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August 28th-31st
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■ ABSTRACT BOOK

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**30TH EAA ANNUAL MEETING
ROME, ITALY
28TH - 31ST AUGUST 2024**

Within the project, extended geochemical maps and the use of chemical variables verified through statistical validation and combined with the archaeological record, greatly helped to characterize landscape forms, identifying environmental dynamics, and relating them to soil nature or anthropic activities.

In particular, we will discuss how both horizontal (i.e. an extensive geochemical survey that collected approx. 8000 measurements) and vertical pXRF data (data coming from a coring campaign), collected in selected area of the Cornia Valley, can contribute to identify and describe historical landscapes at different scales.

11 PXRF AND ARCHAEOMETRY AS SUPPORTING TOOLS FOR THE PROVENANCE OF POTTERY. PRODUCTION AND DISTRIBUTION IN SOUTHERN TYRRHENIAN TUSCANY (ITALY)

Russo, Luisa (University of Siena, Department of Historical Sciences and Cultural Heritage) - Ponta, Elisabetta (University of Siena, Department of Historical Sciences and Cultural Heritage) - Intermitte, Davide (University of Siena, Department of Historical Sciences and Cultural Heritage) - Volpi, Vanessa (University of Siena, Department of Historical Sciences and Cultural Heritage) - Fornacelli, Cristina (University of Siena, Department of Physical, Earth and Environmental Sciences)

The strong interdisciplinary nature of the ERC nEU-Med project, carried out by the Department of Historical Sciences and Cultural Heritage of the University of Siena from 2015 to 2021, allowed for an in-depth archaeometric study based on the comparison between raw materials and finished ceramic products. The selected sample consists of over one-hundred common ware ceramics dating to the Medieval period and characterized by coarse, fine and selzionata textures, mainly from sites in the district of the Colline Metallifere, located in the hinterland of Grosseto, and the royal court of Vetricella in the adjacent coastal board, together with a number of clays sampled from deposits in the same area. All the samples underwent mineralogical, petrographic and chemical analyses. For the latter the use of pXRF proved of fundamental importance as it constitutes a rapid method that enables the acquisition of significant volumes of data useful for initial screening. Processed results underwent a statistical review based on principal component analysis (PCA). The availability of such a large number of samples, coupled with an extensive compositional database, made it possible to establish preliminary groupings that were further defined by way of chemical and petrographic analyses (XRD and SEM-EDS). The identification of specific geochemical markers was key in understanding the provenance of the clays used in the production of the ceramics as well as the circulation of finished products in sites from the case study area, this last allowing to substantiate and formulate historical-archaeological hypotheses on the possible economic connections between settlements.

12 TRACING LITHIC RAW MATERIALS FROM OUTEIRO DO CIRCO (BEJA, PORTUGAL) – PORTABLE X-RAY FLUORESCENCE (PXRF) UTILITY

Soares, Sofia (Portuguese National Laboratory of Energy and Geology (LNEG)) - Silva, Teresa (Portuguese National Laboratory of Energy and Geology (LNEG)) - Serra, Miguel (Center of Archaeology, Arts and Heritage Sciences (CEAACP), University of Coimbra) - Porfírio, Eduardo (Center of Archaeology, Arts and Heritage Sciences (CEAACP), University of Coimbra) - Silva, Sofia (Outeiro do Circo Project)

The Late Bronze Age settlement of Outeiro do Circo in Beja, Portugal underwent archaeological excavations from 2008 to 2021. During these excavations, the lithic industry identified shows the maintenance of ancient traditions, that reveal a former chalcolithic occupation, but mainly the presence of an important set of lithic artefacts, mostly made up of sickle elements, which played an important role in some essential activities, to the Late Bronze Age community, such as agriculture. This paper focuses on the chemical characterization of the lithic materials found at the archaeological site using portable X-ray fluorescence (XRF) equipment. The results obtained from this technique were compared with those obtained from other techniques such as X-ray diffraction (XRD) and Raman spectroscopy. The aim was to establish "chemical fingerprints" that can be used to correlate the lithic materials with the different rock types found in the area. The preliminary results of this study are presented and discussed. Additionally, the utility of portable X-ray fluorescence as a non-destructive technique for determining the provenance of lithic materials is evaluated. In summary, this paper provides insights into the lithic industry found at the Late Bronze Age settlement of Outeiro do Circo and to the use of portable X-ray fluorescence, along with other techniques, for the determination of lithic raw materials.

