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Education: Ph.D. in Resource Geology (2003)

Research areas:

My research focuses on applied geology of mineral resources, mainly concerning the use of marble in the industrial minerals industry. My Ph.D. treated the geometry, internal structure and geochemical variations of the industrial mineral marble deposits in the Velfjord area, Nordland, which are mined by Hustadkalk AS.

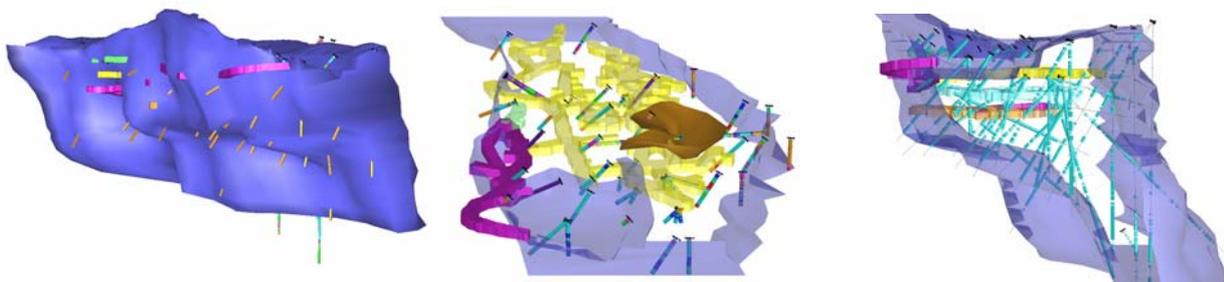
The thesis work included studies on geochemistry, mineralogy, structural geology and Sr isotope chemostratigraphy of the Velfjord marble deposits. The use of Sr isotope chemostratigraphy as a tectonostratigraphic tool is one of my special research interests.

My current post doctoral project is titled "3D geoscience modelling of onshore geological resources - With emphasis on mathematical geology and visualisation". The project aims to investigate the potential of 3D modelling and visualisation as a tool in the management and interpretation of spatial geological data.

This work includes interpretation and visualisation of deposit geometries (structural geology), the mine-scale distribution of waste rock inclusions and the distribution of the different marble qualities (structural geology, mineralogy and geochemistry). A special aspect of visualisation is to visualise the uncertainties associated with the spatial geological data and data interpretation. Several different 3D modelling approaches are used. Some are designed for the mineral industry, but also 3D visualisation technology from the petroleum industry is used. One example is the 3D visualisation laboratory (CLVR-lab), located at the Faculty. This laboratory is based on virtual reality technology, which enables the researcher to walk inside the created model.

The investigation is done by case studies of several industrial mineral deposits. Current case study deposits are the marble deposits of the Velfjord area, the marble deposits of the Molde area, including the Tverrfjell, Brandseter, Naas, Langnes and Visnes marble deposits, as well as the Tromsdal deposit near Verdal. The work is done in cooperation with the different companies mining these marble deposits.

The post doctoral project is open for additional case study deposits, where the investigation and visualisation of the 3D spatial aspects of the deposit is of interest.



3D geometry of a marble deposit

Horizontal and vertical section through the deposit, with drillholes and infrastructure
