XXIth conference of the GMPCA

April 18-21 - 2017 - Rennes (France)

Call for abstract - first circular

Since its foundation in 1976, the French association for archaeometry: GMPCA (*Groupe des Méthodes Pluridisciplinaires Contribuant à l'Archéologie* - http://gmpca.fr/) works to promote archaeometry in France and worldwide. Since 1977 the GMPCA edits a scientific journal: *ArchéoSciences-Revue d'Archéométrie* (previously entitled *Revue d'Archéométrie*) and organises a biannual conference. The first edition was organised in Rennes, where 20 years after in 1997 the conference was again organised.

For its 40 years, the GMPCA conference will be again -arranged in Rennes for its XXIth edition from **18 to 21 April 2017**. Organised by the laboratory *CReAAH* UMR 6566 (*Centre de Recherches en Archéologie, Archéosciences, Histoire*), the conference includes six thematic sessions which will welcome all the researches currently developed in the field of archaeometry.

The conference "**Archéométrie 2017**" will be located at the Beaulieu campus of the University of Rennes I. The city was known during at Roman times under the name of "Condate", then becoming the capital of the Bretagne region, Rennes will welcome you with its rich architectural heritage and its festive evenings.

Six thematic sessions and a round-table are already planned, together with some historiographical introductive conferences jointly proposed by the network CAIRN and the GMPCA. According to the submitted abstracts, the proposed sessions will be prone to some adjustments.

- Session 1- MASTERING TIME: DATING AND CHRONOLOGIES (coord : V. Bernard)
- Session 2- LANDSCAPES UNDER INFLUENCES ? SOCIETIES, ENVIRONMENTS, CLIMATES (coord : Ch. Leroyer)
- Session 3- TECHNIQUES, MATERIALS, ENERGIES, PRODUCTIONS. (coord. : B. Gehres, C. Le Carlier, M. Guiavarc'h, R. March)
- Session 4- FACING THE SEA: LITTORAL ENVIRONMENTS (ESTUARIES, COASTS, ISLANDS, ...) AND SEA PRODUCTS (coord : C. Dupont)
- Session 5- CREATING KNOWLEDGE IN BUILDING ARCHAEOLOGY: MATERIAL ANALYSES, SURVEYS, 3D MODELS… (coord : J.-B. Barreau)
- Session 6- MODELLING AND NUMERICAL METHODS IN ARCHAEOLOGY (coord : R. March)
- Round-table- MANAGEMENT AND OPERATION OF ARCHAEOMETRIC COLLECTIONS AND DATA: WHICH CHALLENGES?

Informations: http://gmpca2017.sciencesconf.org

Organising committee

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- Francis Bertin (CNRS)
- Annie Delahaie (CNRS)
- Catherine Dupont (CNRS)
- Benjamin Gehres (postdoc)
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Thematic sessions

Session 1 - MASTERING TIME: DATING AND CHRONOLOGIES

Challenges faced by chronometric approaches aimed since their origin to:

- improve dating performances and precision
- reduce amount of needed sample
- extend calibration curves to older periods or poorly referenced areas

This wish for better performances is pushed among others by increasing requirements of end-users: archaeologists, historians or even heritage managers.
With the rise of the Bayesian statistics, the combination of results from different methods (radiocarbon, dendrochronology, archaeomagnetism, thermoluminescence…), field data (chrono-stratigraphy, typo-technologies…) and sometimes historical archives, opens innovative chronological modelling. Thus the promising and fascinating prospects could outstrip the methodological limits of each discipline. These are a few tracks that could be addressed in this session.

Keywords: Dating methods, chronological modelling, chronological calibration, chronological repositories.

Session 2 - LANDSCAPE UNDER THE INFLUENCE? SOCIETIES, ENVIRONMENTS, CLIMATES

The aim of this session is to consider current environments as a legacy of a long interaction between past human societies and their environments. An integration of archaeological, historical and archaeometrical data must be used in conjunction to further contribute to a better understanding of landscape dynamics. It is also useful to distinguish the role played by the climate (climate determinism) and by societies (anthropogenic determinism) on the landscape molding, e.g. human management to increase productivity.
This session will also include research based on remote sensing techniques (geophysics, LIDAR) with a focus on interactions between human activities and landscapes.

Keywords: archaeobotany, zooarchaeology, geoarchaeology, geochemistry, geophysics.

Session 3 - TECHNIQUES, MATERIALS, ENERGIES, PRODUCTIONS

Archaeomaterials hold a special place in the field of archaeometry at the crossroad for understanding the history of past societies and the evolution of techniques. Data acquired over the years, development of analytical techniques and interaction with experimental archaeology now allow to conduct comparative studies leading to a better recreation of the *chaînes opératoires*, from manufacturing to shaping or use of objects, as well as to a better understanding of energy operation systems. Recent studies have also focused on material provenance through elemental and isotope analysis to reconstruct exchange networks and their dynamism. This session will cover all the archaeometric approaches, whether analytical or traceological, of inorganic archaeological materials, such as ceramic, glass, metal, rocks and pigments, as well as organic materials, such as wood and cooking residues, or organo-mineral materials such as bone, ivory and shells. Papers on new approaches, techniques and research methods will be privileged as will be the ones about materials seldom studied. Papers based on synthesis studies will also be very welcome.

