



## **NICE - an amphibian seismic experiment in North Iceland, I. Scope of the project**

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Seismicity in Iceland is focussed on the mid-ocean ridge discontinuities in south and north Iceland. The northern icelandic discontinuity, the Tjörnes Fracture Zone, separates Kolbeinsey Ridge offshore from the North Volcanic Zone including the well-known Krafla caldera complex onshore. Between Krafla and Kolbeinsey Island the existing permanent SIL network of the Icelandic Meteorological Office has been expanded by a heterogeneous setup of 11 temporary land stations (Lennartz seismometers 5 s + EarthData logger) and 14 temporary ocean-bottom stations (4 broadband OBH of Hamburg type and 10 short period GEOPRO OBS) deployed from R/V Dröfn for the period between June and September 2004. This will allow a refinement of existing local earthquake tomography results as well as waveform-oriented research for fluid-induced events.

16 shots ranging from 22.8 to 45.6 kg dynamite were fired in the offshore area to locate the free-fall OBSes, uncover the subsurface layers and their velocities and test the location performance of the SIL network. In addition, all the data of about 1000 automatically located events have been fed into a SEISAN database. P and S phases will be determined for the remaining stations of the setup, first by manual picks and later by cross-correlation techniques. S phases are generally easier to spot but P wave arrival time provide less erroneous measurements, when visible. The OBS and OBH stations are of the same quality as the surrounding on-land stations, as the entire setup close to the northern shores of Iceland is exposed to microseismic activity of wave swell. We report preliminary results of the experiment.