6th INTERNATIONAL MARITIME ARCHAEOLOGY GRADUATE SYMPOSIUM (MAGS 2025)

BOOK OF ABSTRACTS – POSTER PRESENTATIONS

University of Ioannina, Greece. International Centre of Hellenic Education "STAVROS NIARCHOS", "Dimitrios Glaros" amphitheatre - April 2-5, 2025

POSTER PROPOSALS

1) **NAME:** IOANNA EFSTATHIOU - ELLI KARKAZI - YANNIS BASSIAKOS **EMAIL:** gianna_efstathiou@yahoo.gr - ellikarkazi@gmail.com -y.bassiakos@inn.demokritos.gr **AFFILIATION:** MINISTRY OF CULTURE, EPHORATE OF PALEOANTHROPOLOGY-SPELEOLOGY, ARCHAEOLOGY SECTION - LABORATORY OF ARCHAEOMETRY, NCSR "DEMOKRITOS"

TITLE: ***Palaeolithic Coastal Cave Occupation at the Malea Peninsula: Unearthing New Evidence from Southeastern Peloponnese***

KEYWORDS: Coastal Caves, Palaeolithic, Laconia

ABSTRACT:

The research programme of the Ephorate of Palaeoanthropology - Speleology in Laconia, and especially the survey of the highly precipitous eastern coast of the Malea Peninsula (south of the site of Ayios Phokas, Monemvasia) brought to light a complex of coastal karst caves and rockshelters, which preserved lithified archaeological layers with Palaeolithic material, including many stone artefacts of flint, quartz and andesite (stone of "Krokees") as well as faunal remains and seashells. During the Holocene period, the eustatic rise of the sea-level flooded and eroded a part of original stratigraphy of the cave "Anavalos", but has left unaffected stratigraphic sections in several sectors of the cave.

This presentation introduces, for the first time, evidence of Palaeolithic habitation in the coastal areas of the SE Peloponnesian peninsula extending to Cape Malea. These findings enrich our knowledge of the occupation history of Palaeolithic groups in the southern Peloponnese, complementing earlier discoveries from sites in the Laconian and Messenian Gulfs. In this way, a new dynamic of Palaeolithic settlement emerges with a "look" towards wider maritime horizons and the island clusters of the southern Aegean, beyond the limited maritime areas of the Peloponnese gulfs. The paleoenvironmental conditions and the characteristics of the Palaeolithic landscape will also be discussed.

2) **NAME:** STELLA KATSAROU – ELI KARKAZI – ANDREAS DARLAS **EMAIL:** skatsarou@culture.gr
AFFILIATION: EPHORATE OF PALAEOANTHROPOLOGY – SPELEOLOGY

TITLE: ***Coast and Karst Dynamics: the Case ff Limnopoula Rockshelter, Varassova, Nafpaktia***

KEYWORDS: Rockshelter, Sea Erosion, Western Greece, Early Holocene

ABSTRACT:

The paper presents preliminary observations on the late Pleistocene-early Holocene deposit of the Limnopoula rockshelter, a coastal site on mount Varassova, Nafpaktia, with a focus on geoarchaeological evidence. The rockshelter is found at the base of a high vertical cliff of the southern Varassova mass, projecting into the Patraikos gulf. Situated slightly above the coast, Limnopoula has an arched opening allowing the exposure of its space to exterior conditions. Field research conducted by the Ephorate of Palaeoanthropology-Speleology has documented two types of archaeological fill in the rockshelter: a) the loose floor sediment of late Pleistocene-early Holocene date which fills up almost half the height of the rockshelter and b) the lithified deposit preserved at various heights on the rock wall above the floor sediment, providingevidence of a longer stratigraphy across the Mesolithic and the Neolithic and implies the initial presence of a higher/thicker and chronologically more extensive archaeological fill in the rockshelter. The paper uses macroscopic observations of sediment composition and stratigraphy, test excavation data and C14 dating to reconstruct the initial level of the prehistoric deposit and the impact of sea activity in washing part of it away while karst processes were contributing to the preservation of another part. Limnopoula emerges as an illuminating example of the transformation of an archaeological deposit into fragmentary fills of different forms and textures by large-scale geomorphological processes.

