You are invited to

The Physics Department Colloquium

Entropology: an information-theoretic approach to understanding archaeological data

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In collaboration with: Paula Gheorghiade (U of Helsinki), Vaiva Vasiliauskate (ETH Zurich), Henry Price (ICL), Sasha Diachenko (U of Kyiv), Tim Evans (ICL)

In this talk we shall look for ways in which archaeological datasets can give information about the society that produces them, as exemplified by Late Bronze Age Cretan ceramic assemblages catalogued by Dr Paula Gheorghiade from what might loosely be termed the ‘Minoan-Mycenaean transition’. Such archaeological data is highly multivariate and to proceed it is necessary to implement a dramatic reduction in the dimension of artefact space. Identifying the artefacts with the labels in this reduced space lets us think of assemblages as ‘word-heaps’ whose information content can provide clues about Cretan society. We analyse our assemblages using syntactic tools taken from ecology (think of our word-heaps as the labels of insects in bug-traps), using different entropies and their induced diversities as a proxy to explore cultural change and separation (e.g. see [1] by one of us). This phenomenological approach is complemented with semantic tools taken from theoretical economics that use utility and which allow us to incorporate ‘value’ in our analysis (think of our word-heaps as the clothes labels of shopping trips). Because of limited data our results are incomplete but promising.

Reference:
When: Wednesday, June 8, 2022 02:00 PM (Jerusalem)

Where: over Zoom

https://us02web.zoom.us/j/88678382058?pwd=Rmx0dURkbHBzV2oxRS9xclZnaFY3QT09

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