



## **MANTle investiGations of Norwegian Uplift Structure (MAGNUS) - a flying start into Topo Europe**

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The geological history of Norway shows a complex series of periods of convergence and divergence. The last period of divergence in the Cenozoic resulted in the opening of the North Atlantic Ocean. An important issue in the geodynamics of this region is the substantial vertical movements experienced during the Cenozoic by the North Atlantic margins, including Southern Norway. Isostatic response to unloading contributed significantly to the Neogene uplift, however, this cannot be the only operating mechanism. The mechanisms controlling the broad uplift remain enigmatic but its long wavelength is suggestive of mantle processes, possibly related to the presence of the Icelandic plume in the North-Atlantic.

Recent studies lead by the University of Århus concluded that the region of maximum topography beneath Southern Norway coincides with a thickened crust which partly comes up for the gravitational deficit beneath the south Norwegian mountains. To improve our understanding of the mantle structure beneath Southern Norway, a regular network of 31 broadband seismometers from the KABBA instrument pool (University of Karlsruhe) was deployed in September 2006 in the study area with an intended operational period of < 2 years. Together with permanent installments in the region, the virtual MAGNUS network in Southern Norway sums up to 40 broadband instruments.

In our contribution we will introduce the scientific background, concept and planned investigations of the ongoing experiment. As an international collaboration between the Universities in Oslo (NOR), Karlsruhe (GER), Copenhagen and Århus (DEN) and NORSAR (NOR), this project is a flying start into the impending Topo Europe initiative.