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Session ID: SHM-1

Title
SEISMIC STRUCTURAL HEALTH MONITORING FOR CIVIL STRUCTURES

Convenors
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Description
During the last two decades, due to a need and a growing interest by both researchers and professionals, seismic structural health monitoring (SHM) has evolved. Numerous monitoring systems installed in structures in various seismic-prone countries utilize real-time or near-real-time responses recorded during strong earthquakes to make informed decisions related to the health of their structures. These data have strategic importance both for the advancement of knowledge on the behavior and performance of structures under strong seismic actions and for the calibration of realistic and reliable numerical models that are aimed to reproduce the structural behavior and to formulate a diagnosis about possible damages. Furthermore, the possibility to assess the seismic vulnerability based on data recorded on the monitored structure opens new avenues in maintenance policies, shifting from traditional scheduled maintenance to condition-based maintenance, carried out on demand or automatically, based on the current structural condition.

The aim of this Technical Session is to report recent advances in this field and successful applications for civil structures and infrastructures: buildings, bridges, historical structures, dams, wind turbines, and pipelines. The session deals with theoretical and computational issues and applications and welcomes contributions that cover but are not limited to, seismic SHM algorithms for identification and damage detection, requisite strong motion arrays and real-time monitoring systems and projects, instrumentation, and measurements methods and tools, optimal sensors location, experimental tests, integration of seismic SHM in procedures for risk assessment and emergency management.

This session will thus provide a venue for the exchange of information on ongoing developments and assess the successes and limited successes of SHM.

Invited Speakers
C. Gentile [1], D. Spina [4], C. Rainieri [5], G. Fabbrocino [6], F. Ponzo [7]

Affiliations
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