



## **The Scandes: In between the margin and the shield**

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We present a series of overview studies on the Fennoscandian shield and its passive margin with focus on the Scandes mountain chain. These studies seek to link the deep lithosphere to morphological and topographic features. Structural, thermochronometric, and topographic data suggest that the latest Cretaceous/Cenozoic uplift of western Norway was associated with normal-sense reactivation of the Møre-Trøndelag Fault Complex. The asymmetric topographic profile of Fennoscandia is reflected in the apatite fission-track data and suggests that lithospheric flexure and glacial relaxation place a first-order control on the shape of the Scandes Mountains and the central Fennoscandian craton.

For the Southern Scandes isostatic considerations and gravity modelling show that the density distribution within the lithospheric mantle is isostatically balancing the lithosphere.

However, despite new knowledge obtained from surface geology and subsurface geophysical studies, our understanding of the deep crustal and upper lithospheric mantle structure remains opaque. A number of passive and active seismic experiments in the central Baltic Shield provided an image of the lithospheric structure: But further to the west, beneath the Scandes, only a limited number of experiments with relatively low resolution are available.

Given the impoverished nature of the Fennoscandian lithospheric database, a new, detailed study of lithospheric structures in Norway is eminently justified. NGU is currently planning cooperative efforts to provide this critical "missing link" between the well-known offshore areas to the west and the central Fennoscandian shield to the east.