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# Contributions to the interpretation of the contexts of use in archaeological sites of hunter-gatherers from image analysis (RIMAPS)

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## Abstract

Since the beginning of microscopic traceological studies one of the objectives pursued by traceologists was the search of quantitative variables which allowed the identification of use-wear patterns. Recently this issue has been revisited using methodologies developed in the field of Materials Science and the results are quite promising. These methodologies are based on the measurement of topographic or textural characteristics of lithic surfaces in order to identify use-wear patterns and to describe structural transformations produced as a consequence of specific prehistoric activities. Within this framework, the RIMAPS technique (Rotated Image with Maximum Average Power Spectrum) allows to characterize mathematically the typical topographic patterns of any surface by using digital images, independently of the optical medium used to capture these images.

Following this perspective, this work is aimed to offer the results obtained by the application of image analysis by RIMAPS on experimental lithic artifacts used for working hide, wood and bone as well as to assess the robustness of RIMAPS as analytical method for studying use-wear traces and the use context of lithic tools produced by hunter-gatherers.

The specific objectives are: 1) To provide a mathematic and topographic identification of use-wear patterns on experimental lithic artifacts manufactured using different raw materials; 2) To analyze the influence of different mineralogical-textural properties of rocks on the use-wear patterns formations through the use of mathematical models and 3) To compare the obtained results on quartzites and ftanites with those obtained on rhyolites.

Finally, we will intend to define quantitatively and topographically use-wear traces, detect and visualize use-wear patterns in those raw materials, which are more difficult to observe using traditional optical media, and to identify use wear trends which cannot be easily identified by simple observation.

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