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# New peculiarities of spectral structures of background electromagnetic noise at (0.5–8)Hz frequency band.

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The new broadband spectral maximum was detected and investigated at frequencies 2 - 6 Hz basing on the data collected at two middle latitude observation points “New Life” (Russia) and “Nurmirjaervi” (Finland). This maximum appears under quit geomagnetic conditions in 1 - 2 hours after sunset and disappears in a short time after midnight.

The following properties of this maximum were observed:

- The maximum displays more pronouncedly in the N – S component of magnetic field at both stations;

- The correlation between changing the maximum frequency and frequency scale of spectral resonance structure (SRS) was detected when both phenomena observed simultaneously;

- The coherence coefficient between both linear components of magnetic noise at maximum frequencies increases from $\sim 0.5$ to $\sim 0.75$;

- The broad band maximum appears simultaneously at both stations but with different maximum frequency and different arbitrary amplitudes.

The new features of SRS (complicate structure at middle latitudes) were found:

- Different frequency scales in N –S and E –W magnetic components sometimes occurs;

- Shifting of basic IAR frequencies also occurs in N –S magnetic component in comparison with - E –W one as well as strong non-equidistant resonance peaks.

The mentioned above peculiarities were observed preferably at the winter season.

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