3) **NAME:** IOANNA EFSTATHIOU[1] - S. KATSAROU[2] - CH. KONTAXI[3] - L. KORMAZOPOULOU[4] - A. MARI[5] - F. MAVRIDIS[6] - A. PAPADEA[7] - E. STRAVOPODI[8] - G. VALVIS[9] - A. VLACHOPOULOS[10] - I. ZYGOURI[11] **EMAIL:** gianna_efstathiou@yahoo.gr **AFFILIATION:** 1,-,9, 11) MINISTRY OF CULTURE, EPHORATE OF PALEOANTHROPOLOGY-SPELEOLOGY, ARCHAEOLOGY SECTION – 10) DEPARTMENT OF HISTORY AND ARCHAEOLOGY, SCHOOL OF PHILOSOPHY, UNIVERSITY OF IOANNINA

TITLE: ***New Evidence of Ritual and Symbolic Behaviour in Coastal Caves in Greece: a Preliminary Assessment***

KEYWORDS: Coastal Caves, Ritual Behaviour, Water, Decision Making

ABSTRACT:

Ongoing research of the Ephorate of Paleoanthropology-Speleology brought to light new data, providing strong evidence for coastal caves as spaces of ritual and symbolic behaviour that was deliberately associated with these sites primarily on account of their proximity to the sea. The present study focuses on the investigation of a possible pattern of these specific symbolisms and ritual uses of coastal caves through time and across space in the Aegean and the Ionian Sea, as well as their contextual variations. The role of coastal caves as landmarks for maritime travelling, especially on long-distance sea routes, conceptual links with mythological traditions and religious uses and key factors in the selective process by the communities. Other factors including, indicatively, the presence of water inside the coastal caves, may also be significant for enriching their attraction to visitors and symbolic connotations.

4) **NAME:** CHRISTINA KALLIONTZI **EMAIL:** christikallio@gmail.com **AFFILIATION:** UNIVERSITY OF THESSALY

TITLE: ***A Maritime Geoarchaeological Approach of Crete: the Cases of Falassarna and Rithymna***

KEYWORDS: Maritime Geoarchaeology, Tectonism, Crete, Harbours

ABSTRACT:

Maritime Geoarchaeology, a branch of archaeology that combines both archaeology and geology, has over the years made its mark in underwater investigations, without which finds would never have come to light. The geoarchaeological research of many sites in the world and in Greece, in particular based on this relationship has brought interesting results, an example of which is the excavation of

sites in tectonically active areas. Due to phenomena that act on the Earth's crust, such as the tectonic movements of the lithospheric plates or above it on the surface eustatic and isostatic factors to name a few, architectural remains have been submerged over time, becoming today sunken "witnesses" of an ancient past. The paper will present the sites of Falassarna and Rithymna on the island of Crete, as they are examples of a geotectonic peculiarity of the island, describing the history of the excavations, their archaeological data, the geological phenomena that influenced their subsidence or uplift and analysing the scientific methods and field techniques applied for their examination. In this way, the role of interdisciplinarity in drawing archaeological conclusions will be examined, and questions will be raised about the place of Crete in the geodynamics of the Eastern Mediterranean.

5) **NAME:** PIOTR PREJS **EMAIL:** p.prejs@uw.edu.pl **AFFILIATION:** UNIVERSITY OF WARSAW

TITLE: ***Protection of Inland National Heritage through Modern Documentation Techniques of Underwater Archaeological Sites***

KEYWORDS: Underwater Archaeology, Photogrammetry, Low Visibility Documentation, Inland Archaeology

ABSTRACT:

