



## **Processing of the reflection seismic profiles in the Skellefte Ore District, Northern Sweden.**

**J. Rodriguez-Tablante** (1), A. Tryggvason (1), C. Juhlin (1), A. Malehmir (1), H. Palm (1) & P. Weihed (2)

(1) Department of Earth Sciences, Uppsala University, Sweden, (2) Division of Ore Geology, Luleå University of Technology, Sweden (johiris.rodriquez@geo.uu.se)

In autumn 2003 two parallel reflection seismic profiles were acquired in the Kristineberg area, located in the western part of the Skellefte Ore District, the most important metallogenic zone in northern Sweden. This area has been the object for several geological and geophysical studies, but the contact relationships between the ore bearing rocks of the Skellefte group and the surrounding rocks are poorly known at depth. Thus, the aim of these profiles is to help improve the understanding of the crustal architecture of the region at depth and provide an image of the near-surface that can be correlated with the surface geology. Data were recorded along two nearly parallel profiles, each c 25 km long and separated by about 7 km. A novel approach in the acquisition was that all shots from each profile were recorded onto both profiles resulting in a third CDP line lying halfway between the two profiles (the cross-profile). Standard processing has been performed for the seismic data acquired along the profiles. Several sub-horizontal to steeply dipping reflectors from about 2 to 20 km depth are present on the stacked sections. Reflectivity down to Moho depth ~ 40 Km is clearly imaged. The cross-profile was processed as a conventional line, but due to low signal-to-noise ratio, additional surface-consistent corrections were needed. Results obtained from these profiles will be incorporated, together with surface geology and other geophysical information, for the construction of a pilot three-dimensional geological model of the area.