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## Image-based 3D modeling for the knowledge and the representation of archaeological dig and pottery: Sant'Omobono and Sarno project's strategies

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**Abstract.** This paper presents a "standard" method that is being developed by ARESlab of Rome's La Sapienza University for the documentation and the representation of the archaeological artifacts and structures through automatic photogrammetry software. The image-based 3D modeling technique was applied in two projects: in Sarno and in Rome.

The first is a small city in Campania region along Via Popilla, known as the ancient way from Capua to Rhegion. The interest in this city is based on the recovery of over 2100 tombs from local necropolis that contained more than 100.000 artifacts collected in "Museo Nazionale Archeologico della Valle del Sarno". In Rome the project regards the archaeological area of Insula Volusiana placed in Forum Boarium close to Sant'Omobono sacred area. During the studies photographs were taken by Canon EOS 5D Mark II and Canon EOS 600D cameras. 3D model and meshes were created in Photoscan software. The TOF-CW Z+F IMAGER® 5006h laser scanner is used to dense data collection of archaeological area of Rome and to make a metric comparison between range-based and image-based techniques. In these projects the IBM as a low-cost technique proved to be a high accuracy improvement if planned correctly and it shown also how it helps to obtain a relief of complex strata and architectures compared to traditional manual documentation methods (e.g. two-dimensional drawings). The multidimensional recording can be used for future studies of the archaeological heritage, especially for the "destructive" character of an excavation. The presented methodology is suitable for the 3D registration and the accuracy of the methodology improved also the scientific value.

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