Underwater archaeology, typically associated with shipwrecks and artefacts in oceanic environments, also holds significant potential in freshwater bodies such as lakes and rivers. Despite the challenges posed by murky, cold waters and logistical difficulties, recent advancements in prospection and documentation methods have revealed numerous inland archaeological sites. The author highlights the reason why inland archaeology is underdeveloped, citing factors such as poor visibility, sediment disturbance, and limited accessibility. By adapting methods such as high-resolution side-scan sonars and photogrammetry using Structure from Motion (SFM) techniques, substantial discoveries have been made. Examples include the identification of multiple shipwrecks in the Vistula River and several wrecks and artefacts in lakes Białe Augustowskie, Nie-gocin, and Kisajno. The author's innovative approach, using calibrated cameras for detailed 3D models, has enabled effective documentation even in low-visibility conditions. This technique has been successfully applied to sites like the West Baltic Barrow Culture settlement and a logboat in Lake Lubanowo, demonstrating the potential for monitoring artefact degradation and creating virtual museums. These advancements not only facilitate the protection and study of underwater sites but also make them accessible to the public, underscoring the significant archaeological potential of inland waters

6) **NAME:** GUVEN GUMGUM **EMAIL:** guvengumgum@gmail.com **AFFILIATION:** INDEPENDENT RESEARCHER

TITLE: ***The Kelek: Ancient Means of Transport on the Tigris and Euphrates Rivers***

KEYWORDS: Kelek, Rivers, Tigris, Euphrates

ABSTRACT:

The "kelek" is an ancient river watercraft used for travel and transportation on water, especially in regions crossed by the Tigris and Euphrates rivers. Associated with these lands for centuries, the "kelek" has become an essential part of the local economy, providing a livelihood to many communities that built and used these boats for trade. Even today, several towns along these rivers bear the name "Kelek" in tribute to this historic means of transport. Alongside land routes, river pathways have always played a fundamental role in the movement of people and goods. Since the Neolithic era, livestock farming has been one of the primary sources of sustenance in the region, deeply influencing social life and the economy. Large animals were used for overland transport, while smaller animals, as in the case of the "kelek", were employed for river transportation. This study adopts an ethnoarchaeological approach, integrating historical, archaeological, topographical, and anthropological elements to examine the social structure of the region. The use of livestock for both land and river transport is not incidental but represents a necessity rooted in local culture and economy. The goal of the research is to illustrate the historical development, uses, and construction phases of the "kelek", and to analyse the contexts in which it was employed.

7) **NAME:** MARKO RUNJAJIĆ **EMAIL:** marko@mailbox.org **AFFILIATION:** UNIVERSITY OF HAIFA

TITLE: ***Three Iron Age Cargoes and their Deposition History. A Geoarchaeological Approach to Shipwreck Site Formation Processes at Tel Dor, Israel***

KEYWORDS: Iron Age Levant, Sediment Analysis, Spatial Mapping, Deposition History

ABSTRACT:

This research presents a geoarchaeological approach to examine shipwreck cargo formation processes at Tel Dor, Israel, to comprehend the deposition history of three Iron Age shipwrecks. The Iron Age cargoes at the Dor Lagoon were recently excavated and span the 11th–7th centuries BCE. Within 40 m^2, this unique assemblage was sampled atop each other, georeferenced, and recorded via Photogrammetry. Bulk sampling (n.>40) at the Lagoon was conducted systematically below

significant artefacts to represent all the chronological assemblages. In addition, five short PVC-tube cores were placed vertically through the assemblage layers and then excavated and extracted. Laboratory methods, including grain size analysis (granulometry), bulk-mineralogical analysis (FITR), magnetic susceptibility, elemental analysis (XRF), and total organic carbon (TOC) analysis, were applied to the bulk sediments to provide detailed insights into the sediment characteristics and their composition. Furthermore, the micromorphological analysis of thin sections produced from the cores aims to place the geological, geophysical, and geochemical sediment properties within a stratigraphic context. In order to reveal insights into the deposition history of the archaeological strata and the sedimentation history within the Lagoon, all datasets will be mapped spatially by integrating the method of lithic fabric analysis. This approach may help determine the artefacts' primary or secondary deposition relating to the three different cargoes. It is expected that the datasets may allow the detection of changes in the Lagoon environment related to the deposition processes of the archaeological finds.

