

## **SESSION 06- Fiber-Optic Sensing and Distributed Acoustic Monitoring for Seismological and Geodetic Applications**

### **Conveners**

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### **Session Description**

The rapid evolution of fiber-optic sensing technologies — particularly Distributed Acoustic Sensing (DAS) — is opening unprecedented opportunities for seismological and geodetic monitoring. By transforming optical fibers into dense arrays of sensors, DAS enables the recording of ground motion and strain with meter-scale spatial resolution along tens of kilometers of cable. This technology has already proven its potential for earthquake detection, ambient noise imaging, near-surface characterization, and realtime infrastructure monitoring.

This session aims to bring together researchers and practitioners working on the use of optical fiber-based systems for seismological and geophysical applications. We invite contributions covering all aspects of fiber-optic sensing, including instrumentation development, data processing and calibration, field experiments, and integration with traditional seismic and GNSS networks. Case studies on earthquake and landslide monitoring, early warning systems, volcano surveillance, and offshore geohazards are particularly welcome. The session also seeks to highlight the role of DAS and related technologies in operational monitoring networks, and their contribution to real-time risk mitigation and cross-disciplinary applications bridging seismology, engineering, and geodesy.

