

## Net-veined and pillow structures in the 1.64 Ga Ahvenisto complex, southeastern Finland

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Net-veined and pillow structures are typical features of plutonic systems where magmas of different compositions, viscosities, and temperatures (e.g. felsic-mafic) have existed contemporaneously. The bimodal Ahvenisto massif-type anorthosite complex in southeastern Finland comprises a granitic batholith surrounded by a horseshoe shaped arc of anorthositic and monzodioritic rocks, which have intruded the Svecofenian country rocks rather simultaneously at  $\sim 1.64$  Ga. U-Pb geochronology has not been able to distinguish between the ages of granite and anorthositic rocks, but field relations show that when their contacts are sharp, the granites have always intruded the anorthositic rocks.

Recent field work has, however, uncovered prominent mingling structures between monzodioritic and granitic rocks in the Ahvenisto complex in two locations: on the northwestern flank in the Tuuliniemi region and in the southeastern Pärnäjärvi area. In both locations the mingling regions form domains that are several hundreds of meters thick and located structurally between the anorthositic rocks and what have been interpreted as early hbl-granites that have intruded between the country rocks and the anorthositic arc. This suggests that the monzodioritic magmas represent the latest stages of mafic magmatism that overlapped with the earliest silicic magmatism in the Ahvenisto complex.

In more detail, the mingling structures are formed by sparsely plagioclase-porphyric, fine-grained monzodiorite pillows which are intruded by thin finger-like granitic dykes forming locally net-veined structures.

Field work, detailed mapping, and geochemical (whole-rock XRF) and petrographic analyses combined with melt viscosity modeling will be used to document the features and extent of the locations and to study the origin of the structures.