8) **NAME:** ELIOT MOWA **EMAIL:** esmowa@gmail.com **AFFILIATION:** UNIVERSITY OF NAMIBIA, UNIVERSITY OF BRISTOL

TITLE: ***A Holistic Interpretation of Heritage: a Case Study of Namibian Shipwrecks***

KEYWORDS: Shipwrecks, Interpretation, Natives, European

ABSTRACT:

Shipwrecks of European origin, like other land-based heritage of European origin in African context, are not recognized as heritage, nor is there political will to recognise them as such by the current governments in Africa. There is little effort to allocate financial and human resources to researching and managing this heritage. A key ingredient for this general arrogance is in the perceived representation of European colonial history and interests. Such sites are considered to have very little to offer to the history of native African. The 2001 UNESCO Convention on the Protection of Underwater Cultural Heritage encourages national governments to identify heritage resources that resonate with or acquaint the history of local people. In this paper I examine a case study of several known shipwrecks of European origin that wrecked along the Namibian coast. The emphasis is on how these shipwrecks tell a story of native African contribution in a positive way, from which a holistic interpretation can be narrated, and eventually with public awareness the aim is to change the general perception of the public and authority alike on how they perceive shipwrecks of European origin, that they can tell their own history from the same heritage. The case study highlights multiple aspects of native African history from each shipwreck.

9) **NAME:** FARAH EL AKKAD **EMAIL:** farahsherif91@gmail.com **AFFILIATION:** CENTRE FOR MARITIME ARCHAEOLOGY AND UNDERWATER CULTURAL HERITAGE, ALEXANDRIA UNIVERSITY

TITLE: ***The Development of Pharos Island Maritime Cultural Heritage: an Analytical Approach***

KEYWORDS: Ethnography, Maritime Cultural Heritage

ABSTRACT:

Alexandria's maritime cultural heritage, particularly in 'Pharos Island' area, presents a vital part of life in the Mediterranean and has long been home to fishermen. This paper aims to delve into what happened to this site since the Greco-Roman period through the Muslim Conquest and the Ottoman era, both physically and metaphorically. What did the coastline look like, and which are the changes that have occurred during each era, all of which have been the foundation of what we see today.

-Through an ethnographic approach, this research intends to fill this gap of knowledge between studies, document what remains of Pharos, both archaeological and maritime heritage as most studies focus on its ancient history while little has been found regarding its modern History.
-Study the heritage of fishing at the site and its related crafts such as boat making. Many boatmaking workshops closed down after Covid19 outbreak (2020). The history of fishermen families, their inherited traditions, and whether they still work and follow the same customs today.

-Look at similar projects conducted in countries such as Lebanon: Recording the Tangible and Intangible Maritime Heritage of the Anfeh Seafaring Community (2014).

- Sketch the changes on the coastline in each era, including architectural gems, mosques and shrines. Additionally, work on awareness campaigns to preserve the legacy of fishing and maritime cultural heritage in the area.

-Execute a site management plan to establish the area as a heritage site and lay the foundation stone for the Pharos Museum for Maritime Cultural Heritage.

10) **NAME:** JAFAR ANBAR[1] - KALLIOPI BAIKA[1] - FAUSTO FERREIRA[2] - POLYVIOS RAXIS[3] - VASILIKI DROUGA[3] - CATIA NUNES[4] - LORIS BARBIERI[5] - MADALIN SILION[6] - WENDY LENARDUZZI[7]. **AFFILIATION:** 1) AIX-MARSEILLE UNIVERSITY, CCJ, AIX-EN-PROVENCE, FRANCE 2) LABORATORY FOR UNDERWATER SYSTEMS AND TECHNOLOGIES (LABUST), FACULTY OF ELECTRICAL ENGINEERING AND COMPUTING, ZAGREB, CROATIA 3) ATLANTIS CONSULTING, THESSALONIKI, GREECE 4) ASSOCIACAO NATUREZA PORTUGAL (ANP) | WORLD WIDE FUND (WWF), LISBON, PORTUGAL, 5) DEPARTMENT OF MECHANICAL, ENERGY AND MANAGEMENT ENGINEERING (DIMEG), UNIVERSITY OF CALABRIA, RENDE, ITALY 6) BEIA CONSULT INTERNATIONAL, BUCAREST, ROMANIA 7) MARITIME TECHNOLOGY CLUSTER FVG (MAREFVG), MONFALCONE, ITALY

