Spectral resonance structure of natural ULF magnetic field observed at L=2.0

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Observations of the magnetic component of natural electromagnetic noise are used to study the spectral resonance structure (SRS) that is believed to appear due to ionospheric Alfvén resonance (IAR). The observations have been run sporadically in the Bieszczady Mountains in Poland since 1996. Power spectra in the range 0.5 - 2.5 Hz are analyzed to estimate the frequency scale of the structure. An algorithm of evaluating the frequency scale, constructed in the basis of a simple model of IAR and formation of the SRS, is presented. The algorithm is applied to data recorded from 1996 to 2003. The occurrence of the SRS, the frequency scale values and their diurnal and long-term variations are studied. The ionosphere parameters determining SRS characteristics are obtained with International Reference Ionosphere model to compare modeled and observed values of the SRS frequency scale.