

**Crustal conductors in the Central Fennoscandia – constraints for a complex accretionary Svecofennian orogen**

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We have studied conductivity structures within the Svecofennian orogen, a complex accretionary orogen in the Fennoscandian Shield. The accreting units comprise a subducting plate carrying passive margin sequences and two island arc complexes with possible forearc, backarc and accretionary prism sequences. Conductors are interpreted as representing different types of closed basins and thus mark the boundaries between the accreting units. We have compiled old and new data from seven broad-band MT-profiles transecting palaeo-basins: the Kiiminki, Bothnian, Savo, and Kainuu belts in the central part of the orogen.

The data comprise c. 240 BMT soundings. Older data from 1980's were inverted for the first time. The new inversions of the old and new data revealed the sets of conductors with opposing dips. Conductors associated with the passive margin dip W/SW-wards whereas arc-affiliated conductors dip E/SE-ward. The Bothnian belt represents a palaeo-accretionary prism within which a large dome structure with a granitic core (Vaasa dome) has developed. The eastern part of the dome is characterized by deep conductors dipping E and below the neighbouring tectonic unit. On the surface, the prism sequences are dipping W-wards at low angles. Sub-horizontal conductors mark the bottom of the granitic core of the dome. A comparison of the conductivity models with airborne electromagnetic and seismic data and lithological maps suggest that upper to middle crustal conductors are composed of graphite- and/or sulphide-bearing metasedimentary rocks and lower crustal conductor under the Central Finland Granitoid Complex probably of oxides.