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# SCANLIPS – A seismological study of epeirogenic uplift of Scandinavia

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Thermochronology data and geomorphological interpretation indicate that parts of the Scandinavian mountains have risen by over 1 km since the Miocene. This permanent uplift, the cause of which is still disputed, varies across Norway. To investigate this the SCANLIPS project employs passive seismology coupled with modelling of potential field data to determine variations in crustal properties and structure across Norway and Sweden. Between April and October 2006 28 seismometers were deployed at sites along a c. 600 km long profile between Trondheim in Norway and Harnosand in Sweden. Receiver Functions have been calculated for teleseismic events recorded at these stations and modelled, using existing seismic data as a guide to the properties of the crust, to estimate Vp/Vs and depth to Moho. Preliminary results suggest relatively thin crust beneath the coast of Norway (c. 30 km). The crust then thickens beneath the Trondheim region to its maximum close to the Norwegian-Swedish border beneath the highest topography along the profile. The crust then shallows slightly but remains uniformly thick (c. 45 km) beneath Sweden. Forward and inverse modelling requires an increase in seismic velocity beneath Sweden in order to model the receiver functions. Beneath Norway the crust thins rapidly toward the continental margin at a rate faster than the topography decreases. This suggests at least part of the topography is supported by the flexural strength of the crust in the footwall of the Møre-Trøndelag fault zone. There is some suggestion of a crustal root supporting the highest topography along the profile but a significant root is not required in this region and the present root can mostly be explained by glacial isostatic rebound. The thick crust but relatively lower topography in Sweden is explained by the increase in seismic velocity/density

for the crust in this region.