



Resolving a deep lithosphere transition between Southern Norway and Southern Sweden

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Previous recent P-wave travel time tomography studies (Medhus et al, 2009, 2010) have delineated a deep lithospheric transition between Southern Norway and Denmark on one side and Southern Sweden on the other side. This study focuses on details in the location and geometry of this transition in Southern Norway and Southern Sweden where two dense profiles of temporary seismological stations are combined with the exceptional data coverage of the permanent NORSAR array.

The deep lithospheric transition between Southern Sweden and Denmark is closely associated with the Sorgenfrei-Tornquist Zone and the south-western boundary of the Baltic Shield, whereas the northward continuation between Southern Sweden and Southern Norway is crossing various tectonic and geomorphologic units. It is a challenge to understand the relations between deep structures of the lithosphere – asthenosphere system and the near surface crustal structures in this region, which includes old tectonic boundaries, the Oslo Graben and the Southern Scandes Mountains. A good resolution of the location, “sharpness” and depth of the lithospheric transition is important for the interpretation of the geodynamic evolution of Southern Norway and adjacent areas.

References:

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