

Workshop

Recent Advances in Water Management Studies in the Archaeology of Arid Landscapes

27-28 May 2024

Organised by: Nazarij Buławka (MSCA postdoctoral fellow)

Landscape Archaeology Research Group (GIAP)

Catalan Institute of Classical Archaeology (ICAC-CERCA)

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The workshop aims to bring together researchers specialising in archaeology and water management in arid landscapes. Water management plays a vital part in archaeological research related to the emergence of complex societies, ancient economies, population dynamics, and the role of agriculture in early empires. Irrigation is also among the earliest examples of large-scale human modification of landscapes. Therefore, such studies go beyond archaeological interest and touch on today's critical issues, including human impact on the environment, climate change, sustainability, and resource management. Landscapes and irrigation features are diverse, requiring different research methods.

The two-day workshop provides an overview of recent advances and issues in water management research in archaeology. Selected topics include textual records, geomorphology, remote sensing, computational modelling, and machine and deep learning methods. Progress resulting from the UnderTheSands project will be presented. Each block of the workshop will cover a different approach to the studies, types of water management or structures, and dedicated research regions: North Africa, the Near East, the Caucasus, Central Asia, and Northwestern India.



The workshop aims to advance archaeological water research by promoting future research collaboration and creating an environment that encourages developing and exchanging novel research methods.

Keywords: water management; hydraulic landscapes; remote sensing; machine learning; deep learning

MONDAY 27 MAY (DAY 1)

	10:30 – 10:45	Opening
Barbara Cerasetti (Freie Universität Berlin; ISMEO)	10:45 – 11:30	Endorheic water systems in Central Asia: the contribution of remotely sensed images in the reconstruction of the ancient network and settlement pattern of the Murghab alluvial fan (southern Turkmenistan)
Roberto Arciero (Leiden University)	11:30 – 12:15	Climate Change, Agricultural Strategies, and Irrigation Management in Southern Turkmenistan during the Bronze Age: Case Studies from the Murghab
	12:15 – 12:45	Coffee-break
Kristen Hopper (Durham University)	12:45 – 13:30	Water management systems in northern Iran and southern Turkmenistan in long-term perspective – evolution, adaptation, and the impact of empire
Louise Rayne (Newcastle University)	13:30 – 14:15	Detecting traditional water management systems in North Africa and their long-term sustainability
	14:15 – 15:45	Lunch
Nazarij Buławka (ICAC-CERCA)	15:45 – 16:30	Ancient irrigation detection and analysis using advanced remote sensing methods
	16:30 – 17:15	Discussion
	17:15 – 17:45	Coffee-break
	17:45 – 18:30	Discussion continuation
	20:00	Dinner

TUESDAY 28 MAY (DAY 2)

	10:30 – 10:45	Opening
Arnau Garcia-Molsosa (ICAC-CERCA)	10:45 – 11:30	Computational Approaches to the Long-term Relationship between Human Societies and the River Morphodynamics in the Alluvial Plains of the Indus Basin
Krzysztof Jakubiak (University of Warsaw)	11:30 – 12:15	Changes of the water management on the Ararat Plain, what we know about Urartian irrigation systems.
	12:15 – 12:45	Coffee-break
Emily Hammer (University of Pennsylvania)	12:45 – 13:30	Remote Sensing and Archaeological Survey Evidence for Hydrology and Irrigation Systems in Relationship to the Early Middle Eastern Cities: Case Studies from Iraq and Azerbaijan
Jaafar Jotheri (University of Al Qadisiyah)	13:30 – 14:15	Irrigation canals in southern Mesopotamia: from landscape to laboratory
	14:15 – 15:45	Lunch
Stephanie Rost (City University of New York)	15:45 – 16:30	Managing the Tigris in late 3rd millennium Mesopotamia
	16:30 – 17:15	Discussion
	17:15 – 17:45	Coffee-break
	17:45 – 18:30	Future collaborations & workshop closing remarks