

Advancing Earthquake Monitoring with DAS

The Challenge

Seismic monitoring is essential for assessing, preparing for, and mitigating earthquake risks. While traditional seismic stations provide valuable data, they are costly to install and maintain, leading to sparse coverage – especially in remote and offshore areas. This limitation hinders accurate seismic hazard assessments and early warning systems.

Traditional seismic stations use sensors to detect earthquakes, but their low density and high deployment costs restrict coverage. Remote locations, particularly subduction zones, which generate some of the most powerful earthquakes, remain under-instrumented due to the high costs of deploying and maintaining offshore seismic instruments.

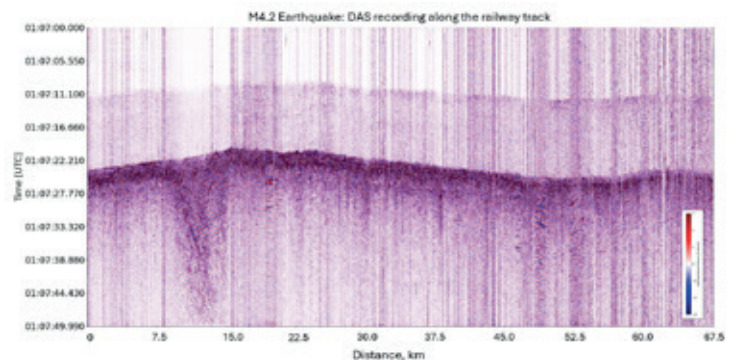
The Innovation

Distributed Acoustic Sensing (DAS) transforms existing fiber-optic cables into dense, real-time seismic sensor networks. DAS records seismic waves with high resolution, capturing critical ground motion data over vast areas.

This technology enhances earthquake detection in urban environments and remote regions, including subduction zones – where powerful earthquakes occur but sensor coverage is limited.

AP Sensing's unique DAS technology leverages fiber-optic cables already installed in power grids, telecom networks, subsea cables, pipelines, and railway infrastructure. This provides a cost-effective and extensive sensing network with minimal installation and maintenance expenses.

With exceptional sensitivity across the wide frequency range, AP Sensing's DAS accurately detects seismic events. Its flat frequency response up to Nyquist ensures precise signal reconstruction, while an outstanding signal-to-noise ratio (SNR) across the whole spectrum enhances sensitivity, even for subtle



seismic signals. The system enables fully distributed acoustic measurements over distances exceeding 100 km, with variable gauge length and pulse width options, allowing for sensor density unattainable with conventional seismic networks.

AP Sensing's DAS has demonstrated the ability to detect even small earthquakes across diverse installation types, including both subsea and terrestrial cables. The arrival of the seismic waves is clearly visible in different environments, significantly improving seismic data acquisition.

World-Class Systems

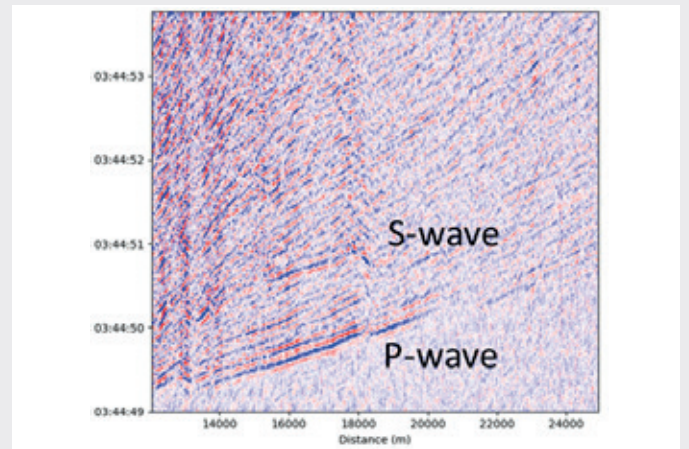
AP Sensing's monitoring solution utilizes acoustic measurements from our world-class, phase-based DAS system on standard fiber optic cables. Our unique 2P

Squared technology ensures stable signal linearity and high sensitivity over long distances.

With features like high spatial resolution, real-time data acquisition, and seamless integration with other monitoring technologies, DAS enhances early warning systems and long-term seismic hazard analysis.

Reliable & Efficient

AP Sensing's solution for earthquake monitoring with DAS provides an effective way to reduce the costs of conventional seismic monitoring, while simultaneously monitoring and alleviating the effects of dangerous seismic activity. The use of already existing fiber optic cables is effective for geological and scientific observational tasks at a previously inaccessible scale and resolution.



Why AP Sensing?

- Industry-leading monitoring solution comprising DTS, DAS, and software that offers excellent performance.
- All product variations are fully certified and in compliance with internationally recognized standards.
- In controlled fire tests, our system has proven to detect fires of all sizes 30% faster than prescribed by fire detection guidelines.
- Our experience and proven deployment in all regions in the world our project reference list is extensive and comprehensive.
- Range of certified sensor cables to fit every need.
- Easy system integration through flexible protocols and interfaces.
- World-class service, support and training.

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