Pyrocko - A Versatile Software Framework for Seismology

Sebastian Heimann\textsuperscript{1}, Marius Kriegerowski\textsuperscript{1,2}, Marius Isken\textsuperscript{1,3}, Hannes Vasyura-Bathke\textsuperscript{2}, Simone Cesca\textsuperscript{1}, Nima Nooshiri\textsuperscript{4}, Gesa Petersen\textsuperscript{1}, Malte Metz\textsuperscript{1,2}, Andreas Steinberg\textsuperscript{3}, Henriette Sudhaus\textsuperscript{3}, and Torsten Dahm\textsuperscript{1}

\textsuperscript{1}GFZ Potsdam, Section 2.1: Physics of Earthquakes and Volcanoes, Potsdam, Germany (sebastian.heimann@gfzpotsdam.de)
\textsuperscript{2}University of Potsdam, Potsdam, Germany
\textsuperscript{3}University of Kiel, Kiel, Germany
\textsuperscript{4}Dublin Institute of Advanced Studies (DIAS), Dublin, Ireland

Pyrocko is an open source seismology toolbox and library, written in the Python programming language. It can be utilized flexibly for a variety of geophysical tasks, like seismological data processing and analysis, modelling of waveforms, InSAR or GPS displacement data, or for seismic source characterization. At its core, Pyrocko is a library and framework providing building blocks for researchers and students wishing to develop their own applications. Pyrocko contains a few standalone applications for everyday seismological practice. These include the Snuffler program, an extensible seismogram browser and workbench, the Cake tool, providing travel-time and ray-path computations for 1D layered earthmodels, Fomosto, a tool to manage pre-calculated Green's function stores, Jackseis, a command-line tool for common waveform archive data manipulations, Colosseo, a tool to create synthetic earthquake scenarios, serving waveforms and static displacements, and new, Sparrow, a 3D geophysical data visualization tool. This poster gives a glimpse of Pyrocko's features, for more examples and tutorials visit https://pyrocko.org/.