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# 3.3-P22. Modeling and Detection of Regional Depth Phases at the GERESS Array

The Vienna Basin in 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 areas in Austria. The Vienna Basin fault system (VBFS), which branches beneath the Basin, occasionally shows earthquakes with magnitudes larger than 4. Accurate earthquake location, including depth estimation is not only important for understanding tectonic processes, but also for estimating seismic hazard. Particularly depth estimation needs a dense seismic network. If station coverage is not sufficient, depth can only estimated roughly. Regional Depth Phases (RDP) like sPg, sPmP and sPn have been used successfully for calculation depth even if only observable from one station. For this study we use seismic array data from GERESS. It is 220 km to the North West of the Vienna Basin, which according to literature is a suitable distance to recover PmP and sPmP. We use array processing on earthquake data from the Vienna Basin with local magnitudes > 4 to reduce the SNR and to search for RDP. We compare real and synthetic results to assert which phases can be identified and to what extend depth estimation can be improved.

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