TITLE: ***Training in Underwater Blue Technologies and Skills Development for Blue Careers to Address Current Blue Economy Challenges: The uBlueTec Approach***

KEYWORDS: Green-blue-digital Skills in Blue Economy, Twin Transition, Hub on Underwater Technologies, Recruitment Platform for Blue Jobs

ABSTRACT:

Blue Economy is a fundamental EU sector that directly employs about 3.59 million people and generates ca. €623.6 billion in turnover (EU Blue Economy Report 2024). Our seas have the potential to deliver sustainable growth and jobs in the coming years and contribute towards the EU *Sustainable Blue Economy Strategy,* the EU *Green Deal* and the objectives of UN *Ocean Decade*.

However, despite this immense potential, current blue economy skills' provision worldwide reveals significant gaps with present and future needs towards a sustainable & carbon neutral economy that is tech-oriented. To this end, technologies used in underwater (UW) missions and activities (both commercial & scientific) are vital for several critical blue economy sectors, such as Offshore renewable energy, Aquaculture, Marine biodiversity or the study, protection and monitoring of UW Cultural Heritage, among others, evolving through new challenges (climate change, carbon neutrality, ocean protection). A common denominator is the lack of skilled personnel in using and deploying UW technologies in the context of twin (green/digital) transition.

Addressing these challenges, the uBlueTec project (www.ubluetec.eu) is proposing an innovative educational approach addressed to all EU citizens involved in blue economy sectors in all levels of education (academic and life-long learning training schemes). It aims to set up, test and validate a triple transition training and skills development model (green, blue, digital skills) to support

European Blue Economy. The proposed model is based on an alliance formed by universities, VET providers, clusters, and SMEs.

After having already conducted a thorough gap analysis in EU level and identified best practices at EU level, the project addresses the main challenges by the following methodology: development of educational material and curriculum, linked to micro-credentials, enabling skills building in state-of-the-art UW technologies from a green and digital perspective; piloting the developed assets supporting career development in underwater blue technologies; establishment of a Hub on UW Tecs, as a permanent capacity building structure; deployment of a recruitment platform for blue jobs facilitating demand-supply matching between current/future labour force and industries; attraction of young talents through Career Days and Entrepreneurial Bootcamps.

This work is supported by the uBlueTec project '*Training framework on Underwater Tecs as key enabler for blue careers development' (GA 101124893)*, co-funded by the European Union through the EMFAF Program.

11) **NAME:** J. GATT[1] - K. BAIKA[1] - J. ANBAR[1] - P. RAXIS[2] - J.-S. GUILBERT[3] - M. TRONCHET[4] - J. ANTONIO BETTENCOURT[5] - P. SANCHES CARVALHO[5] - A. FOURKIOTOU[2] AFFILIATION: 1) AIX-MARSEILLE UNIVERSITY, CCJ, AIX-EN-PROVENCE, FRANCE, 2) ATLANTIS CONSULTING S.A., 3) ASSOCIATION ARCHÉOLOGIE PETITES ANTILLES / UNIVERSITÉ DES ANTILLES / ARCHAM UMR 8096, 4) ASSOCIATION ARCHÉOLOGIE PETITES ANTILLES 5) UNIVERSITY NOVA DE LISBOA (UNL) | PORTUGAL

TITLE: ***Key Challenges and Sustainable Strategies for the Development of Underwater Cultural and Nature Tourism in Europe's Outermost Regions. The ecoRoute project.***

