



Moho depth & Poisson ratio across Eastern Alps

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This work focuses on the crustal thickness across the Eastern Alps, from the Bohemian Massif to the North through the Eastern Alps, to reach the Southern Alps to the South.

We collected data from altogether 74 temporary and permanent seismic stations to construct Receiver Function data-sets in order to detect the Moho depth beneath each single station. We create the Moho map together with the estimate of the V_p/V_s ratio for given average crustal P-wave velocities. Depth estimates are interpreted along profiles that cross the boundary between the two major plates involved in the Alpine orogeny, namely the European and Adriatic plate, and are compared with Moho depths from previous studies and with the gravity anomaly. Retrieved depths correlate well with previous information. Through this study we can infer finer-scale features not only in crustal thickness but also in the structural characteristics of the crust involved in the construction of the Alps. The Adriatic plate shows a highly reflective lower crust; such a characteristic is lacking in the European crust. This difference allows determining the boundary between the two plates, otherwise not detectable because of the lack of a clear Moho step between the two. Here we present new information on Moho depth beneath the Eastern Alps. This work is complementary to the current knowledge of crustal structure in the Eastern Alps.