



## **Conjugate observations of quasiperiodic emissions by the Kannuslehto station and Van Allen Probes spacecraft**

Barbora Bezdekova (1), Frantisek Nemecek (1), Jyrki Manninen (2), George B. Hospodarsky (3), Ondrej Santolik (4,1), William S. Kurth (3), and David P. Hartley (3)

(1) Charles University, Faculty of Mathematics and Physics, Prague, Czech Republic, (2) Sodankylä Geophysical Observatory, Sodankylä, Finland, (3) University of Iowa, Department of Physics and Astronomy, Iowa City, Iowa, USA, (4) Czech Academy of Sciences, Institute of Atmospheric Physics, Department of Space Physics, Prague, Czech Republic

Quasiperiodic emissions are electromagnetic waves observed in the inner magnetosphere in the frequency range between about 0.5 and 4 kHz both by ground-based instruments and satellites. They are characteristic by their almost periodic temporal modulation of the wave intensity with periods from tens of seconds to a few minutes.

This study presents an analysis of 26 events observed simultaneously by the Kannuslehto station in Finland ( $L \approx 5.46$ ) and Van Allen Probes spacecraft between 2013 and 2017. The spatial extent of detected events was investigated demonstrating that they typically expand less than about 45 degrees in the azimuthal direction. Radial distances of the events are systematically related to the plasmopause location with maximum event intensities by about  $2 R_E$  lower than the plasmopause. This indicates a probable location of their source region. Finally, event propagation parameters were analyzed as a function of relevant controlling factors, most importantly the distance from the plasmopause location.