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Image-based identification of ancient masonry texture: building archaeology, structural engineering, and computer science for cultural heritage analysis

Wednesday, 28 May 2025 – 9:30 a.m. - 5:00 p.m.
Hybrid format

Roma Tre University, Department of Civil, Computer Science and Aeronautical Technologies Engineering - **Seminar Room**, Via Vito Volterra 62, 00146 Rome + **Online** ([Link](#))

Topics



The seminar aims to foster interdisciplinary dialogue on the recognition and analysis of ancient masonry textures through stratigraphic methods, structural modelling, and image processing. It addresses the needs of building archaeology and structural engineering in texture interpretation, proposes classification criteria, and showcases methodologies informed by recent developments in computer vision.

Speakers

- Gianmarco de Felice, Stefano De Santis, Pietro Meriggi**
– Roma Tre University, Department of Civil, Computer Science and Aeronautical Technologies Engineering (Rome, Italy)
- Hélène Dessales** – École normale supérieure PSL, Laboratoire AOROC (Paris, France)
- Lorenzo Fornaciari** – École française de Rome (Rome, Italy)
- Arnaud Montabert** – École normale supérieure Paris-Saclay, Laboratoire de Mécanique Paris-Saclay (Gif sur Yvette, France)
- Roberta Santarelli** – Sapienza University of Rome, Department of Ancient History (Rome, Italy)

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More info at: Pietro Meriggi – pietro.meriggi@uniroma3.it

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Detailed programme

09:30 – 10:00

Research Framework

Pietro Meriggi

10:00 – 10:30

An Overview on the Discrete Modelling of Masonry

Gianmarco de Felice

10:30 – 11:00

Image Segmentation Techniques for Masonry Texture Identification: Perspectives for Finite Element Models (FEM)

Arnaud Montabert

11:00 – 11:15

Coffee Break

11:15 – 11:45

3D DEM Structural Analysis of Archaeological Heritage: From Digital Survey to Monitoring-Based Calibration

Stefano De Santis

11:45 – 12:15

AI and Digital tools for the Quantitative Analysis of Roman Brick-faced Masonry

Lorenzo Fornaciari

12:15 – 12:45

Applications of Photogrammetry in Archaeology: Analysis of Masonry Textures and Crack Patterns in Ancient Monuments

Roberta Santarelli

12:45 – 14:30

Lunch Break

14:30 – 16:45

Roundtable / Open Discussion: Feedback from the archaeological reading in the Archaeological Park of Pompeii with Pr. *Hélène Dessales*

All speakers and interested participants

Establishment of a Research Group aimed at the development of an interdisciplinary approach to the automatic identification of masonry texture, with a focus on the study and conservation of cultural heritage.

16:45 – 17:00

Closing Remarks

Pietro Meriggi