



North European Transect – a preliminary compilation

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A nearly continuous, 3600 km long, NE-running North European Transect (NET) is combined from the existing deep seismic reflection data sets in the Baltic Sea (BABEL, 1600 km), Northern Finland (FIRE 4-4A, 580 km) and Russian Arctic (1-AR, 1440 km). The transect starts as with a BABELA marine profile from the Bay of Lybeck, runs through the Baltic and Bothnian Seas (BABEL B,C,1,3&4), continues with FIRE4&4A profile crossing northern Finland. In Kola Peninsula, the transect is continued with profile Line 1-AR (1440 km total length with 1330 km at sea and 110 km on land) connecting the super-deep hole-3 on the Kola Peninsula (town of Zapolarny, Russia) with the hole 1-Hayes on Franz Joseph Land and transecting the Barents Sea.

Geologically the North European Transect covers the transition from Phanerozoic Europe to Precambrian Europe and back to the Phanerozoic Barents Sea shelf. In the Phanerozoic Europe, the crustal thickness is 36-28 km, in the Precambrian Fennoscandian Shield it is 48-65 km and in the rifted Barents Region it is 37-39 km. On the islands and uplifts, the thickness reaches platform thicknesses of 38-42 km. Rift-related grabens are characterized by 33-36 km – thick crust. The transect shows differences in regional reflectivity patterns. e.g. in thinner areas the Moho is well reflective and in thicker areas it is interpreted from the gradational disappearance of crustal reflectivity.