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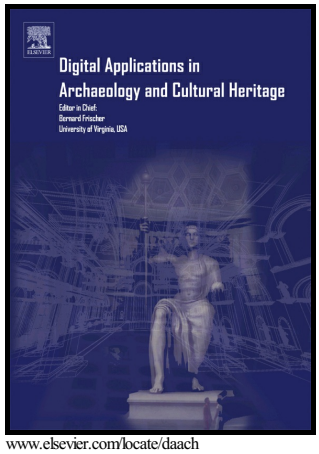

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Tailoring 3D Modelling Techniques for Epigraphic Texts Restitution. Case Studies in Deteriorated Roman Inscriptions

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Abstract

Digital Image Modelling is becoming a standard approach in epigraphic studies, mostly expressed in the diffusion practice of research groups which want their materials being publicly accessible. However, there is an important lack of works which seek for the use of 3D tools to improve the epigraphic analysis and text reading. Therefore, this paper attempts to show the application of Photogrammetry Structure from Motion and Digital Image Modelling to 3D record and analyse inscriptions that are in poor state of preservation, aiming to resolve some text-restitution problems and contribute towards the definition of new methodologies in Roman epigraphy.

Keywords

3D modelling; Photogrammetry SfM; MeshLab; Roman Epigraphy; *Gallaecia*

1. Introduction

The expansion of 3D modelling throughout the Humanities has contributed to the opening of new methodological approaches, such as the reconstruction and virtual representation of archaeological sites or objects (Babeu 2011). This is particularly clear in Spanish epigraphic studies, where Digital Image Modelling (hereafter DIM) is becoming a standard approach in epigraphic studies with the development of new data-share politics among research groups and museums. This is the case for example of the "Virtual Museum of Los Bañales" (Zaragoza, Spain) (Andreu Pintado 2018), where epigraphic and archaeological remains are being digitalised in order to make them available on the Internet, but also the case of the National Archaeological Museum in Madrid (Madrid, Spain) and the National Museum of Roman Art in Mérida (Badajoz, Spain), which offer an online selection of 3D models of Latin inscriptions in the "Epigraphia 3D" project (Ramírez Sánchez et al. 2015). Both cases are good examples of the expansion of 3D modelling through epigraphic studies, using WebGL platforms (e.g. "Sketchfab", "Verold Studio", "P3D") or electronic devices, such as tablets or smartphones (Ramírez Sánchez et al. 2014; Ramírez-Sánchez, Guerra Soto 2016; Barmpoutis, Bozia 2017).

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