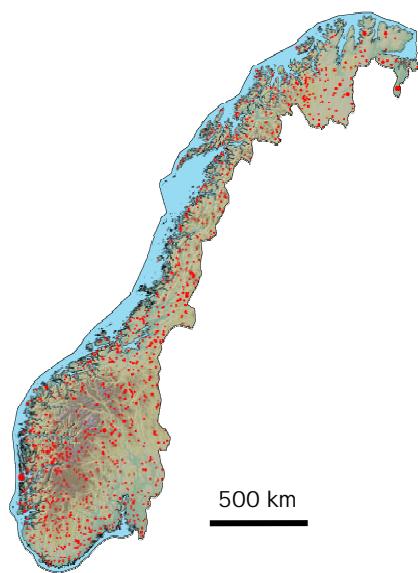


**THE HUNT FOR IMPACT STRUCTURES IN NORWAY.** H. Dypvik<sup>1</sup>, S.O.Krøgli<sup>1</sup>, B.Etzelmüller<sup>1</sup>, L. Sørbel<sup>1</sup> and T.A.A.Thorsen<sup>1</sup>, <sup>1</sup>Department of Geosciences, University of Oslo, P.O.Box 1047, Blindern, No 0316 Oslo Norway. E-mail: henning.dypvik@geo.uio.no.

**Introduction:** The search for impact structures in Norway is still in its infancy and compared to Sweden (6) and Finland (11) the number of discovered structures (2) is very low [1]. The geological composition and areal extent of the three countries are comparable and would indicate possibilities for rather similar number of impact structures. Inspired by this we initiated a project searching for undiscovered impact structures in Norway.

**Method:** A systematic search for topographic impact structures in Norway has therefore started, in a first stage based on an automatic scan of digital elevation models (DEM) with spatial resolution of 100 m. In this stage we defined topographic crater structures [2,3] with diameters of 2.5 and 5 km and computed the correlation between them and the DEM ("matching"). The first screening picked out about 4500 circular structures, matching the topographic pre-described structure. Thereafter the different cases were briefly analysed by manual inspection of digital data (geological and morphological setting), and the number were reduced to 1201.



**Figure 1:** This search resulted in 1201 large circular structures in Norway. On this map the structures are marked with red spots.

These circular structures may be of several different origins e.g. cirques, calderas, meander bends, valley intersections, but a few of them might have an impact origin. The goal is now to visit and look up these structures in the field, but for our small project group this task is immense. Based on a website presentation ([www.geo.uio.no/groper](http://www.geo.uio.no/groper)) and intensive national publicity of the project, we hope to engage students (10 – 14 years old) in the search. The fall 2005 and spring/summer of 2006 the students and their classes will participate in this hunt for impact structures in a national school project launched in cooperation with The Research Council of Norway. By this student engagement and through contact with interested public, we will get the first field assistance in our project. We wait for their reports from simple inspections of the circular structures.

**Results:** The analytical method was calibrated towards the two possible onland impact structures we have in Norway (Gardnos and Ritland). Both structures where picked out by this search. The structures visited so far have been glacial or volcanic in origin.

The final results of this new approach will, however, be seen in early September 2006, when the different presentations have been submitted and participant awards will be handed out. We feel that this public involvement in our project in addition may trigger increased public interest in natural sciences.

The scientific part of the project will continue with comparative analyses of available geophysical and geochemical information. This part of the program is planned in cooperation with the Geological Survey of Norway along with parallel studies in Finland (University of Helsinki), in close cooperation with the European Space Agency / ESTEC.

#### References:

- [1] Earth Impact Database (2005). (<http://www.unb.ca/passc/ImpactDatabase/>) (Accessed: 1 Dec. 2005) [2] Melosh, H.J. (1989) *Impact cratering, A Geologic Process*. New York, Oxford University Press, 126 – 162. [3] Pike R.J. (1977) in *Impact and Explosion Cratering* edited by D.J.Roddy, R.O. Pepin and R.B.Merill.