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The Value of Open Data from Globally Distributed Geophysical Instrumentation Networks

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High-quality open data from global and regional networks such as the Global Seismographic Network and the EarthScope Transportable Array have enabled a wide range of transformative, cross-disciplinary research that has far exceeded original expectations. The networks consist of well operated and distributed stations with long-term recording histories, and were designed to facilitate studies of Earth structure and earthquake processes. However, the use of these data has been much broader, including studies of slow earthquakes, landslides, the Earth's "hum", glacial earthquakes, sea-state, climate change, induced seismicity, and wildfires. These broad discoveries have been enabled because datasets are completely open and unrestricted, and the data and metadata are easily discoverable and well documented.

Similarly, the International Monitoring System (IMS) has produced decades of valuable global geophysical observations in support of the CTBT explosion monitoring mission. The IMS, with its global distribution and high-quality can provide data for regions where no other data are available. Collectively, these various networks have contributed to capacity building, by providing data to scientists around the world, providing designs and standards for networks and stations worldwide, and engaging the public's interest in science.

Promotional text

Decade long, open, high quality data from Globally Distributed Geophysical Instrumentation Networks like the IMS can contribute to capacity building to scientists around the world, and provide data for broad discoveries far beyond the original CTBT explosion monitoring mission.

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