



Ground-based ELF-VLF observations at Kannuslehto during the first year of ARASE

Jyrki Manninen*⁽¹⁾ and Tauno Turunen⁽¹⁾

(1) Sodankylä Geophysical Observatory, University of Oulu, Sodankylä, Finland, e-mail: Jyrki.Manninen@oulu.fi; Tauno.Turunen@pp.inet.fi

The ERG (Exploration of energization and Radiation in Geospace) project is a mission to elucidate acceleration and loss mechanisms of relativistic electrons around Earth during geospace storms. The project consists of the satellite observation team, the ground-based network observation team, and the integrated data analysis/simulation team. After the launch, ERG was nicknamed to ARASE.

All satellite projects observing the geospace are needing also reliable and high-quality ground-based data in order to explain different kinds of events observed by the satellites. ARASE satellite is having several particle instruments, plasma wave instrument, and magnetic field instrument. Often, we should be able to separate spatial and temporal features from our observations. In this case, we can often use ground-based data to find out the differences.

In this presentation, we will show ground-based ELF-VLF observations during the winter campaigns of ARASE. The first campaign was organized in the end of March and beginning of April in 2017. Other campaigns have been made in the autumn 2017 and winter 2018. One interesting event is shown in Figure 1. Several other interesting observations will be presented.

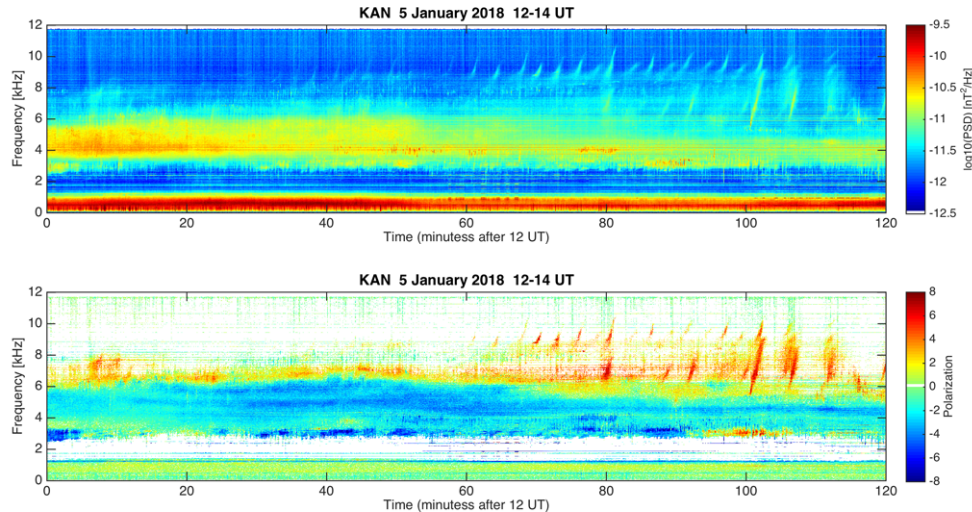


Figure 1. ELF-VLF total power and polarization plots observed at Kannuslehto at 12-14 UT on 5 January 2018. Emissions reach the frequencies up to 10.5 kHz. Yellow and red colours refer to right hand polarization while green and blue colours mean left hand polarization.