3D SEISMIC TOMOGRAPHIC MODELLING OF THE NORTH-WESTERN
SVALBARD AREA

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Deep seismic sounding measurements were performed in the continent-
ocean transition zone of the north-western Svalbard continental margin in
1976 - 1999 in an international co-operation. Seismic energy (airgun and
TNT shots) was recorded by land (onshore) seismic stations, ocean bottom
seismometers (OBS), and hydrophone systems (OBH). Data from archival
and modern seismic profiles were altogether used for 3D tomographic
inversion using JIVE3D software. The results are similar to the earlier 2-D
modelling, supplemented by new off-line information giving a 3D image of the
crustal structure. The continental crust thins to the west and north. A
minimum depth of about 6 km to the Moho discontinuity was found east of
the Molloy Deep. The Moho interface deepens to about 30 km beneath the
continental crust of Spitsbergen.