

**Session ID:** REC-4

**Title**

FEBRUARY 2023 TÜRKIYE EARTHQUAKE SEQUENCE

**Convenors**

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**Description**

The February 6th, 2023 Kahramanmaras (Pazarcik M7.8 and Elbistan M7.7) earthquakes constitute one of the strongest event ever recorded in the Levant, and were felt as far as Egypt, Israel, Palestine, Lebanon, Cyprus, and the Black Sea coast of Turkey. The damage extent, in terms of human lives and civil structures, encompasses an area of about 60,000 km<sup>2</sup>, reaching as far as 400 km from the epicenters of the two events, including northwestern Syria.

The earthquakes heavily damaged eleven provinces of Türkiye. The number of severely damaged and collapsed buildings are reported as 280,000 with over 50,000 life losses. The city centers of Antakya (Antioch, one of the most ancient cities in the Middle East), as well as Adiyaman and Kahramanmaras, are almost demolished. The accelerograms of the two mainshocks were recorded by over 280 strong motion stations operated by AFAD, the national network operator, and other structure and basin specific strong motion networks. There are accelerograms with PGA values reaching 2g levels.

As a consequence, there exist many issues related to tectonics, seismology, strong ground motions, and earthquake engineering that deserve to be studied in detail. This technical session invites researchers in the fields of earth sciences, engineering seismology, soil dynamics, and earthquake engineering to present, explain, and publish their findings on the below topics (and possibly others) for highlighting the most important aspects of these earthquakes.

- Strong ground motion processing and analysis
- Forward directivity pulses and near fault effects
- Ground motion models
- Liquefaction
- Basin effects
- Earthquake performance of lifeline systems (roads, railroads, bridges, tunnels, and major pipelines)
- Earthquake performance of urban infrastructure and municipal services
- Earthquake performance of reinforced concrete, masonry buildings

**Invited Speakers**

I. Iervolino <sup>3</sup>, K. Pitilakis <sup>4</sup>, K. Orakcal <sup>5</sup>

**Affiliations**

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