

Session ID: SHM-5

Title

SEISMIC STRUCTURAL HEALTH MONITORING OF HISTORICAL STRUCTURES OF 20TH CENTURY

Convenors

E. Lenticchia ¹, R. Ceravolo ¹, F. Romeo ²

Description

The analysis and conservation of architectural heritage, especially concerning their seismic performance, represent one of the most relevant topics addressed by the international scientific community. Historical constructions are typically complex structures whose behavior under earthquakes is still an open issue. In this context, Seismic Structural Health Monitoring (SSHM) plays an important role in the preservation of architectural heritage, especially when it can support a rapid and reliable assessment of damage. Furthermore, data from monitoring systems are increasingly employed to calibrate numerical models for structural assessment and simulations aimed to define the fragility of a specific structure or structural typology.

This technical session aims at discussing the latest developments in SSHM applied to historical structures and infrastructure and the development of innovative solutions to identify seismic and structural vulnerability, such as the employment of satellite-based data. The technical session encourages sharing opinions and presenting recent studies concerning the advancement of SSHM of historical structures and infrastructure. Contents of interest include, but are not limited to, the following topics:

- Architectural heritage of the 20th century;
- Shell and spatial structures;
- The role of SHM in defining the seismic vulnerability of historical structures and infrastructures;
- Dynamic identification;
- Satellite-based SHM;
- Model calibration;
- Vibration-based strategy for the assessment of the structural health and damage detection;
- Experimental results;
- Presentation of case studies.

Invited Speakers

A. Manuello ¹, M. Garlock ³, C. Chesi ⁴, S. Gabriele ⁵, D. Abruzzese ⁶, A. Micheletti ⁶, H. Corres Peiretti ⁷, F. Marmo ⁸

Affiliations

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