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## Lithospheric structure of the Pannonian Basin using Rayleigh wave ambient noise tomography – preliminary results

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We used Rayleigh wave ambient noise tomography to investigate the crust and uppermost mantle structure of the Pannonian Basin. The Pannonian Basin and the surrounding orogens are located within the arcuate Alpine–Carpathian mountain chain in Central Europe. It is a back-arc basin characterized by a thinned lower crust and an updoming mantle. Beneath the basin both the crust and the lithosphere have smaller thickness than the continental average. Imaging the velocity structure of the crust and upper mantle may help us to better understand the structure and formation of the Carpathian–Pannonian region.

We used data from the permanent seismological stations of the broader Central European region together with the AlpArray Seismic Network (AASN) and analysed one-year seismic data from 2017. More than 18 thousand vertical component noise cross-correlation functions were calculated and Rayleigh wave inter-station phase velocity curves were determined using an automated measuring algorithm. Anisotropic phase velocity tomographic imaging were carried out for the whole Pannonian Basin between 2 and 40s periods (~5-60 km).

The locations of the retrieved phase-velocity anomalies consistent with the well-known geologic and tectonic structure of the area (deep basins and orogenic belts) and are comparable to recent tomographic models published in the literature.

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