



ObsPy: A Python Toolbox for Seismology

Lion Krischer (1), Tobias Megies (2), Elliott Sales de Andrade (3), Robert Barsch (4), and Jonathan MacCarthy (5)

(1) ETH Zürich, Geophysik, Switzerland, (2) Department of Earth and Environmental Sciences, Ludwig Maximilians University of Munich, Munich, Germany, (3) Department of Physics, University of Toronto, Canada, (4) EGU Office Munich, Munich, Germany, (5) Los Alamos National Lab, Los Alamos National Laboratory, Los Alamos, USA

In recent years the Python ecosystem evolved into one of the most powerful and productive scientific environments across disciplines. ObsPy (<https://www.obspy.org>) is a fully community-driven, open-source project dedicated to providing a bridge for seismology into that ecosystem. It does so by offering

- Read and write support for essentially every commonly used data format in seismology with a unified interface and automatic format detection. This includes waveform data (MiniSEED, SAC, SEG-Y, Reftek, ...) as well as station (SEED, StationXML, ...) and event meta information (QuakeML, ZMAP, ...).
- Integrated access to the largest data centers, web services, and real-time data streams (FDSNWS, ArcLink, SeedLink, ...).
- A powerful signal processing toolbox tuned to the specific needs of seismologists.
- Utility functionality like travel time calculations with the TauP method, geodetic functions, and data visualizations.

ObsPy has been in constant development for more than seven years and is developed and used by scientists around the world with successful applications in all branches of seismology. Additionally it nowadays serves as the foundation for a large number of more specialized packages.

This presentation will give a short overview of the capabilities of ObsPy and point out several representative or new use cases. Additionally we will discuss the road ahead as well as the long-term sustainability of open-source scientific software.