

# *Climate and Societies in the Mediterranean during the Last Two Millennia*

## *Current State Of Knowledge and Research Perspectives*

**March 8 - 9, 2017, Aix-Marseille University, Aix-en-Provence**  
**(Conference room Georges Duby, MMSH)**

### **MARCH 8**

9:30 **Opening:** Sophie BOUFFIER, MMSH director/ Xavier DAUMALIN, Director of TELEMME Lab/ Joël GUIOT, Director of Labex Ot\_Med/ Brigitte MARIN, Director of LabexMed

9:45 **General Introduction:** Nicolas MAUGHAN/ Kevin POMETTI

### **Session I**

## ***How To Integrate Solar And Volcanic Forcing In Studies Of Historical Climate-Society Interactions?***

**Chair:** Martin BAUCH (Leibniz-Institut für Geschichte und Kultur des östlichen Europa, Germany)

10:00 *Volcanism and Variability: The Volatile Nile as Driver of Revolt and Socioeconomic Stress in Ptolemaic Egypt, 305-30 BCE*

Joseph MANNING (Yale University, USA), Francis LUDLOW (University of Dublin, Ireland) *et al.*

10:30 *Climate and societal impacts of a volcanic double event at the dawn of the Middle Ages*

Matthew TOOHEY (GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany)

11:00 *Coffee break*

11:15 *Reassessing the climatic impacts of the 1257 eruption in Europe and in the Northern Hemisphere using historical archives and tree rings*

Sébastien GUILLET *et al.* (University of Bern, Switzerland)

11:45 *The 1430s: A period of extraordinary internal climate variability during the early Spörer Minimum and its impacts in North-western and Central Europe*

Chantal CAMENISCH (University of Bern, Switzerland)

12:15 **Questions & discussion**

12:40 **Lunch**

## Session II

### ***Sources And Methodologies For Studying Past Climate History: From Natural To Textual Archives***

**Chair: Nicolas MAUGHAN** (Aix-Marseille University, France)

**14:00** *Towards a methodology for reconstructing outstanding extreme events. The example of 1540*

**Christian PFISTER** (University of Bern, Switzerland)

**14:30** *Multidisciplinary approach to climatic reconstruction. Present research and potentialities in Mediterranean countries (Spain) focusing on hydroclimatic extremes*

**Mariano BARRIENDOS** (University of Barcelona, Spain)

**15:00** *The earliest meteorological observations: Florence and Vallombrosa in the Medici Network (1654-1670)*

**Chiara BERTOLIN** (Norwegian University of Science and Technology, Norway) & **Dario CAMUFFO** (National Research Council of Italy)

**15:30** *Coffee break*

**15:45** *The role of textual archives and first instrumental records to detect optimal periods for vector-borne diseases in late 18<sup>th</sup> century Catalonia*

**Kevin POMETTI** (Aix-Marseille University, France)

**16:15** *Drought and Crisis in the Classical Ottoman Empire: New Evidence, Confirmation, and Revisions*

**Samuel WHITE** (The Ohio State University, USA)

**16:45** *The Dantean Anomaly project: A comparative approach to a period of increasing extreme events and their societal impact*

**Martin BAUCH** (Leibniz-Institut für Geschichte und Kultur des östlichen Europa, Leipzig, Germany)

**17:15** Questions & discussion

## MARCH 9

**9:00** **Poster session\* (60 min)**

### Session III 1<sup>st</sup> part

### ***Climate As Catalyst For Subsistence Crises, Epidemics And Violence***

**Chair: Isabelle RENAUDET** (Aix-Marseille University, France)

**10:00** *Late Holocene delta geomorphology and ancient coastal settlements: from Taman Peninsula to the Balearic Islands*

**Mathieu GIAIME et al.** (Aix-Marseille University, France)

**10:30** *Coffee Break*

10:45 *Famine, migrations and conflicts 3200 years ago: did climate have an influence on social upheavals?*

David KANIEWSKI *et al.* (University of Toulouse, France)

11:15 *Climate change and the Eastern Roman Empire. Learning from the complex societies of the past*

Adam IZDEBSKI (Jagiellonian University, Poland)

11:45 Questions & discussion

12:30 Lunch

### Session III 2<sup>nd</sup> part

Chair: Kevin POMETTI (Aix-Marseille University, France)

14:00 *War, economic crisis and plague: teleconnections between Arid Central Asia and the Mediterranean in the thirteenth and fourteenth centuries*

Bruce CAMPBELL (Queen's University Belfast, Northern Ireland, UK)

14:30 *Droughts and Floods in the Spanish Mediterranean during the Little Ice Age. Thoughts and Proposals*

Armando ALBEROLA (University of Alicante, Spain)

15:00 Coffee Break

15:15 *Socio-economic Resilience to Droughts and Energy Transition in Northwestern Mediterranean during the Dalton Minimum*

Nicolas MAUGHAN (Aix-Marseille University, France)

15:45 Questions & discussion

16:00 *Conclusion* Christian PFISTER (University of Bern, Switzerland)

16:30 End of the meeting

### Posters\*

1. *A multi-secular database (A.D. 1300-2000) on the historical flood variability in the Lower Rhone Valley*

