



Seismicity of the Vienna Basin from the temporary ALPASS and CBP deployments

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The Vienna Basin developed as a pull-apart structure in a strike-slip regime driven by eastward lateral extrusion of crustal blocks from the Eastern Alps to the Carpathian–Pannonian region. GPS measurements indicate a current displacement rate of 1-2 mm/yr that is corroborated by a relatively high seismic activity: From 1900 to 2000 more than 1500 felt earthquakes (intensity > 3) were recorded by the Austrian Seismological Service, a high percentage located in the Vienna basin or in the adjoint Mur/Mürz valley. Since 1201 probably 9 strong earthquakes (intensities > 7) occurred in this densely populated region. The passive seismic projects ALPASS (Alpine Lithosphere and PASsive Seismic monitoring) and CBP (Carpathian Basin Project) were originally aimed for studying the upper mantle structure beneath the wider Eastern Alpine region. We use sub-sets of 22 (ALPASS) and 14 (CBP) seismic stations within our region of interest drawn from both experiments that recorded over a time span of 27 months. Station spacing is approximately 50 km. We relocated about 100 events detected by the Austrian seismic network. Magnitudes range from 1.0 to 3.5, maximum focal depth is about 12 km. Broadband data from permanent seismic networks are also included in our analysis. In a first step, events were located using a 1D velocity model. As a next step we will employ a new 3D velocity model derived from data of CELEBRATION 2000 and ALP 2002. For the largest events, source mechanisms will be derived by waveform modelling. Finally we will discuss the spatial distribution and mechanisms of the earthquakes in their tectonic context.