



## **Deep lithosphere structure across the East-Alpine root towards the Bohemian Massif**

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Convergent movements of the European and African plates, closing several microplates in between, formed the Alps and several neighbouring mountain belts – the Carpathians, Apennines and Dinarides in the south. To the west and north, the large Variscan massifs – the French Massif Central and Bohemian Massif – adjoin the Alps. Besides tomography images of seismic velocity anomalies, e.g., subducted lithosphere plates in the collisional zone, analyses of seismic anisotropy represent a powerful tool to improve our understanding of the orogenic process and mantle dynamics of the region. We present a detailed seismic anisotropy study of the mantle lithosphere along a broad north-south transect crossing the East-Alpine root and the adjacent Bohemian Massif based on body-wave data from the AlpArray-EASI complementary experiment (2014-2015) and nearby permanent stations. Fabrics of the mantle lithosphere, modelled in 3D, exhibit distinct regional variations, implying complex domain-like architecture of the south-central part of the European plate, particularly in the Alps and their surroundings. Ongoing cooperative studies focusing on the 3D mantle fabrics, with the use of the AlpArray Seismic Network data, will substantially improve our knowledge of the structure and tectonic development of the complex Alpine region and its surroundings.