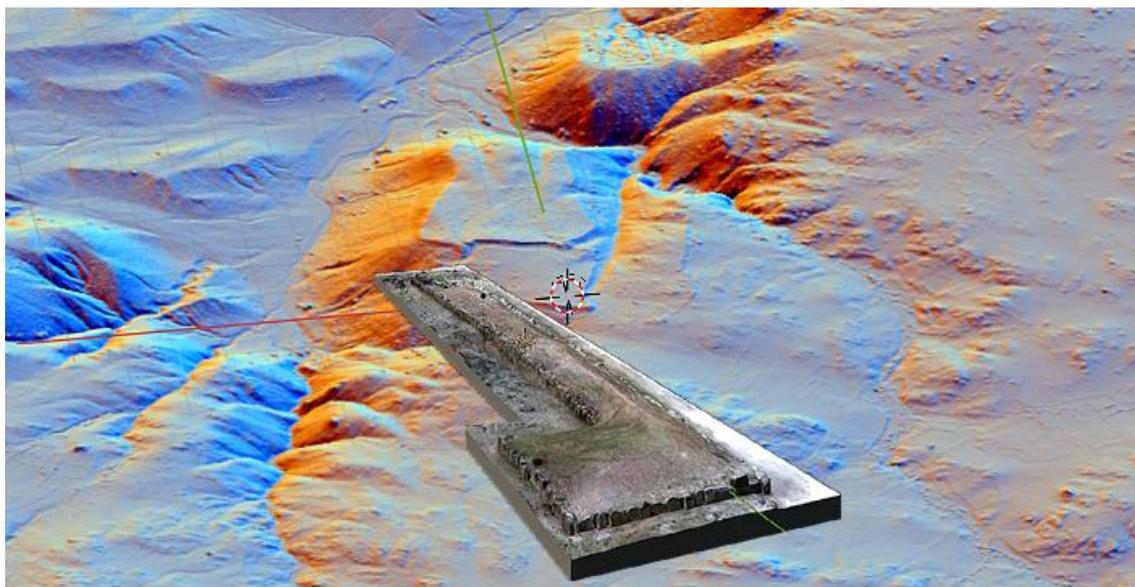


The “Metal Ages in Europe” Commission of
The International Union of Prehistoric and Protohistoric Sciences (UISPP)

Scanning the hidden.

LiDAR and 3D technologies applied to architecture research in the archaeology of the Metal Ages

6th-9th June 2020 (Ávila, Spain)



PROVISIONAL PROGRAMME OF THE CONGRESS

SATURDAY 6TH – TUESDAY 9TH JUNE 2020

- **SATURDAY 6TH JUNE, Torreón de los Guzmanes.**

18:00 Welcome and Introduction. Welcome by the local authorities and the President of UISPP Scientific Commission “Metal Age in Europe”, Dr. Dirk Brandherm (Queen’s University of Belfast)
19:00 Opening Keynote Speech. Dr. Marta Díaz-Guardamino (University of Durham, R.U.)
20:00 General information
20:30 Spanish wine

- **SUNDAY 7TH JUNE, FIELD TRIP TO “EL RASO DE CANDELEDA”¹**

09:00 Departure at the Centro de Recepción de Visitantes, Avenida de Madrid.
11:00 Ethnographic Museum of Candeleda
12:00 Archaeological Museum of El Raso
13:00 Lunch at Candeleda village
15:00 Guided visit to the *oppidum* of El Freillo and surrounding country.
18:00 Return to Ávila

¹. This visit is funded by the Diputación Provincial de Ávila, but it is necessary to pay an additional contribution of 5 € per person. Sites are limited to the first fifty inscriptions.

