NORDVULK SUMMER SCHOOL 2013

Remote sensing techniques in a dynamic geological setting

Nordic Volcanological Center, Institute of Earth Sciences, University of Iceland
Venue: Kriunes, Kópavogur, Iceland, 17-24 August 2013

The Summer School is primarily intended for PhD students. It will address the wide geological applications of remote sensing data and focus on application of remote sensing techniques in a dynamic geological setting. When geological features change, either abruptly (e.g. during volcanic eruptions, landslides or flooding), or slowly (e.g. changes in landscape or glacial extent) a need for remapping arises. Remote sensing techniques allow time efficient mapping on a big spatial scale. The large amounts of available data from various satellite sensors, as well as the increasing spatial resolution, call for a need to automate the mapping, and bridge the fields of geology and computer engineering. Several state-of-the-art approaches to semi-automated mapping will be demonstrated at the Summer School, including both supervised and unsupervised techniques. Furthermore, colleagues from the planetary sciences will be brought in, as these are the true experts on the forefront of remote sensing, in the case where obtaining ground truth is not an option.

Location:
Iceland may be considered a natural laboratory for many types of dynamic geological processes and provides unique opportunities for excellent field demonstrations of many remote sensing data applications. Though volcanic activity is almost unique to Iceland on a Nordic scale, Iceland also provides many opportunities to study geological events common with other Nordic countries, such as land- and mudslides, glacial changes and effects of flooding events. The barren land makes it an ideal target for practising geological mapping of surface features, and it is the Nordic country exposed to the largest variety of natural hazards, where rapid remapping of surface features through remote sensing data, may provide decision makers with important information in a crisis situation.

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