



The 2013 Earthquake Series in the Southern Vienna Basin: Location

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Eastern Austria is a region of low to moderate seismicity, and hence the seismological network coverage is relatively sparse. Nevertheless, the area is one of the most densely populated and most developed areas in Austria, in particular Vienna and its surroundings. The largest instrumentally recorded magnitude is around 5, and the Vienna Basin transfer fault occasionally shows earthquakes with magnitudes larger than 4.

Such a series of earthquakes occurred last in 2013 close to Ebreichsdorf, with magnitudes up to 4.2. With portable broadband stations, semi-permanent and permanent stations from different Institutions (University of Vienna, Technical University and ZAMG) it was possible to record the main- and aftershocks with an unusual multitude of close-by seismic networks.

Accurate earthquake locations, including depth estimation and the relation to the faults in the area, is not only important for understanding tectonic processes, but also for estimating seismic hazard. All available stations at local and regional distances are combined in a comprehensive dataset and used for a thorough investigation of earthquake location.

The first step is to use a dataset that is as complete as possible, with standard methods. Secondly we use more sophisticated methods for earthquake relocation. Finally we try to obtain more information from the same data, e.g. with using more seismic phases.