

IMSW – Athens 2017

Sunday 26th & Monday 27th February



Venue

Netherlands Institute in Athens

Makri 11, GR-11742 (near metro station Akropoli)

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Program

Papers are 20 minutes followed by 5 minutes discussion time.

Sunday 26th February

- 8.30-8.50 Welcome and Coffee
- 8.50-9.00 **Opening**
Winfred van der Put, Director of the Netherlands Institute in Athens
- 9.00-9.35 **Surfing the point clouds: challenges and new possibilities of LIDAR data sets for the archaeological study of Peninsular landscapes.**
Victorino Mayoral Herrera & Martina Cecilia Parini (Paper read by Jesus Garcia Sanchez)
- 9.35-10.10 **Pixels and sherds.**
Combining LiDAR and surface survey in Iberian Iron Age Landscape Research.
Ignasi Grau Mira
- 10.10-10.45 **Working with ALS – Lidar data in Central South Italy. Tips and experiences.**
Jesús García Sánchez
- 10.45-11.05 *Coffee break*
- 11.05-11.40 **"Of silver they possess a veritable fountain, a treasure chest in their soil":
A New Project on Ancient Mining at Ari (Lavrion).**
Hans Lohman & Andreas Kapetanios
- 11.40-12.15 **Geophysical detection and invasive exploration of protohistoric salt
production facilities in Puntone Scarlino (Tuscany, Italy): preliminary field
results.**
Peter Attema, Wieke de Neef, Luca Alessandri, Bianca Maria Aranguren, Maria
Rosaria Cinquegrana, Francesca Ippolito, Jan Sevink, Burkart Ullrich.
- 12.15-2.00 *Lunch break*
- 2.00-2.35 **"Standing Buildings". examples of mapping and reconstructing the
landscape of ancient cities through geophysical and satellite remote sensing
techniques**
Apostolos Sarris

- 2.35-3.10 **Geophysical mapping at the landscape scale at protohistoric Crustumerium, preliminary results**
Peter Attema, Nikolaas Noorda & Burkhard Ullrich
- 3.10-3.45 **Distribution of Roman Settlements in the Agrigento-Hinterland-Survey**
Rebecca Diana Klug
- 3.45-4.05 *Tea Break*
- 4.05-4.40 **The urban architecture survey at Haliartos (Boeotia)**
Lieve Donnellan, Yannick Boswinkel & Anthony Snodgrass
- 4.40-5.15 **From City Block to Neighbourhood at Ostia**
Hanna Stöger
- 5.15-5.50 **The Therasia Island Project. Integrating data for the study of the prehistoric landscape**
K. Sbonias & E. Farinetti

Monday 27th February

- 9.30-10.05 **Contexts in caves – caves in context**
Wieke de Neef & Burkard Ullrich
- 10.05-10.40 **Aegean landscapes of the early Middle Ages: new perspectives from Naxos**
Sam Turner, Jim Crow
- 10.40-11.00 *Tea Break*
- 11.00-11.35 **Recording Vernacular Buildings and Archaeological Survey**
John Bintliff
- 11.35-12.00 **From the field to the deposit, and back.
The Halos area in the (Late?) Bronze Age.**
Vladimir Stissi
- 12.00-12.25 **Phaistos Project: New Data from the Archaeological Survey in Phaistòs**
Fausto Longo & Amedeo Rossi

Abstracts

Surfing the point clouds: challenges and new possibilities of LIDAR data sets for the archaeological study of Peninsular landscapes.

Victorino Mayoral Herrera¹ & Martina Cecilia Parini²

Recent release of public LIDAR data has opened a huge field of research for Spanish archaeologists. Nevertheless, low point densities, classification mistakes and other technical issues make sometimes difficult a correct interpretation of their results and a maximized utilization for analytical purposes. In this presentation we will offer some examples of the great potential of this new source of remote sensing for the historical analysis of agrarian landscapes in the Peninsular Southwest (region of Extremadura). On one hand, we will show some relevant results in the identification of archaeological features in our study area. It includes importantly many traces corresponding to vanished agricultural systems dating from Roman to post-Medieval times. On the other hand, we will consider some methodological challenges we must face for the exploitation of LIDAR data in spatial analysis, particularly for the study of defendibility and locational decisions of early Roman fortifications in the area.