• MONDAY 8TH JUNE, PALACIO DE LOS SERRANO

1st Line of research

- 09:00 Keynote talk: Applications of digital techniques to architectural features in Archaeology (30')
Luis Berrocal-Rangel (Universidad Autónoma de Madrid, Research team OPPIDUAM)
- 09:30 1st submission (20')
- 09:50 2nd submission (20')
- 10:10 3rd submission (20')
- 10:30 Discussion (30')
- 11:00 Café/Tea break (provided).
- 11:30 4th submission (20')
- 11:50 5th submission (20')
- 12:10 6th submission (20')
- 12:30 Discussion (30')

Lunch (available locally)

2nd Line of research

- 15:00 Keynote talk: Applications of digital techniques to archaeological objects in Architecture (30')
Juan Francisco Blanco García (Universidad Autónoma de Madrid, Research Team OPPIDUAM)
- 15:30 7th submission (20')
- 15:50 8th submission (20')
- 16:10 Discussion (20')
- 16:30 Coffee/Tea break (provided)
- 17:00 9th submission (20')
- 17:20 10th submission (20')
- 17:40 Discussion (20')
- 18:00 Posters (60')
- 19:00 Dinner buffet, provided by the Ávila Town Council.
- 21:00 Guided visit of the wall fortification and palaces of Ávila

• TUESDAY 9TH JUNE, PALACIO DE LOS SERRANO

3rd Line of research

- 09:00 Keynote talk: Applications of digital techniques in the Museology of the archaeological Architecture (30')
Raquel Castelo Ruano (Universidad Autónoma de Madrid, Research Team OPPIDUAM)
- 09:30 1st submission (20')
- 09:50 2nd submission (20')
- 10:10 3rd submission (20')
- 10:30 Discussion (30')
- 11:00 Coffee/Tea break (provided)
- 11:30 4th submission (20')
- 11:50 5th submission (20')
- 12:10 6th submission (20')
- 12:30 Discussion (30')

Lunch (available locally)

4th Line of research

- 15:00 Keynote talk: Applications of digital techniques in Archaeometry (30')
Rosario García-Giménez and Raquel Vigil (Universidad Autónoma de Madrid, Research Team OPPIDUAM)
- 15:30 7th submission (20')
- 15:50 8th submission (20')
- 16:10 Discussion (20')
- 16:30 Coffee/Tea break (provided)
- 17:00 9th submission (20')
- 17:20 10th submission (20')
- 17:40 Discussion (20')
- 18:00 Conclusions (60')
- 21:00 Conference dinner²

². Conference dinner will be offered by the Diputación de Ávila. Inscription is mandatory and it is necessary to pay an additional contribution of 5 € per person.

- The languages of the congress are English and French, as well as Spanish because it is the host's country language.
- Participants must send the registration form, incorporated in the congress website (<https://eventos.uam.es/go/DigitalArchaeologyCongressUISPP>) and the payment receipt to the same website, **before 30th March 2020**, even if they have not submitted papers or posters. When proposals were submitted, deadline is **February 29, 2020**.
- Registration to the congress must be made through the website's application with the conference fee of 50 € per person. Updated members of U.I.S.P.P. will have a reduced fee of 50 %. Funds raised will be spent in complementary activities of the congress and if there are any funds remaining, they will be entered into an account opened by the Commission.
- The Commission of the U.I.S.P.P. will give an attendance certificate after the congress to every participant who has personally made the registration formalities.
- Submitted proposals of papers and posters will be evaluated by the Scientific Council for the acceptance. The number of papers is limited to 20 contributions. Therefore, some accepted proposals can be suggested to be presented as posters. The Scientific Committee will communicate the acceptance or the rejection before **30th March 2020**.
- Summaries of accepted papers and posters will be published as pre-proceedings before the congress.
- The congress organization, with funds of the Spanish Ministry of Science, Innovation and Universities, for the project of research *The Protohistoric Architecture at the Western Plateau. Archaeometry and Archaeotecture applied to the building heritage of the Vettones hillforts (HAR2016-77739-P)*, will print the proceedings of the congress in an international series with indexed impact, according to the agreements signed by the U.I.S.P.P. Texts must be presented through the congress' website before **September 1st, 2020**, following the guidelines available on the congress' website.

Organising Committee (Universidad Autónoma de Madrid): Luis Berrocal-Rangel; Francisco Blanco; Raquel Castelo; Rosario García-Giménez; Raquel Vigil de la Villa; J. Francisco Fabián García (Junta de Castilla y León).

