



## **An event database for rotational seismology**

Johannes Salvermoser, Celine Hadziioannou, Sarah Hable, Bryant Chow, Lion Krischer, Joachim Wassermann, and Heiner Igel

LMU Munich, Munich, Germany (salv\_johannes@gmx.de)

The ring laser sensor (G-ring) located at Wettzell, Germany, routinely observes earthquake-induced rotational ground motions around a vertical axis since its installation in 2003.

Here we present results from a recently installed event database which is the first that will provide ring laser event data in an open access format. Based on the GCMT event catalogue and some search criteria, seismograms from the ring laser and the collocated broadband seismometer are extracted and processed. The ObsPy-based processing scheme generates plots showing waveform fits between rotation rate and transverse acceleration and extracts characteristic wavefield parameters such as peak ground motions, noise levels, Love wave phase velocities and waveform coherence. For each event, these parameters are stored in a text file (json dictionary) which is easily readable and accessible on the website. The database contains >10000 events starting in 2007 ( $M_w > 4.5$ ). It is updated daily and therefore provides recent events at a time lag of max. 24 hours. The user interface allows to filter events for epoch, magnitude, and source area, whereupon the events are displayed on a zoomable world map.

We investigate how well the rotational motions are compatible with the expectations from the surface wave magnitude scale. In addition, the website offers some python source code examples for downloading and processing the openly accessible waveforms.