

# the Fennoscandian Microseismicity

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The conventional picture of the seismicity in Finland, and the rest of Fennoscandia, has been that earthquakes are mostly individual or doublet events without fore or aftershocks. This notion of apparent singularity is based on automatic detection and classification tools and manual analysis workflow designed for regional events visible on multiple stations over a relatively sparse seismic network. On the other hand, in Wyborg rapakivi batholith, located in south-east Finland, earthquakes have been known to exhibit a more swarm type behaviour, where a single larger – ML 1.0 to 3.0 – event can be surrounded by tens if not hundreds of smaller events above ML 0.0. In this study, we apply a cross-correlation based event detection suite, developed for a dense array based seismic network monitoring enhanced geothermal system in the Helsinki capital region, to various Fennoscandian earthquakes. Using a template created from a selected earthquake, the suite is able to identify smaller seismic events with a location and source mechanism similar to the template event. In areas with a dense station coverage, we can detect events down to  $\sim$ ML -1.0. This provides us with an improved image on the nature of microseismicity related to the Fennoscandian earthquakes.

## E-mail

tommi.at.vuorinen@helsinki.fi

## Promotional text

We used a cross-correlation based event detection suite to completely renovate our view on microseismicity related to larger Fennoscandian earthquakes.

## Oral preference format

in-person

**Primary author:** Mr VUORINEN, Tommi Antton Tapani (University of Helsinki, Institute of Seismology)

**Co-authors:** HÄLLSTEN, Jennifer (University of Helsinki, Institute of Seismology); OINONEN, Kati (University of Helsinki, Institute of Seismology); LUHTA, Tuija Orvokki (University of Helsinki, Institute of Seismology)

**Presenter:** Mr VUORINEN, Tommi Antton Tapani (University of Helsinki, Institute of Seismology)

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