Secretariat: Lucía Ruano; Gregorio Manglano y Consolación González-Casarrubios (Universidad Autónoma de Madrid); Gadea C. Cabanillas (SRA Bretagne, Ministère de la Culture, France); Mario Ramírez (University of Portland, Oregon, USA).

Scientific Committee: Jesús R. Álvarez-Sanchís (Universidad Complutense de Madrid); Dirk Brandherm (Queen's University of Belfast, U.K.); Davide Delfino (Ministero dei Beni e delle Attività Culturali e del Turismo, I.); Marta Díaz-Guardamino (University of Durham, U.K.); Manuel Fernández-Götz (University of Edinburgh, U.K.); Alberto J. Lorrio (Universidad de Alicante); Victorino Mayoral (CSIC – Instituto de Arqueología de Mérida, E.); Pierre Moret (Université Jean Jaurés, Toulouse, F.); Ian Ralston (University of Edinburgh, U.K.); Gonzalo Ruiz Zapatero (Universidad Complutense de Madrid); (Raquel Vilaça (Universidade de Coimbra, P.) ; Ángel Villa Valdés (Principado de Asturias, E.).

ÁVILA is a Spanish town, that is located at the centre of the Spanish plateau in a height of 1131 m. For that reason, the city has a continental Mediterranean climate, with clear mountain influences that facilitate mild temperatures, with averages of 17.4º C. during the month of June, and the absence of rainfall. The city, with 60.000 inhabitants, provides all service of a medium town, well equipped with commercial, touristic and sportive infrastructures. Ávila is a privileged site regarding cultural offerings, with a huge artistic, cultural and historic heritage (<http://www.avila.es/>; <https://es.wikipedia.org/wiki/Ávila>).

Ávila was appointed as “World Heritage City” in 1985. Therefore, it was one of the first Spanish cities to receive this recognition, like Santiago de Compostela, Segovia, Toledo, and Salamanca. The reasons are clear: the town has one of the best-preserved historic town centres in Europe, mainly inside the famous wall fortification, built in the 12th century AD, with more than 2.5 km of length and 87 towers. Also, this town centre has a great number of Medieval palaces, such as Los Serrano, and churches and monasteries, in addition to a splendid fortified gothic cathedral. There are several museums, interpretation centres, archaeological remains and monuments, such as the well-known Iron age sculptures of bulls and boars called “verracos”. All of them mean an exceptional ensemble of a city that was founded by Roman and Celtic peoples around the 1st century B.C. Ávila is, also, the town of Santa Teresa de Jesús, one of the greatest leading figures of the Christianity and visitors can find the Saint’s traces in all the streets of the town, full of places that carry them to the era of Santa Teresa during the midst of the 16th century.

There is a great touristic offering at Ávila: restaurants, coffees, snack-bars, pubs and hotels. The town has seven four stars hotels and near one hundred hotels of all the categories, thereby ensuring a competitive price range (<https://www.avilaturismo.com/es/recursos/alojamientos?start=90>). In addition to this, Ávila is connected by one good highway (AP-6) and two motorways (A50 and A51), that communicate the town with the main cities of Central Spain, including Madrid, in less of one hour. There is a railway from Madrid (local line’s station of Villalba). All of them offer complete and efficient connectivity.

The congress organizing committee recommends the following hotels, all of them located in the old quarter of the town, within five minutes walking from the conference centre and with very competitive prices (approx.> 30 <70 € / p):

Palacio de los Veladas, 4*, <https://www.hotelesvelada.com/>; Hotel Las Leyendas, 3*, www.lasleyendas.es; Hotel El Rastro, 3*, www.elrastroavila.com; Hotel Palacio de Monjaraz, <http://www.palaciodemonjaraz.com>.