Keywords: archaeomaterials, raw materials, characterisation, techniques, experimental archaeology, chaînes opératoires, traceology.

Session 4 – FACING THE SEA: LITTORAL ENVIRONMENTS (ESTUARIES, COASTS, ISLANDS...) AND SEA PRODUCTS

Various scientific fields are involved for studying past human occupation in relation to coastal areas. Some of them try to describe environments under marine influence, others to identify the diversity of exploited marine resources. Geophysics, geomorphology, and biological markers allow the description of coastal landscapes (estuary, delta, coast, islands…). Most of these studies are implemented on Geographic Information Systems (GIS) to model these data in time and space. Archaeological sites and artefacts report the human activities and settlements in these changing environments. Human or animal food, shipping, fishing, collecting shellfish, algae, wood, as the production of valuable artefacts (adornments, salt, tools…) illustrate activities and productions diversity. These are understood globally by various disciplines as zooarchaeology, anthracology, carpology, geochemistry, traceology, etc...

Keywords: zooarchaeology, archaeobotany, geomorphology, geochemistry, geophysics

Session 5 - CREATING KNOWLEDGE IN BUILDING ARCHAEOLOGY: MATERIAL ANALYSES, SURVEYS, 3D MODELS…

In building archaeology, each detail (materials, settling, decors, etc.) is prone to bring information on the site organisation itself (conception, elaboration, technical choices, actors, time) as well as on the socio-economical context (raw material procurement, costs, etc). Thanks to the approach of building archaeologists, stigmas from human intervention, ageing or natural disasters can be distinguished.
Scans and 3D restitutions of buildings support field studies and laboratory analyses are now commonly included in archaeological practices. These methods lead to understand in more details aspects characteristics of building, materials choices or the management of mechanical constraints for instance. The current trend is to fuel the archaeological reasoning by the 3D models themselves and the qualitative and quantitative data generated (volumes of stones, mortars, estimation of working time, etc.). This session is related to all the aspects regarding buildings and constructions: data acquisition, inferences on construction functioning and evolution of built structures.

Keywords: architecture, building archaeology, material analyses, scan, 3D models

Session 6 - MODELLING AND NUMERICAL METHODS IN ARCHAEOLOGY

Numerical methods and softwares contribute to the reconstitution of systems from the past at different scales. It allows the proposition of models for diversified processes and systems, but also the possibility to simulate their dynamic to explore hypotheses on their functioning.
These numerical approaches are used to reconstitute artefacts, structures and buildings, complementing significantly the available information. Virtual reconstruction allows the integration of new dimensions (volumes and duration by temporal reasoning), intrinsic properties but also some physical or physico-chemical processes (material fatigue, cinematic, heat transfer) hardly achievable by conventional methods. It finally allows the simulation of natural of anthropogenic processes (accumulations, dispersions, transformations), or even some cultural or social processes involved in theses systems.

Furthermore, the use of agent based modelling can be used to perform some tasks: recognise, rebuild (puzzles), measure, classify, order, structure. Through the virtual agent learning, information related to various supports (artefacts, images or representations) can be animated for leading to their automated classification or recognition. The same methods can also simulate revolutions of the social behaviour of past human groups as: management of space and resources, socio-ecological dynamic, the analysis of decision making, production or reproduction modalities, or cultural changes. In fact these methods contribute to the data analysis in order to establish the nature of their relations and their significance. This session will be dedicated to these different methodological approaches, their use and their perspectives.

Keywords: numerical methods, simulations, models, artificial intelligence, management and operation of numerical data bases

Table Ronde - MANAGEMENT AND OPERATION OF ARCHAEOMETRIC COLLECTIONS AND DATA: WHICH CHALLENGES?

The achaeometrical analyses systematically lead to the establishment of “analytical collections”: samples, reference collections, data bases… which can be considered as a part of the archaeological heritage. These collections raise the question of their storage, their management, their preservation and their highlighting/sharing. Understanding and analysis of the heritage nature of such collections involves predicting behaviours and resources tailored for their development. The aim of this round-table is to identify and discuss the various approaches practiced to establish an assessment of the current situation but also a prospective view regarding the management and the enhanced value of archaeometrical data and collections.

Keywords: management, conservation, enhanced value, data networking

Call for abstract

Abstracts for oral or poster communication (with a flash presentation of 3 min) should be submitted before **October 30th 2016 (included)** by E-mail to: archeometrie-rennes2017@univ-rennes1.fr using the joined template.

Accepted languages: French, English, Spanish

Registration

Registration and payment are performed on-line at: http://gmpca2017.sciencesconf.org
The registration prices include the lunches.

Prices until January 30th 2017:
150 € (professionals non GMPCA members)
120 € (professionals GMPCA members)
80 € (students)

Prices after January 30th 2017:
180 € (professionals non GMPCA members)
150 € (professionals GMPCA members
100 € (students)

Important dates

October 30th 2016: deadline for abstract submission and pre-registration
December 15th 2016: second circular
End of January 2017: acceptance of abstracts and oral /poster selection
March 2017: third circular (detailed program)
April 18-21 2017: conference

Abstracts – Template

See the attached file (pre-registration form and abstract template)

Abstract and pre-registration form should be sent to: archeometrie-rennes2017@univ-rennes1.fr