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Compilation of a 3-D P-wave crustal velocity model for the Bohemian Massif from controlled source seismology data

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The Bohemian Massif is one of the largest outcrops of Precambrian rocks in Central and Western Europe. As the SE limits of stable Hercynian Europe it has played an important role during Alpine-Carpathian orogeny and it has been subjected to Tertiary rifting processes. The area has been under controlled source seismology (CSS) investigation for a long time, and, therefore, a significant amount of high-quality long-range reversed profiles exist providing deep crustal information. Several of these profiles intersect providing particularly reliable information of 3D structure at depths below cross points. In this study we follow the methodology of Waldhauser et al. (1998) that was successfully applied to Alpine and Central Mediterranean regions. All available profile data are re-evaluated to determine what parts of published 2D models are how well constrained in order to compile all reflector or model-information according to their uncertain estimates for the 3D model. In this process we focus on the most obvious most reliably identified seismic phases in record sections – direct waves (Pg), reflected (PmP) and refracted waves (Pn). Each record section was checked for the data quality regarding these phases. Depending on data quality we attribute quality estimates for the model information that have been derived from these specific data. We present a preliminary 3D P-wave crustal model of the Bohemian Massif from available CSS data. In a further step this model will be updated and complemented by local earthquake tomography.