Congress themes

Digital technologies are giving impressive results in museographic interpretations of archaeological remains, thanks to 3D models of buildings and artefacts. Without demeaning “old-style” wooden and cardboard models, such as the wall of the Heuneburg IV, the newest 3D information platforms provide very stunning results, full of colours, complex in details, and deeper in three-dimensional discourses like never before. Compared to the amount of time, ability, raw material and research spent in conventional models, 3D printers can produce physical models in a cleaner, faster and cheaper way. However, such attractive discourses are usually developed over weak probative knowledge bases, where stratigraphy and archaeological context play only a minor role. Although museographic illustrations should never be used without publishing their research-based principles, these are generally not relevant to business or political interests. For this reason, 3D information displays have become a very useful tool to enrich past realities, despite a complexity that often makes archaeologist wonder if they have to be prehistorians or software specialists. Thus, we believe that virtual 3D reconstructions are a valuable research tool, as long as they are used with enough detail and a methodological base. At this conference, we aim to approach the variety of methods and protocols for the scientific use of 3D technologies applied to the study of later prehistoric architecture from the European Metal Ages, beyond mere illustration. Orthophotographs obtained by satellite or drone, as well as LiDAR scanning and ground-penetrating radar provide consistent results that combined with the use of 3D software, architecture, ethnography, stratigraphy and chronology will allow us to develop more solid and innovative research.

An important aim of this conference will be to try and arrive at agreed principles for the use of digital technologies in archaeological research, specifically as applied to the Metal Ages, and cast these into a formal guidance document. It is hoped that such a document will provide the scientific community with specific guidelines to help and justify the application of digital technologies in implementing projects to reconstruct or rebuild structures and built environments of the prehistoric past that remain true to the scientific evidence, with the rigor and reliability that society expects of us.

The main chronological scope of this conference is defined as the Metal Ages, from the Copper Age to the end of the Iron Age, in line with the remit of the UISPP’s Scientific Commission “Metal Ages in Europe” under whose auspices it is organized. However, proposals of contributions focusing on sites or structures dating to the end of the Neolithic or the early Roman Empire are also acceptable, provided that in methodological terms they are contribute to attaining the main objectives of the conference.

By the same token, the European focus expressed in the name of the Commission does not preclude the acceptance of contributions dealing with sites from any part of the Mediterranean, or even elsewhere in the world, where this is justified by the proposal's wider interest.

The conference will focus on four different lines of debate, detailed below. Within these, priority will be given to proposals that focus on case studies of digital applications whose outcomes can be applied to other sites and built environments of the Metal Ages. Contributions cannot have been published previously and must offer a notable degree of methodological innovation.

1st line of debate: Application of digital techniques to architectural features in Archaeology

The application of digital techniques to built structures is, potentially, the most developed branch at present, at least as far as the size and the extent of the archaeological remains are concerned. As a consequence, these applications have become the most powerful tool at the disposal of archaeologists, architects and restorators for reconstructing and interpreting ancient buildings, and for increasing our knowledge of those structures through non-destructive means, more quickly and more cost-effective, without many of the issues posed by excavation.

2nd Line of debate: Application of digital techniques to archaeological objects in Architecture

Similarly, digital techniques facilitate new lines of enquiry that advance the study of archaeological objects, providing surprising results that just a few decades ago were unimaginable. The potential to undertake virtual reconstructions of deteriorated or fragmented objects, allowing us to calculate the weight, volume and capacity, apart from providing functional solutions for objects that are difficult to reproduce, has opened up the possibility of new interpretations that need to be underpinned by solid and consistent research.

3th Line of debate: Application of digital techniques in the Museology of the archaeological Architecture

By the same token, these digital techniques have had a profound and radical impact on the media and resources used in museum practice. The capability of digital applications dedicated to the virtual reconstruction of archaeological remains and of the technical, social and ideological processes that led to their formation, is one of the most obvious advances of those applications as perceived by the general public. The traditional limited use of audio-visual resources in museums and exhibitions has been is now being integrated into new communication technologies (ITCs), such as TV streaming services, customized networks, or virtual learning environments which allow full interaction between the sender and the recipient of any sent message.

4rd Line of debate: Application of digital techniques in Archaeometry

Finally, digital techniques have facilitated and increased the cost-effectiveness of geochemical and bioarchaeological analyses, enhancing what the relevant analytical techniques can achieve, their level of precision and how their results can be presented and disseminated, and facilitating the understanding and the interpretation of the relevant data in the historical process that is studied by Archaeology and History.