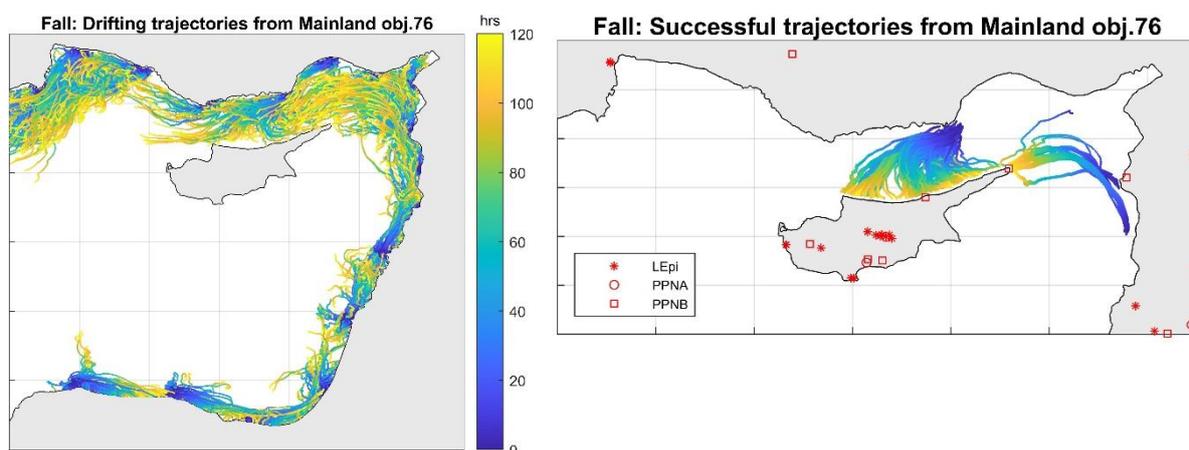


Simulating potential seaborne human mobility in the early prehistoric Eastern Mediterranean: An interdisciplinary perspective on achievements and prospects

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Maritime human mobility in the context of population dispersals, such as water-crossings, seafaring and island colonisation, underpins frontier research in archaeology and allied disciplines (Anderson, Barrett and Boyle, 2010; Bird *et al.*, 2019). Maritime mobility also controls the degree of seaborne interaction between origin and destination regions, which in turn is essential for understanding maritime networks, such as raw material circulation networks (Leidwanger and Knappett, 2018). The elucidation of spatiotemporal patterns regarding early prehistoric maritime mobility in the Mediterranean, in particular, has attracted global attention (Dawson, 2014; Hölzchen *et al.*, 2022). Within this context, the island of Cyprus occupies an important position as it has been insular since the Miocene, and therefore any archaeological evidence of early human presence/activity on the island implies seaborne mobility. The onset of the Holocene (circa 12,000 years before present) is a critical period for understanding the origins of early visitors/inhabitants to Cyprus in connection with the spread of Neolithic cultures in the broader Eastern Mediterranean. Considerable debate, however, still exists (Lazaridis *et al.*, 2022) as to: (i) where these early Holocene visitors/inhabitants originated from – Anatolia and/or the Levant being two suggested origins based on similarities of the material record, and (ii) possible routes they might have followed to reach the island. Against this backdrop, this talk outlines relevant recent results (Kyriakidis *et al.*, 2022) obtained in the context of the research project *SaRoCy: Delineating Probable Sea Routes between Cyprus and its Surrounding Coastal Areas at the Start of the Holocene: A Simulation Approach*.

More generally, however, maritime human mobility is an example of highly complex human-environment interaction, influenced by a multitude of factors varying over several spatial and temporal scales; its modelling calls by definition for a multidisciplinary perspective and associated expertise. This talk also argues that efforts towards simulating early prehistoric maritime mobility should be explicitly linked to cognitive factors influencing human decision-making, as well as to palaeo-demographics, and especially to dynamical process simulating population growth or decline and information/cultural transmission. Doing so requires new models that distinguish between individual and group-level seaborne mobility, and formally account for destination choice and path planning mechanisms. Such models are expected to provide fundamental insights into the highly elusive links between potential and realized mobility, and ultimately are more likely to have a greater scientific impact.

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Project SaRoCy (<http://sarocy.cut.ac.cy>) was implemented under the "Excellence Hubs" Programme of the RESTART 2016-2020 Programmes for Research, Technological Development and Innovation administered by the Research and Innovation Foundation of Cyprus – contract number: EXCELLENCE/0918/0143.