Pixels and sherds. Combining LiDAR and surface survey in Iberian Iron Age Landscape Research.

Ignasi Grau Mira

In this paper I present the use of geospatial technologies applied to archaeological surveys. We use the high-resolution spatial and temporal data obtained for the study of the ancient Iron Age and landscape in the Eastern area of the Iberian Peninsula (present-day Valencia region). We used high resolution LiDAR spatial data digital modelling to build digital models of the terrain with resolutions of 0.5 m. The technique was used to identify features as terraces and walls, and also to recognize the topographical factors that may have affected the configuration of the surface record. The topographic models is combined with the data obtained in surface survey. The dispersions of pottery are analysed to ascertain the greatest concentrations —which can be identified as settlements— and to offer other interpretations for zones with appreciably lower densities.

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Working with ALS – Lidar data in Central South Italy. Tips and experiences.

Jesús García Sánchez

The aim of this paper is to present and discuss my experience working with ALS – LIDAR data in Central South Italy and its applications to several projects in the area. These projects are chiefly survey projects conducted by Leiden University and the Dutch Institute in Rome (KNIR) around the colonies of Aesernia and Venusia (modern Isernia in Molise and Venosa in Basilicata), the survey of the Tappino Valley (Molise) and most recently, the excavation of Sant'Andrea in Gildone, Molise. Acknowledging the concerns about Lidar brought by colleagues at previous IMS meetings I will explain the process to acquire grey data, the current coverage of the Italian territory, the motifs and the agents of its production (perhaps less relevant for our aims), and other data characteristics such as provided data formats, resolution, ways of data processing (i.e. software) and the product usability. These issues will be illustrated with examples derived from the abovementioned projects.

"Of silver they possess a veritable fountain, a treasure chest in their soil": A New Project on Ancient Mining at Ari (Lavrion).

Hans Lohman & Andreas Kapetanios

The Laurion district in Southeast Attica is not only the largest, but also the most important and best preserved mining district of ancient Greece. Its core area comprises no less than 80 km² stretching from Cape Sounion in the South to Plaka in the North and from Thorikos in the East to Ari near Anavyssos in the West. With its enormous wealth of ancient remains, including mines, workshops, smelting places, towns, farmsteads, and sanctuaries, it forms a unique fossilised industrial landscape of the classical.

Although object of nearly 200 years of scientific research, many questions concerning the workflow from the extraction of the ore over its processing to the point of the emission of the famous Athenian owls still remain unsolved.

The new project presented here has started from the limited area of Ari near Anavyssos and tries to solve at least some of these open questions, thereby using up-to date scientific methods and interdisciplinary cooperation with D. Morin as a leading mining archaeologist, A. Photiadis, the director of IGME as geologist, processing specialists and archaeometallurgists. The project comprises an extensive and intensive survey at Ari (6 km²), the complete mapping of the area by aerial photos and LIDAR, the excavation of an ergasterion, which will be the first ever made under close surveillance of archaeometallurgists and other specialists in the field. Thereby among other things the ability of the so-called Olynthian mills for processing the ore will be tested by means of a handheld XRA. Finally the publication of an ancient workshop excavated by K. Tsaimou at Ari between 2005 and 2008 and of the excavations of O. and E. Kakavogiannis at the site of the later power plant at Thorikos in 1972 are part of the project.

Geophysical detection and invasive exploration of protohistoric salt production facilities in Puntone Scarlino (Tuscany, Italy): preliminary field results

Peter Attema, Wieke de Neef, Luca Alessandri, Bianca Maria Aranguren, Maria Rosaria Cinquegrana, Francesca Ippolito, Jan Sevink, Burkart Ullrich.