13 BRONZE AXES STUDY: A MULTIDISCIPLINARY APPROACH

Volante, Nicoletta (Siena University) - Metta, Christian (Siena University) - Mustone, Gaia (Siena University) - Volpi, Vanessa (Siena University) - Dallai, Luisa (Siena University)

The present contribution illustrates a protocol for metal artefacts analysis following a multidisciplinary methodology, developed thanks to the observation on an Early Bronze Age conspicuous set of axes and "panelle" (ingots), found in storage places or in isolated contexts located in a wide area including Siena and Grosseto districts. The project aims not only the reviewing of the published material to date (typological and chemical analyses), but also a preliminary

approaching to the study of the techno-functional and post-depositional traces visible on the finds performed in the Laboratory of Techno-Tracological analysis (LaTT) and non-invasive archaeometric analyses such as XRF and FT-IR performed in collaboration with the Laboratory of Topography of Mining Territories (LTM).

The observed materials come from very different contexts and their states of preservation is also very heterogeneous, which is why the analysis was conducted by elaborating targeted investigation protocols, based on the characteristics of the finds.

Specifically presented here are some preliminary results of the investigation conducted with pXRF, an analytical technique chosen for its non-destructiveness and versatility in the analysis of many finds of various types, which made it possible to obtain useful information regarding the chemical composition of the surface of the artefacts, alteration patinas, and possible contamination deriving from the different contexts of deposits.

381 CAPACITY BUILDING FOR FAIR DATA SHARING AND DIGITAL PRESERVATION

Session theme: 2. Archaeological Sciences, Humanities and the Digital era: Bridging the Gaps

Session organisers: Rose, Thomas (Forschungsbereich Archäometallurgie, Leibniz-Forschungsmuseum für Georesourcen/Deutsches Bergbau-Museum Bochum) - Richards, Julian (Archaeology Data Service, University of York) - Giaccari, Matteo (Department of Earth Sciences, Sapienza University of Rome) - Niccolucci, Franco (PIN, University of Florence) - Ercoles, Isabella (Department of Earth Sciences, Sapienza University of Rome)

Session format: Discussion session (with formal abstracts)

More than other disciplines, archaeology relies on the proper collection, documentation and publication of data because of excavations being an inherently destructive methodology. Moreover, research progress relies strongly on sharing this data to allow for comparison and contextualisation of findings and processes.

In the last decade, data sharing was boosted by the development of research infrastructures such as ARIADNE RI (Research Infrastructure), which now also provides the archaeological expertise in the EU-funded ATRIUM project. ATRIUM aims to consolidate and expand such services across the Arts and Humanities.

Despite all these activities, the SEADDA COST Action identified a fragmented landscape. Many countries lack the capacity and expertise to create and manage data according to the FAIR principles (Findable, Accessible, Interoperable, Reusable), or to ensure their long-term preservation. Moreover, researchers may have already heard about such research infrastructures but often are held back in sharing data through them. A major obstacle seems to be the lack of standards and guidance but also intuitive tools to feed one's own data into a research infrastructure. Consequently, data are still not as widely available and cannot flow as easily as would be desirable to boost archaeology.

Our session brings together researchers and infrastructure providers, archaeologists and archaeological scientists. We invite contributions spanning users and providers which identify and discuss the issues and challenges we face when using datasets, sharing data and keeping them available in the long-term, from the peculiarities of single data sets over the huge diversity of data archaeologists handle, to the current volatility of funding for research infrastructures. In the discussion, we will aim to define some guidelines on how data sharing can be facilitated on the different levels and what actions are needed by individuals and institutions to let data flow with research infrastructures as their safe and permanent havens.

ABSTRACTS

1 RESEARCH INFRASTRUCTURES FOR FAIR DATA SHARING IN THE HERITAGE SECTOR

Richards, Julian (University of York; ARIADNE RI) - Niccolucci, Franco (PIN; ARIADNE RI)

The European Commission is making major investments in research infrastructures and online data services in the heritage sector, with a plethora of national and European initiatives and a wealth of acronyms: Europeana, European Open Science Cloud (EOSC), E-RIHS (European Research Infrastructure for Heritage Science), and most recently the ECCCH (European Collaborative Cloud for Cultural Heritage), to name but a few. Many of these services are also being mirrored at national level. The landscape is crowded and confusing, but it is important that the archaeological and heritage sector makes the most of these new opportunities to leverage what we need. The ARIADNE Research Infrastructure has emerged from successive European investments as a Knowledge Base and data aggregator for our sector, now providing access to 4 million archaeological resources across 40 countries. Rather than a top-down initiative it is a community-driven membership association, developing and maintaining a sustainable aggregation service and research infrastructure for archaeological and heritage data. In 2024 it has embarked on a new 4-year EU-funded project, ATRIUM, to ensure it is embedded within broader Arts and Humanities research infrastructures (DARIAH, CLARIN and OPERAS) and the EOSC marketplace. It also a member of the ECHOES consortium, which is establishing the ECCCH, to be launched in September 2024. This paper will seek to introduce the rapidly changing landscape from the perspective of an infrastructure provider, seeking input from researchers and