



## **Seismic imaging using mode-converted data from a 3C seismic landstreamer near Turku, Finland**

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Interlobate esker cores of the Virttaankangas area in southwestern Finland constitute a major aquifer to store water for the nearby city. Thus it is essential to image the substructure of the aquifer layers accurately and with good resolution so that underground pathways and storage capacity can be identified.

Theoretically, S-waves have a higher resolution than P-waves due to their shorter wavelength. Utilization of S-waves should result in better identification of the esker cores at deeper depths. Via modeling the elastic wavefield we generated synthetic seismograms based on field observed velocities of the P- and S-wave traveltimes. These synthetic data form the basis for testing processing parameters on real data acquired in the area. Images from PS (compressional-wave to shear-wave) mode-converted waves and SS (i.e. shear-wave to shear-wave) reflected waves should provide more precise stratigraphic information than those from PP reflected waves.

The real seismic data were acquired with a vertical impact source, but with reflections observed both on the radial and transverse components, as well as on the vertical component. The data set therefore is promising for checking a number of mode-converted imaging algorithms for near-surface applications, and also for providing information about the nature of the reflections and the physical property contrasts that generate them. This is an on-going work and results will be presented.