We present the preliminary data of a geophysical prospection carried out in 2015 at the Late Bronze Age *briquetage* site of Puntone Scarlino (likely salt production and related activities). The site is located on the borders of the former lagoon of Follonica near the Tyrrhenian coast. Magnetic gradiometry showed a series of positive and negative anomalies some of which were further looked into using Ground Penetrating Radar. In the campaign of October 2016 the geophysical observations were used to plan the excavation. Interestingly, a number of positive anomalies similar in form and magnetic signal upon excavation revealed different functional contexts. Also a pattern of large negative banana-shaped features were explored which appeared to belong to surfacing strata of imported lagoonal sand used in the production process. In combination with previous research at the site that revealed kiln structures and pottery debris in the form of large heaps of reddish, handmade pottery fragments, the research at Puntone will ultimately enhance our insights in the production process of the Italian variant of Bronze Age *briquetage* industry on the Tyrrhenian coast.

"Standing Buildings". examples of mapping and reconstructing the landscape of ancient cities through geophysical and satellite remote sensing techniques

Apostolos Sarris

A number of geophysical techniques can be applied for the mapping, recording and monitoring of standing buildings that are exposed above the surface. These cases however constitute a real challenge compared to the norm of the geophysical prospection which is mainly used for the mapping of buried architectural remains and archaeological landscapes. Even if we have an arsenal of techniques available, each one of the applied methods needs to be adapted to the problematics behind the archaeological inquiries. A number of examples will be demonstrated to indicate the problems and potential of geophysical approaches, spanning from the investigation of ancient theatres to the survey of historical churches, classical period tombs and tumuli, and shallow water submerged architectural remains. Coupled with other remote sensing methodologies such as laser scanning and photogrammetry, the particular methods can maximize the information content that can be retrieved and move a step further for a 4D monitoring of the monuments. The latter has been one of the goals of STORM project which in the case of the Fortezza castle in Rethymno, it focuses to the continuous observation of the stability of its fortifications.

Geophysical mapping at the landscape scale at protohistoric Crustumerium, preliminary results

Peter Attema, Nikolaas Noorda & Burkhard Ullrich

In the course of the archaeological work done at the protohistoric site of Crustumerium (north of Rome) the Groningen team has, thanks to a grant of the Netherlands Organisation of Scientific Research (NWO) been able to invest in geophysical research at the landscape scale. Currently the team is preparing the geophysical work for publication. In this paper we will summarize the results of various campaigns of geomagnetic mapping on-and off-site at Crustumerium and discuss these in relation with observations obtained from surface and subsurface archaeological investigations. Special attention will be given to an archaeological feature located on the transition of the settlement plateau and the burial ground of Monte Del Bufalo: a huge artificial hill with a complicated stratigraphy covering a series of superimposed tombs. The complex is currently being investigated using a combination of geophysical methods and excavation. The main argument of this paper is however that geophysical mapping of protohistoric sites at the landscape scale is extremely useful as it furnishes context to subsurface anomalies that in isolation would be difficult to understand and as such may form the basis for further fieldwork and implementation of cultural heritage strategies.

Distribution of Roman Settlements in the Agrigento-Hinterland-Survey

Rebecca Diana Klug

The Agrigento-Hinterland-Survey was conducted from 2008 to 2013. During this time 80 spots with roman ceramics were detected. 60 of these were surveyed intensively and were qualified as sites. These 60 sites can be dated by the ceramics. However, a deeper research of these ceramics is needed, in order to interpret the types or the functions of these sites.

The analysis of the sites dating to roman times, is a good starting point conduct further research on Roman settlement patterns in Sicily. In my paper I will try to develop a settlement typology for the Agrigento-Hinterland-Survey based on the typology of the roman sites in the chora of Gela.

This typology is based on the size of the sites, the density, the quantity and the quality of finds, as well as the natural environment. The investigated area was very heterogeneous – from the fertile Platani-valley up to the Monti Sicani. To look for dependencies, the data is supplemented by some GIS applications.

