

**Session ID:** ASR-4

**Title**

METHODS FOR ASSESSING THE LIFE CYCLE ENVIRONMENTAL IMPACT OF EARTHQUAKES

**Convenors**

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**Description**

It is well-known that the construction sector, both buildings and infrastructure, is among the main contributors to global greenhouse gas emissions, raw material depletion, and waste production. In the case of buildings, environmental impacts had up until recently been tackled only through the reduction of their operational energy demand, the decarbonisation of the power supply (e.g. through an increased use of renewable sources and of other zero-carbon technologies) and by addressing embodied carbon stored in construction materials. In the recent years, however, the non-negligible environmental impact associated to earthquake-induced damage and consequent repair/reconstruction activities has finally been well acknowledged by both the scientific community and many stakeholders.

There is indeed now a drive for a sustainable coupled seismic/energy renovation of the existing built environment. To aid this process, several methods and approaches, which consider a range of economic, social, technical, and, now, also environmental aspects, have been developed in the recent years for assessing and identifying such integrated retrofitting solutions.

This technical session aims thus to constitute a forum for sharing and discussing the most recent advancements and future research needs in the field of methods and procedures for the life cycle seismic assessment of structures that consider, in an integrated fashion, environmental, economic, and social impacts. In the specific case of buildings, research that includes the coupled consideration of both seismic risk and energy efficiency is also foreseen. We welcome contributions from academia, research institutions and also from the practicing engineering community.

**Invited Speakers**

C. Menna <sup>4</sup>, C. Passoni <sup>5</sup>, G. Ali Anwar <sup>6</sup>, G. Rosa <sup>7</sup>

**Affiliations**

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