

ON MATHEMATICAL MODELLING OF NEOLITHIC POTTERY FORMING TECHNIQUES

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Pottery building techniques act as valuable indicators for recognising ancient cultures and practices. The characterisation of the forming sequence allows to retrieve the technical traditions of the past and to identify communities of practice. This presentation will focus on the mathematical characterisation of pottery forming sequence based on tomographic data of archaeological and experimental sherds.

Recent studies [1, 2] will be presented proposing a method for distinguishing between two ancient pottery forming techniques: coiling and Spiralled Patchwork Technology (SPT) [3]. The procedure make use of tomographic 3D data visualisation and processing to examine the internal structure of pottery sherds and to develop a quantitative approach based on the 3D Hough transform. This method could help identify the origins of SPT pottery tradition and track how different traditions spread throughout the Mediterranean and Europe.

References

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- [2] K. Dia, V.L. Coli, L. Blanc-Féraud, J. Leblond, L. Gomart, D. Binder, *Applications of Learning Methods to Imaging Issues in Archaeology, Regarding Ancient Ceramic Manufacturing*, *Proceedings of the 2nd International Conference on Deep Learning Theory and Applications - DeLTA*, (2021), pp.109–116.
- [3] L. Gomart, D. Binder, L. Blanc-Féraud, L. Cassard, S. Cohen, V.L. Coli, M. Gabriele, J. Leblond, F. Orange, D. Pisani, S. Sorin, *From macrotraces to micro-tomography: a multi-scale approach for detecting and characterizing the "Spiralled Patchwork Technology" in Northern Mediterranean Neolithic pottery assemblages*, *Actes de la Séance de la Société préhistorique française*, 18 (2022).