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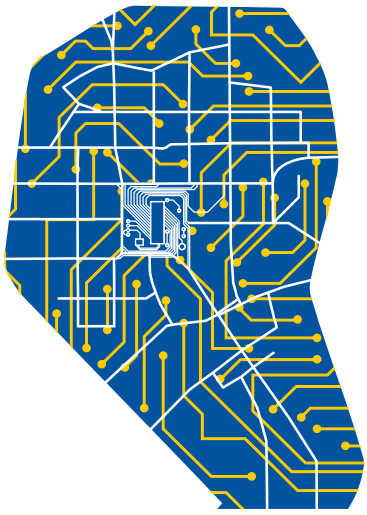

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Unsupervised techniques for shape analysis of Iberian ceramics based on Geometric Morphometrics

Pablo Navarro, Celia Cintas, Manuel Lucena, Jose Manuel Fuertes, Claudio Delrieux, Manuel Molinos Mail

The morphological analysis of ceramic pieces allows to establish the chronology, functionality and origin of the samples. The conformation of a typology of ceramic materials is made by analysing several aspects, such as shape, functionality, the context in which they were found, etc. Traditional studies are based on an intuitive recognition by the domain expert, which uses idealised shapes for creating the classification criterion. Other analysis collect linear measures such as height, width, thickness or ratios between them (maximum width / maximum length) to describe artefacts. The lack of a standardised protocol means that the classifications are partial and the analysis can not be easily compared or replicated by other researchers. Geometric Morphometrics provides a set of techniques that allow to quantitatively analyse the size, shape and variation between objects. In archaeology these techniques have been used for the analysis of rock representations, study of projectile tips, and ceramic vessels. The approach presented in this paper shows the typification in an unsupervised way using automated computer methods, based on concepts of Geometric Morphometrics and Principal Component Analysis. In addition, a Clustering study is carried out to determine the geometric space made up by a set of Iberian pottery from the upper Valley of Guadalquivir (S. VI B.C. - I A.C.).

What can GMM do for you?

Katrien Gwennola Janin

When coming across Geometric morphometrics (GMM) for the first time, it can appear to be a daunting and complicated technique. Questions ranging from 'will it be beneficial to my investigation?' to 'where on earth do I start?' are common, yet unfortunately answers are not that readily available. The proposed talk aims to provide people new to GMM with an overview of what GMM is, what it can and cannot do you for you, and how to take your first tentative steps into the world of shape analysis through the use of GMM.