

**SESSION 22- Earthquake Swarms: Processes, Physics, and Implications****Conveners**

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**Session Description**

Earthquake swarms refer to repeated seismic events occurring without a clear mainshock–aftershock pattern, but within restricted temporal and spatial domains. They occur in different regions of the world associated with multiple physical processes, i.e., before larger earthquakes (e.g., the 2024 Mw 7.4 Hualien and 2024 Mw 7.5 Noto earthquakes), during magma migration, or associated with industrial operation. Also, they are common in regions with no clear relation to large-scale plate motions, as observed during the recent earthquake swarms recorded in Western Anatolia, the Aegean, and mainland Greece. They have been interpreted in terms of multiple physical processes such as fluid migration, aseismic slip, transient deformation. Thus, despite their widespread occurrence, the underlying physics is not fully understood, hampering our ability to forecast their spatio-temporal seismicity evolution and energy release.

This session welcomes contributions focusing on the general characteristics, physics, and tectonic implications of swarm-type seismicity and their relationships with fluid migration, volcanic or geothermal activity, crustal heterogeneities, and local stress. Multidisciplinary studies integrating seismology with geodesy, volcanology, geodynamics, numerical modeling, and laboratory experiments are particularly welcome. One or two solicited speakers with a close association to swarm-type seismicity will promote cross-disciplinary discussion and enable the creation of knowledge and reduction of hazards by swarm-type earthquakes.