KEYWORDS: Sustainable Blue and Green Growth, Underwater Cultural and Nature Tourism, Green/Circular Paths, Public Awareness, Outermost Regions, Climate Change

ABSTRACT:

In Europe's Outermost Regions, remoteness or insularity in coastal areas or islands call for sustainable strategies to address the challenges due to seasonality or accessibility, as well as an ecological approach to the tourist development. Despite tourism being a major pillar of their economy, the underwater cultural and natural heritage (UCNH) is not widely considered as an asset. There lies a great potential for sustainable blue and green growth, with quality tourism offerings that promote underwater cultural heritage (UCH) combined with the marine environment in a single context. Such

investments need to respect inherent values thus promoting sustainable and eco-friendly tourism practices. Most importantly, efficiency and sustainability of efforts rely on community engagement and public awareness about the protection of UCH and the preservation of biodiversity, especially facing new threats from climate change intensified risks and natural geohazards that already effect UCH tourism worldwide, as well as the beneficial impact of circular green economy on all aspects of operability and implementation of tourist services.

In this context, ecoRoute aims at transforming Azores, Madeira and Martinique into smart Underwater Cultural and Natural Tourism (UCNT) destinations, through the sustainable management and responsible protection of UCNH sites with an ecological focus and awareness raising among locals and visitors. Considering various aspects of sustainability (environmental, cultural, social, economic), the approach focuses on multiple levels i.e. smart regional strategies and action plans, stakeholders' capacity and community involvement.

This work is supported by the ecoRoute project "Multidimensional and integrated approach fostering smart underwater cultural and nature tourism offer in Outermost Regions" (Grant Agreement 101124681), co-funded by the European Union through the EMFAF Program.

12) **NAMES:** K. BAIKA[1], J. ANBAR[1], P. RAXIS[2], E. LITHOXOOU[3], D. TZOVARAS[3], V. DROUGA[2], S. KRINIDIS[4] **AFFILIATION:** 1) AIX-MARSEILLE UNIVERSITY, CCJ, AIX-EN-PROVENCE, FRANCE, 2) ATLANTIS CONSULTING S.A., 3) CENTRE FOR RESEARCH & TECHNOLOGY HELLAS, 4) DEMOCRITUS UNIVERSITY OF THRACE

TITLE: ***Underwater Cultural and Creative Tourism as Drivers for Sustainable Development of Rural and Remote Areas: The TOURAL Modelling Approach***

KEYWORDS: Sustainable Tourism, Cultural and Creative Tourism, Rural and Remote Regions, Public Awareness, Macro-regional Cooperation, Multidimensional Tourism Models

ABSTRACT:

Rural areas demonstrate a wide range of qualities, from the beauty of their nature to the significance of their culture and cultural heritage. But they also face a unique set of challenges such as unemployment, limited touristic offerings, lack of diversified economic activities beyond agriculture, farming and forestry. In this context, tourism - one of major contributors in EU economy – could become an anchor for economic development of rural areas.

Motivated from the above considerations, the TOURAL EU project focuses on cultural and creative tourism as drivers for sustainable development of rural and remote areas, within the context of multi-destination tourism offerings empowered by macro-regional tourism cooperation.

The proposed model supports touristic development of rural regions balancing the growth of their urban clusters (more popular & touristic) with the growth potential of their remote & rural grid cells. The modelling approach is multidimensional, addressing complementary tourism verticals and niche sectors; with the aim to empower the offering to the market multi-destination and multidimensional tourism offerings. The target is multiple tourism niche sectors, namely underwater (UW) cultural & nature heritage tourism (UCNHT), cultural & creative tourism (CCT), cultural science tourism (CST), and silver tourism (SLT).

This work is supported by the TOURAL project '*Multidimensional model of tourism verticals driving the sustainable balanced growth among rural & remote grids and urban clusters of rural regions, fostering macro-regional cooperation*' (GA 101132489), funded by the European Union through the Horizon Europe Program.