Session ID: NSE-3

Title
FLOOR RESPONSE SPECTRA FOR SECONDARY AND NONSTRUCTURAL ELEMENTS IN ORDINARY AND MONUMENTAL BUILDINGS

Convenors
S. Degli Abbati [1], M. Di Domenico [2], V. Vukobratovic [3]

Description
Secondary elements (SEs) and nonstructural components (NSCs) are not crucial for the structural integrity, nor they are a part of the structural load-resisting system, so their seismic response can be considered separately. Typical examples are partition walls or parapets, that are relevant for the building functionality, but also pinnacles or artistic assets, that can have a remarkable value in monumental buildings due to their economic and cultural importance.

Damage of SEs and NSCs is a recurring topic, even when considering seismic intensities lower than those producing structural damage, and its repercussions are critical from cultural and monetary loss and life-safety risk perspectives. SEs and NSCs are commonly classified depending on their sensitivity to accelerations, deformations, or both. This session focuses on the acceleration-sensitive ones, whose seismic demands are usually considered by using floor response spectra (FRS). As the input for the seismic assessment of SEs and NSCs, FRS have attracted the attention of researchers worldwide. In the last few decades, significant efforts have been made to understand better the parameters influencing them, and to propose and validate expressions for their prediction.

This technical session aims to offer an opportunity to share experiences and to discuss the recent advances in this field, with an emphasis on ordinary and monumental buildings. Contributions may include (but are not limited to):
- Numerical and experimental methods for the assessment of FRS
- Discussion of code provisions
- Use of FRS for the assessment of artistic assets in cultural heritage
- Use of numerically and experimentally obtained data, as well as data from instrumented buildings, to assess the parameters influencing FRS
- Characterization of structural and SE/NSC dynamic properties in ordinary and monumental buildings
- Control and monitoring of SEs/NSCs
- Data acquisition and the use of AI for the assessment of seismic demands on SEs/NSCs

Invited Speakers
A. Kazantzi [4], R. Assi [5], C. Petrone [6], L. Berto [7], J.-D. Kang [8], K. Beyer [9]

Affiliations
[1] University of Genoa, Department of Civil, Chemical and Environmental Engineering, Genoa, Italy, [2] University of Naples Federico II, Department of Structures for Engineering and Architecture,, Naples, Italy, [3] Faculty of Technical Sciences, University of Novi Sad, Department of Civil Engineering and Geodesy, Novi Sad, SERBIA, [4] National Technical University of Athens, School of Civil Engineering, Athens, Greece, [5] École de technologie supérieure, Université du Québec, Montréal (Québec), Département de génie de la construction, Montréal , Canada, [6] Gallagher Re, Londra, United Kingdom, [7] Università IUAV di Venezia, Dipartimento di Culture del progetto, Venezia, Italy, [8] National Research Institute for Earth Science and Disaster Resilience, Miki, Japan, [9] École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland