

## **Lithosphere difference in northern Europe: Project Tor.**

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Interpretation is now well advanced in Project Tor, teleseismic tomography across the Tornquist Zone in Germany-Denmark-Sweden. We distinguish very significant deep lithosphere differences. 120 seismographs constituted in 1996-1997 the largest seismic antenna ever in Europe. The Tor area is along a well studied crustal profile of an earlier project, and the inversion efforts are concentrated on the deep lithosphere and asthenosphere differences to depths around 300 km. The investigation can be called two-and-a-half dimensional, being a 900 km profile with 100 km width plus a few seismographs off the profile. The investigation has established a 3D crustal/upper mantle model based on existing data. Through ray tracing in this compiled crustal model, a picture of the lower lithosphere/asthenosphere influence on the seismic rays is established. Preliminary travel-time tomography results confirm very large lithosphere differences. For several events of the large data base it is shown that the observed travel time anomalies of 1-2 seconds can be divided almost equally between known crustal effects and lower lithosphere/asthenosphere differences, accounting for about one second of travel time differences. The transition looks gradual from most directions, while for rays coming in from NE the transition is rather sharp. This indicates a steep NE slope of a sharp transition, probably the bottom of the lithosphere.