NAO and other modes of variability on inter-annual to centennial time scales can have profound and widespread effects on the climate of the Mediterranean. The Mediterranean offers a broad spectrum of some yet unexplored documentary information and natural archives making the area ideal for the study of climatic extremes and socio-economic impacts.

Climate model simulations provide evidence of significant multi-decadal to centennial scale climatic variations on large regional scales. These simulated episodes of anomalous climatic regimes are becoming consistent with the paleoclimatic evidence.

Recent studies suggest that the period associated with the so-called Medieval Climatic Anomaly was indeed associated with extended regional anomalies of large magnitude in many parts of the world. Other studies have shown that the transition from the Medieval Climatic Anomaly to the Little Ice Age was one of recurrent extreme climatic conditions on interannual to multi-decadal time scales.

OBJECTIVES OF THE SYMPOSIUM:

The symposium will consider studies focused on significant climatic anomalies in the Mediterranean and will incorporate studies by investigators throughout the region.

It will bring together anthropologists, historians, paleo-climatologists and geologists to examine the available data from well-dated prehistoric/historic cultures and paleo-environmental records in the Mediterranean, with a view toward actively involving researchers from the Balkans, Turkey, Middle East and Northern Africa.

The symposium will extend the results of a recent ESF-MedCLIVAR/PAGES workshop on “Reconstruction of Past Mediterranean Climate” by following up on its recommendations to extend the analysis of climate proxy records while bringing in aspects related to climate impacts as derived from historical and archaeological records.

FIGURE CAPTION:

The figure shows an estimated composite of anomalous boreal winter precipitation (bar graph in mm/day), temperature (dashed orange line, in °C), sea level pressure (contours in mb) and near surface geostrophic wind anomalies (arrows) during Medieval times. The composite was produced using Proxy Surrogate Reconstruction (PSR, Graham et al., 2007) in which the temporal order of coupled model output is constrained by the agreement between climate proxy data (Morocco drought severity reconstruction, Austrian Alps speleothem-based winter temperature reconstruction and northern Scotland speleothem-based reconstruction of the temperature | precipitation (T/P) ratio) and corresponding data drawn from the coupled model from a 1150-year radiatively forced simulation with NCAR CCSM (Ammann et al., 2007). The composite map shown here is the difference between the average of the PSR reconstruction for AD 1049–1300 and the average for AD 1400–1800, thus it depicts an estimate of anomalies during Medieval times. The results indicate that Medieval winters were dominated by a positive NAO-like pattern bringing wetter conditions to northwest Europe (up to 115% of post-Medieval times precipitation); values shown on the figure are mm/day), drier conditions in Iberia and Morocco (about 60% of post-Medieval times values), and warmer conditions in central and northern Europe. The maximum changes depicted in near-surface westerlies across western Europe are approximately 1.4 m/s compared with typical mean values of 9–10 m/s.

SUPPLEMENTARY INFORMATION:

The Symposium is interdisciplinary and welcomes the participation of paleo-climatologists, anthropologists, geologists, archaeologists, and historians working in the Greater Mediterranean Region to address the following topics:

- Explore new proxy sources from documentary and natural archives in the Greater Mediterranean Region;
- Test existing hypotheses about environmental change thought to have had pivotal roles in shaping societal responses, possibly including cultural collapses and/or political instability;
- Examine and synthesize high-resolution paleorecords to define periods of persistent drought and floods that could be independently or by means of teleconnections related to large-scale modes of variability such as NAO/AMO, PDO/ENSO, etc. for as long as the proxy records permit it;
- Examine some specific historical and cultural shifts in light of extreme annual, decadal, and multi-decadal climatic regimes—droughts, pluvials, extended cold or warm periods in the Greater Mediterranean Region, with the highest dating accuracy and precision possible. Evaluate the imprint of these drought events in multiple historical and paleoclimate proxies;
- Examine the large multi-decadal to centennial climate shift that took place in the context of the transition from the Medieval Climatic Anomaly (~ 900–1300 AD) to the Little Ice Age (~1300–1850 AD).

DELIVERABLES:

Expected outcomes from the symposium include:

- explicit recommendations for development of methodologies that would promote the interactive use of paleoclimate and cultural/archaeological information in interpreting significant cultural changes in the Greater Mediterranean Region that are thought to be associated with environmental changes;
- a summary and dissemination of symposium abstracts and proceedings, including reports in the newsletters of ESF and PAGES;
- the development of future collaborative research projects;
- a possible special issue of an interdisciplinary journal or a book volume containing key contributions from among the participants; and
- collection of metadata of paleoenvironmental datasets from the Greater Mediterranean Region and archiving in the PAGES-MedCLIVAR database.