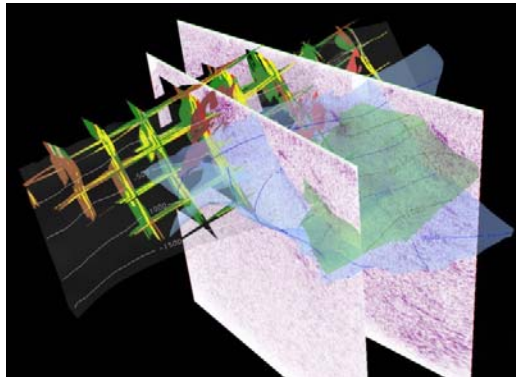




Institute of Seismology, Department of Geosciences and Geography has a pleasure to announce the

**Short course on
3D GEOLOGIC MODELLING OF
DEEPLY BURIED MINERAL
DEPOSITS BY INTEGRATING
SEISMIC, GEOLOGICAL MAP AND
DRILL HOLE DATA**

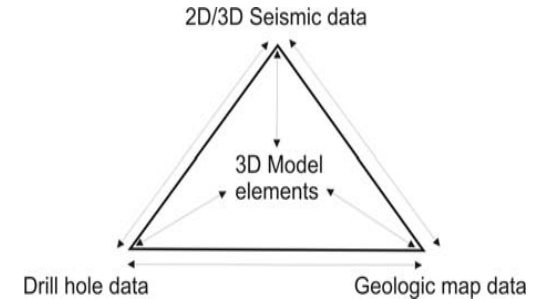


May 22-25, 2012

Helsinki, Finland

GENERAL INFO

It is widely recognized by the mineral exploration industry that because most near-surface mineral deposits have been found, deep exploration methods are required to sustain ore reserves in mature mining districts. Research over the last two decades has demonstrated that seismic imaging provides promising methods to explore for deeply buried mineral deposits, including direct seismic imaging of ore bodies. As any geophysical method however, seismic interpretation suffers from non-uniqueness leading to a wide range of valid interpretation alternatives. In mature mining districts this interpretation ambiguity can be effectively reduced by integrating and reconciling densely distributed geological data acquired by drilling and detailed geological mapping with interpretations from 2D and 3D seismic surveys. Such an integrated approach enhances subsurface geological insight and allows reducing the number of alternative interpretations for the structural setting of the ore deposit, effectively contributing to exploration targeting in the mine camp and its *green-fields* periphery.



AIMS OF THE SHORT COURSE

This course provides participants with the necessary concepts, data processing and 3D modelling skills to meet the demand for geological interpretation in deep exploration settings. Through a series of lectures and hands-on exercises using case studies from VMS mining camps in Canada and Finland, the course participant will be guided through the various steps required for integrating and interpreting seismic, drill hole and geological map data in a 3D modelling environment. Reconciliation of geological, seismic data and derived interpretations will play a central role in the lectures and practical exercises. Furthermore, participants will be introduced to ore system modelling employing modelling techniques for 3D mapping of lithofacies, hydrothermal alteration, metal zoning and seismic properties.

SUBJECTS

Day 1

- Introduction to 3D modelling challenges in mine camps
- Geological interpretation of seismic data in the 3D modelling environment

Day 2

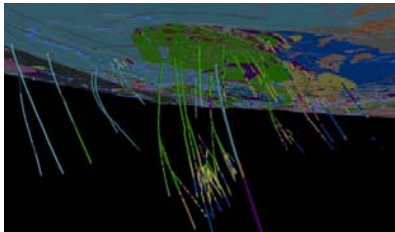
- Drill hole database management and visualization
- Reconciliation of geologic map and drill hole data

Day 3

- Seismic velocity–density logging & synthetic drill log seismographs
- Interpretation and surface modelling using seismic, drill hole and geologic map data

Day 4

- 2D and 3D seismic imaging in hard rock settings
- Introduction to seismic forward modelling techniques



LECTURERS

Dr. Ernst Schetselaar

Research Scientist, 3D Imaging & Earth Modelling Centre, Geological Survey of Canada, Ottawa

Dr. David Snyder

Head, 3D Imaging & Earth Modelling Centre, Geological Survey of Canada, Ottawa

Dr. Schetselaar (PhD Delft Technical University) is a structural geologist and geoscience data integration expert with 20 years of experience in applying geographic information systems and remote sensing methods to geological mapping and exploration. He is since 2007 employed at the Geological Survey of Canada in Ottawa, Canada where he works on 3D geologic modelling and integrated interpretation of geological, geophysical and remotely sensed data. He was previously employed at the International Institute for Geo-Information Science and Earth Observation (ITC) in the Netherlands.

Dr. Snyder has worked within this group at the Geological Survey of Canada since 1998 and served as the lead scientist on Lithoprobe's SNORCLE transect and in the

Downhole Imaging Consortium.

Previously he was part of the BIRPS (British Institutions Reflection Profiling Syndicate) core group at Cambridge, UK, doing marine-based, crustal-scale structural/seismic studies such as BABEL. He is formally trained in both structural geology and seismology (PhD Cornell University), and currently he is an Adjunct Professor at Queen's University, Canada.

COURSE VENUE

Kumpula Campus
University of Helsinki
Gustaf Hällströminkatu 2
00014 University of Helsinki

THERE IS NO COURSE FEE !

CONTACT INFO:

For inquiries and registration contact Suvi Heinonen/Institute of Seismology suvi.heinonen@helsinki.fi

Preference is given for PhD students from Helsinki university and other Finnish universities, but students and researchers from other organizations are also welcomed. The maximum number of participants is 20.

Registration no later than 27.4.