Dyke Complexes of the Scandinavian Caledonides

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Dyke complexes (c. 615 – 560 Ma) exposed in the Scandinavian Caledonides are part of the Central Iapetus Magmatic Province, a large igneous province related to the opening of the Iapetus Ocean and an earlier phase of the North Atlantic Wilson Cycle. These include a >1000 km long dyke complex preserved in the Särv, Seve and Corrovarre nappes (Andréasson et al., 1998; Hollocher et al., 2007; Tegner et al., 2019) and dykes of the Seiland Igneous Province preserved in the Kalak nappe (Robins and Takla, 1979; Reginiussen et al., 1995). The compositions of the >1000 km long dyke complex is mainly tholeiitic and displays lateral geochemical zonation from enriched to depleted basaltic compositions from south to north. In addition, the central part of this dyke complex (in Trøndelag, Norway and Jämtland, Sweden) displays alkali basalt compositions. In contrast, the dykes of the Seiland Igneous Province are entirely composed of alkali basalts including ankaramite, picrite and lamprophyres. In this talk we will review the geochemical details of the basaltic magmas in the Scandinavian dyke complexes and discuss their origin from heterogenous and most likely multiple mantle plumes, and from enriched subcontinental lithospheric mantle.

References

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