Georges PICHARD *et al.* (Aix-Marseille University, France)

2. *Historical climate Data Rescue in the Mediterranean area at Météo-France*

Sylvie JOURDAIN & Émeline ROUCAUTE (Météo-France, France)

3. *Temperature observations in Bologna, Italy, from 1715 to 1815: three centuries of changing climate and methodological procedures to recover and analyze early instrumental series*

Chiara BERTOLIN *et al.* (Norwegian University of Science and Technology, Norway)

4. *Climate, environment and public health in Catalonia. Endemic and epidemic malaria (1750-1850), from sanitarian policies to environmental issues*

Kevin POMETTI (Aix-Marseille University, France)

5. *Recent hydrological variability of the Moroccan Middle-Atlas Mountains inferred from sedimentological and geochemical analyses of lake sediments*

Guillaume JOUVE *et al.* (Aix-Marseille University, France)

**6. *Oxygen isotopes from Sudanese mummies as natural archives for reconstructing long-term and seasonal Nile river fluctuations and past climate in Northeast Africa (3700-500 B.P.)***

**Céline MARTIN *et al.*** (Aix-Marseille University, France)

**7. *Assessment of post-industrial sea-level rise acceleration along the Mediterranean coastlines***

**Matteo VACCHI *et al.*** (Aix-Marseille University, France)

**8. *Geoarchaeology of the Danube delta and palaeo-environment of ancient settlements (Histria, Enisala, Babadag and Halmyris)***

**Alexandra BIVOLARU *et al.*** (Aix-Marseille University, France)

**9. *The ancient harbors of cap Bon (Tunisia): geomorphology, climate context and recent discoveries***

**Soumaya TRABELSI *et al.*** (Aix-Marseille University, France)

**Organizing committee: Mr. Nicolas MAUGHAN (AMU, I2M, ECCOREV)**

**Mr. Kevin POMETTI (AMU, TELEMME, LabexMed)**

**Mr. Joël GUIOT (AMU, CEREGE, Labex OT\_Med, ECCOREV)**

**Mrs. Isabelle RENAUDET (AMU, TELEMME)**

**Mrs. Agnès RABION (AMU, TELEMME)**

**Scientific committee: Mr. Nicolas MAUGHAN (AMU, I2M, ECCOREV)**

**Mr. Kevin POMETTI (AMU, TELEMME, LabexMed)**

**Mr. Joël GUIOT (AMU, CEREGE, Labex Ot\_Med, ECCOREV)**

**Mrs. Isabelle RENAUDET (AMU, TELEMME)**

**Mr. Georges PICHARD (AMU, CEREGE)**

**Mr. Wolfgang CRAMER (AMU, IMBE)**

**Mr. Armando ALBEROLA (University of Alicante, Spain)**

**Mr. Dario CAMUFFO (CNR, Padova, Italy)**

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**Climate History Network [www.climatehistory.net/](http://www.climatehistory.net/)**

**Contact/information: Nicolas MAUGHAN [nicolas.maughan@gmail.com](mailto:nicolas.maughan@gmail.com) &  
Kevin POMETTI [kpometti@gmail.com](mailto:kpometti@gmail.com)**

**Aix-Marseille University  
Mediterranean House of Humanities, conference room George Duby  
5 rue Château de l'Horloge  
13090 Aix-en-Provence, France**

This two-day international conference aims to highlight recent and challenging interdisciplinary studies dealing with complex historical climate/society interactions in Mediterranean during the last two millennia. Indeed, although issues concerning present and future climate change-related impacts for Mediterranean societies are many and varied, past climatic extremes, like drought episodes, have caught the attention of archaeologists, climatologists, modelers and historians for several decades. This intriguing relationship mainly results from devastating temperature and/or hydroclimatic effects on the balance between climate and natural or agricultural resources essential to the wellbeing of past urban or rural societies. Coincident economic, political and societal consequences to rapid climate shifts, ranging from inter-annual extremes to century-long trends, have been reported in various biogeographic zones on almost all areas of basin.

The study of these existing connections can help in better understanding the role played by past climatic events in the eruption of regional conflicts, in forced migration and displacement of people, in periodically appearing infectious disease outbreaks or in subsistence crises like food shortages and famines. Similarly, it seems necessary to identify and analyze socio-economic and technological responses (e.g. water supply systems) together with mitigation and general adaptation strategies, insofar as they existed, to cope with climate change. Recently, many authors have highlighted the role and the strength of interdisciplinary efforts to improve knowledge on past, present and future interactions between climate variability and human society and were aware of the importance of judiciously linking historical and palaeoclimatological evidence, for which Europe, but also Middle East and Asia, offers a particularly rich record.

Moreover, this will be an opportunity to make an overview on current knowledge about available historical climatic data from both textual archives and first instrumental records, and to see how gathered informations match with those from proxy records (e.g. tree-ring data) over the period in which they overlap. Major questions about extraction and long-term safeguarding of data (role and value of creating open-access climate database systems), evaluation of quality of informations, statistical methods and data processing according to the nature (e.g. drought indices constructed from rogation/procession ceremony records) and origin of archives will also be discussed.



*The eruption of Mount Vesuvius*  
(Joseph TURNER, between 1817 and 1820)