The urban architecture survey at Haliartos (Boeotia)

Lieve Donnellan, Yannick Boswinkel & Anthony Snodgrass

A special study season was dedicated in August 2016 to surveying the visible architectural remains at the ancient town of Haliartos (Boeotia). During previous survey activities (ceramic survey, geophysical survey and remote sensing) of the Boeotia Survey Project, the presence of significant visible parts of architecture were observed at Haliartos. The city walls in particular have been the object of repeated but superficial stylistic and chronological schemes since the 1920's.

It was decided to initiate a new type of survey, with an exclusive focus on the stone blocks and walls, to see what new sorts of information could possibly be extracted from the architecture and how this new data could complement existing datasets. Without having established procedures at hand, the survey was conducted and invented "on the go". Each structure was positioned with a GPS, catalogued and photographed. This basic dataset proved to be a very rich source of topographical information, urban lay-out, architectural styles and building techniques and thus also on broader socio-economic patterns, as well as, uniquely, it turned out to shed light on some historical events.

This paper will discuss procedures used, give a brief overview of the most important structures and discuss some preliminary results and methodological issues from our study.

From City Block to Neighbourhood

Hanna Stöger

Three city blocks of Ostia, Rome's harbour city, serve as case studies to allow insights into the past urban environment, and offer a wealth of spatial data able to reveal suggestive glimpses of the urban community that once lived within these city quarters. The blocks selected for close analysis are located in different areas of the city; they vary in layout and spatial composition and cover different time periods. Extensive archaeological and spatial data are available in published and unpublished form for block IV ii (Stöger 2011), in published form for block V ii (Boersma 1985), while block IV iv has until now attracted only limited scholarly attention. The latter's vicinity to the forum and its long period of occupation, reaching from the Republic period to Late Antiquity, makes this city block of particular interest. The proposed paper will focus on block IV iv, providing new information based on the recording of the standing structures applying extensive remapping, dGPS positioning, 3D recording, 3D printing, low-altitude aerial photography using drones, and it presents data retrieved from intensive archival studies (excavation reports, site plans and photographic records).

The Therasia Island Project. Integrating data for the study of the prehistoric landscape'

K. Sbonias & E. Farinetti

The research on the small island of Therasia in the caldera of Santorini, in the framework of the project 'Island cultures in a diachronic perspective: the case of Therasia', aims to a comprehensive study of the overall landscape history of the island, previously almost unknown. Goal of the present paper is to focus on the integration of data for the study of the prehistoric landscape and discuss ways of proceeding with its study.

The main archeological work focuses on the study of the settlement site at Moni Koimisis, at the south-eastern tip of the island, where an important prehistoric settlement has been discovered by the archaeological survey and is being excavated in the last three years by Ionian University and University of Crete in co-operation with the Ephorate of Cyclades. The archaeological survey at the site, the geological and geomorphological investigation, the geophysical prospection and the trial trenches that were carried out till now, help us integrate data, check methodologies and test the reliability of survey data, in order to investigate the prehistoric phases at Therasia island and relate them to the pre-eruption island of Thera.

Contexts in caves – caves in context

Wieke de Neef & Burkart Ullrich

How do we deal with site types we know are present in archaeological landscapes, but are difficult to investigate systematically? This paper is inspired by the archaeological surveys of the Groningen Institute of Archaeology in Calabria (southern Italy), where archaeological materials from remote caves were reported by local speleologists. Because of the logistic and financial challenges of cave research, these sites were not investigated beyond the study of the artefacts handed over by the explorers.

Here we present the preliminary results of a pilot project to test and evaluate the use of two common geophysical methods, electrical resistivity tomography (ERT) and ground penetrating radar (GPR) for the detection of prehistoric remains in limestone caves. The project focuses on four caves with known prehistoric contexts in Lazio (central Italy), selected because of their accessibility and partial excavation. The excavation records allow to calibrate and interpret the geophysical data. These four caves, Mora Cavorso, Regina Margherita, La Sassa and Pistocchino, present a range of common cave situations challenging for archaeological prospection including fine cave sediments, roof collapses in large and small blocks, lime sintering, and measurement effects in hollow areas.

