



ObsPy: A Python toolbox for seismology - Current state, applications, and ecosystem around it

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ObsPy (<http://www.obspy.org>) is a community-driven, open-source project offering a bridge for seismology into the scientific Python ecosystem. It provides

- * read and write support for essentially all commonly used waveform, station, and event metadata formats with a unified interface,
- * a comprehensive signal processing toolbox tuned to the needs of seismologists,
- * integrated access to all large data centers, web services and databases, and
- * convenient wrappers to third party codes like libmseed and evalresp.

Python, in contrast to many other languages and tools, is simple enough to enable an exploratory and interactive coding style desired by many scientists. At the same time it is a full-fledged programming language usable by software engineers to build complex and large programs. This combination makes it very suitable for use in seismology where research code often has to be translated to stable and production ready environments. It furthermore offers many freely available high quality scientific modules covering most needs in developing scientific software.

ObsPy has been in constant development for more than 5 years and nowadays enjoys a large rate of adoption in the community with thousands of users. Successful applications include time-dependent and rotational seismology, big data processing, event relocations, and synthetic studies about attenuation kernels and full-waveform inversions to name a few examples. Additionally it sparked the development of several more specialized packages slowly building a modern seismological ecosystem around it.

This contribution will give a short introduction and overview of ObsPy and highlight a number of use cases and software built around it. We will furthermore discuss the issue of sustainability of scientific software.