Digital Archaeology:

Quantitative approaches, spatial statistics and

socioecological modelling

International Colloquium on Digital Archaeology in Bern
4th – 6th February 2019, University of Bern, Switzerland

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SCOPE OF THE COLLOQUIUM

Recent advances in computer and environmental science, climate modelling and other disciplines as well as the availability/processability of (openly shared) big data have triggered fundamental changes in research over the last decades and expanded the toolbox of archaeological methods. While traditional methods (i.e. typochronology, mapping sites) remain important and continue to be used to study material culture complexes and past human societies over time and space, novel quantitative approaches based on spatial analysis, however, are rapidly gaining momentum. The archaeological community has recognized their importance to support and add value to archaeological data as their contextualisation and interpretation. The development of highly specialized plugins and packages in open-source frameworks like R, QGIS and SAGA GIS has enabled researchers to process archaeological data using a much wider range of statistical methods, significantly advancing our ability to understand the spatio-temporal dynamics of past human societies. Tools like unsupervised classification (i.e. clustering and principal component analysis) and machine learning (i.e. regression trees and neural network), which few years ago were only available to statisticians and computer scientists, are rapidly adopted by archaeological researchers.

This workshop will provide a forum to present innovative ideas for applying quantitative approaches to better understand the dynamic of human-human and/or human-environment relationship. The aim is also to initiate a dialogue within the archaeological community on the interaction of different approaches to spatial modelling and classification techniques. This event addresses colleagues who would like to exchange their ideas for the use of these innovative tools and demonstrate their relevance for archaeological applications in research, heritage management practice, theory building and construction of narratives/models of (pre-)history.

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FORMAT AND SESSIONS

The colloquium will consist of three main sessions dealing with the topics...
• quantitative approaches in spatial and non-spatial archaeological case studies
• data mining and new techniques of supervised and unsupervised pattern recognition
       in archaeological and environmental datasets
• applications and approaches to socioecological modelling on different scales
       and temporal resolution

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CONFIRMED SPEAKERS

Juan A. Barceló; Universitat Autònoma de Barcelona
Michael Barton; Arizona State University
Mikhail Kanevski; University of Lausanne
Oliver Nakoinz; University of Kiel

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ABSTRACT SUBMISSION / CALL FOR PAPERS

Oral and poster presentations are welcome. Accepted oral presentations should not exceed 20 minutes. Posters should be submitted in A0 size. The colloquium language is English. Abstracts must not exceed 500 words.

Young scholars are particularly encouraged to apply and participate in the discussion, which will be of growing importance in the future of archaeological research.

Online submission will be open until **25 November 2018**. It includes a basic registration.

www.oeschger.unibe.ch/services/events/conferences/digital_archaeology/submission_registration

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CONFERENCE REGISTRATION

The fee for conference registration includes workshop registration, materials, coffee breaks, and the conference dinner.
Conference registration fee for presenting participants: 60 CHF
Conference registration fee for non-presenting participants: 100 CHF
BA and MA students are exempt from the registration fee.

Online registration and payment by credit card will be open until **18 January 2019**.

There will be a grant to support travel and accommodation expenses for young scientists, i.e. BA / MA / PhD students and early Postdocs, presenting a talk or poster at the colloquium

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R WORKSHOP

On the third day of the colloquium, 6th February 2019, participants will have the opportunity to join a R workshop where they will work on real archaeological data and learn the application of advanced machine learning techniques.

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PUBLICATION

The publication of the colloquium's contributions is planned. Deadline for the paper submission will be 31st July 2019.

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GENERAL INFORMATION

The colloquium will take place at the University of Bern, Switzerland.
For further and updated information please visit

www.oeschger.unibe.ch/dab2019

We look forward to meeting you in Bern!

Maria Elena Castiello, Julian Laabs and Martin Hinz
on behalf of the Organization Committee / Institute of Archaeological Sciences Univ. Bern

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The workshop is supported by:

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