

# REVISITING THEORETICAL FRAMEWORK OF COMPUTER-BASED MODELING AND VISUALIZATION OF ARCHITECTURAL CULTURAL HERITAGE

## Session

Computer-Based Modeling and Visualization of Architectural Cultural Heritage (CMVCH) has been a tool and method to represent and study the past for almost 40 years. In the course of technological advances and rapid changes in societal modes of communication, the distinction between the two, tool and method, became blurred. Recent years have also brought radical changes in modes of communication, if only due to pandemics, which force a revision of paradigms of virtual presence, including digital heritage models. While advancing operational efficiency and applying new technologies, we notice a growing need for more theoretical coherence between disciplines involved in the process.

The object-based research in archeology, art and architecture lacks common conceptual framework, which leads to difficulties in mutual understanding in interdisciplinary environments. In result the 3D communities are talking to each other, but they are not communicating effectively. Some general terms, like “virtual reconstruction”, are used and established in the digital humanities domain, even if they are disputable in terms of their actual meaning and methodological reference. Some new concepts, like the Critical Digital Model or Scientific Reference Model, reflecting methodological advances and praxeological aspects of the domain, need to be discussed and, possibly, commonly accepted. Even if the essential theoretical foundations for hypothetical virtual reconstructions of architectural heritage have been developed (London Charter and Seville Principles), they rather mark direction towards practical guidelines and standardization, leaving the core theoretical framework to be developed. Such a framework would allow the reliable creation and evaluation of CMVCH models within a diverse digital humanities community.

In this session, we encourage to revisit these basics of common understanding, referring to advances in digital humanities practice and the discussion from the CHNT 2022 Round Table “Computer-based Visualization of Architectural Cultural Heritage in Education – Defining standards, methodology and implementation of courses in higher education sector”. Theoretical reflections based on practical experiences are also welcome.

The area of CMVCH is multidimensional, so we also encourage considering the theoretical aspects of cultural context, semantic enrichment, and infrastructure issues, including Open Access repositories for created models.

It is necessary to ask ourselves again the fundamental and seemingly obvious questions: What is a virtual model of heritage? What is virtual reconstruction? Are we even able to “reconstruct” the past? What are possible kinds of models used in the 3d visualization of architectural cultural heritage? Is it possible to establish common language between disciplines within digital humanities and their 3D data sets?

## **Motivation**

The widespread diffusion and use of 3D models in the field of object-based research in archaeology, history of art and architecture is a fact., Acknowledgement but above all the need to be considered these models as products of scientific research in all respects and their as such shared, discussed and evaluated, has brought out the need for bringing up the problem of discussing and deepening greater theoretical coherence between the disciplines involved in the process. The purpose is in order to define some common theoretical bases on which to build the entire framework of scientific research that uses and produces 3D digital models as a result of reconstruction of the past.

## **Target Audience**

The session is aimed at all researchers and scholars who in the fields of archeology, history of art and architecture, the history of the city use, produce or study digital virtual reconstructions relating to the architectural cultural heritage.

## **Keywords**

#hypothetical virtual reconstructions, #digital humanities, #architectural heritage modeling, #digital heritage