

## **HERITAGE UNDER CLIMATE CHANGE THREAT: Innovation, mitigation, adaptation and education for resilience**

### **Session**

Climate change has recently emerged as a key threat to cultural heritage with a marked impact on archaeological sites, historical landscapes, artifacts, heritage buildings, landmarks and intangible traditions, further posing challenges for the research, preservation and dissemination of our shared legacy. The impact of climate threats to cultural heritage is especially relevant to coastal regions, where substantial reconfiguration is taking place due to sea-level rise and inundation. The CAA-GR invites scholars to an open discussion on the impact of climate change on heritage, adding to a growing body of multidisciplinary research that tackles our changing world in preparation for future challenges. We welcome archaeologists, Earth scientists, material scientists, geospatial experts, digital humanities researchers, etc., to bring forth their research and innovation, and highlight challenges in: (a) data collection, mapping and modeling of potential climate change impacts; (b) facilitating continuous long-term monitoring of cultural and natural heritage to document the evolution of changes; (c) developing appropriate mitigation and adaptation measures to counter risks and threats, while avoiding maladaptation; (d) identifying innovative practices for a dynamic, inclusive and participatory cultural response to risks; (e) investigating ways in which communities could be actively involved in safeguarding cultural heritage.

### **Motivation**

According to the UN, "Climate change refers to long-term shifts in temperatures and weather patterns." Pattern shifts have only been occurring due to natural causes, until the 1800s, when intense human activities, primarily due to burning fossil fuels like coal, oil and gas, became a major contributing factor. Since that time, the Earth has become about 1.1°C warmer, with the decade 2011-2020 being the warmest on record. Although a limit of 1.5°C rise has been suggested by many scientists as an upper bound for containing the impact, the current policies in place are estimated to lead to a 2.8°C rise by the end of the 21st century. Practically, climate change is manifested as a percentage rise of carbon dioxide and methane in the atmosphere with direct impact on the global temperature that accelerates ice melting and sea level rise, and ignites more frequent severe weather events. In addition, the relative increase in humidity near water bodies provokes changes in the biosphere resulting in extreme biological contamination. This change affects all types of heritage assets, including (a) monuments, sites, and (b) artifacts in sites, like frescoes and mosaics, threatened with submerging, degradation, collapse, etc., in various time scales, as well as (c) artifacts in collections, that will need intensified efforts for micro-climatic control potentially resulting in less-green museums and further accelerating climate change.

### **Target Audience**

Archaeologists, Earth scientists, Material scientists, Conservation specialists, Geospatial experts, Digital Archaeology researchers, Heritage managers, Sustainable design experts

**Keywords**

#Climate change #cultural heritage #natural heritage #archaeology #resilience