The paper will give an overview of the methods and results, and will reflect on the potential of the used approach for the systematic, non-invasive study of archaeological cave contexts.

Aegean landscapes of the early Middle Ages: new perspectives from Naxos

Sam Turner & Jim Crow

Interdisciplinary research on the island of Naxos is beginning to reshape our understanding of the Byzantine response to the major challenges in the period from the 7th century onwards. The rural Mediterranean societies of the early Middle Ages have often been absent from discussions based on survey archaeology, which have depended on poorly-understood ceramic evidence. Using a combination of techniques including intensive field survey, analysis of standing buildings, and new scientific approaches to dating of agricultural terraces, research around the early medieval fortified town of Apalirou Kastro on Naxos is revealing a thriving landscape of villages, churches and intensive farming. The evidence suggests the 7th, 8th and 9th centuries witnessed the growth of new settlements and extensive investment in landscape infrastructure during the early medieval period.

Recording Vernacular Buildings and Archaeological Survey

John Bintliff

Traditionally field survey teams when confronted by standing ruins have limited their focus to ancient or prehistoric structures, less often those of medieval age, but the growing interest in the post-medieval period calls for equal attention to domestic and other buildings of the last 500 years. In this paper I shall discuss how we can integrate such records into the wider interpretation of the post-medieval era using our own experience in the Aegean.

From the field to the deposit, and back. The Halos area in the (Late?) Bronze Age.

Vladimir Stissi (based on preliminary work by Ailbhe Turley and Waiman Yeung).

As part of the ongoing preparation of the publication of the surveys around Halos (Thessaly, Greece), several students have started looking at the finds from our larger Middle-Late Bronze Age sites. This material is quite frustrating: although the surveyed area is almost within sight of a concentration of major Mycenaean finds, including one or two palaces, rich tholos tombs and tons of very nice, fine, decorated pottery, and there are some 'proper' Mycenaean excavated sites in the area itself, even the 'best' surveyed sites offer barely anything which connects to this world. The survey finds are generally plain, coarse and simple. One possibility is that the survey finds are pre-Mycenaean. In that case, we could ask ourselves why a fertile and usually densely settled area seems empty in a flourishing period. An alternative could be that the surveyed sites somehow remained largely outside of what we consider the dominant culture of the period. Could plain, coarse and simple pottery help us to answer such questions?

Phaistos Project: New Data from the Archaeological Survey in Phaistòs

Fausto Longo & Amedeo Rossi

Archaeological research conducted within of the Phaistos Project directed by the Universities of Salerno (Prof. F. Longo) and from the Ephoria of Iraklion, allowed to undertake a number of multidisciplinary investigations and to recover new data that have permitted to reconstruct the context environmental and geomorphologic in which Phaistos was developed.

The study focused particularly on the reconstruction of paleo-topographical areas of the ancient settlement. This type of investigation has allowed to trace the physical and environmental limits in which was developed the town, especially as regards its being archaic and classical period. Part of this work has been devoted to reconstruct in detail the joints of the modern and ancient landscape through surveys of remote sensing (geoarchaeological surveys, aerial photo, satellite) and through fields surveys and excavations. The Remote Sensing in this case, with its various techniques, offers the rapid acquisition of a huge quantity of metric and qualitative data in order to describe or to identify archaeological features. For an appropriate and widespread use of these data, it is necessary to have recourse to GIS techniques; only the combined use of both methodologies provides a full exploitation of their potential for an in-depth understanding and an effective utilization of data related to an archaeological settlement. This approach allowed to draw up a detailed geomorphologic map of the area of the ancient settlement and the development of a three-dimensional model of the soil (DEM). The interrelationship of the geo-environmental and archaeological records offers new prospects of the knowledge on the history and urban topography of Phaistos