The lower hybrid frequency range wave emission in the ohmic discharge of the FT-2 tokamak [[1]](#footnote-1)\*)

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The paper presents observations of plasma intermediate frequency range wave emission ((200-800) MHz) performed in ohmic discharge of the FT-2 tokamak (R=55cm, a=8cm, Bt=2.2T) [1, 2].

The signal is observed in the line-averaged density range (1-3)\*1013 см-3 and has the character of fairly regular bursts, their number and amplitude decreases with increasing density. An analysis of the spectrum of the observed radiation shows that the signal consists of several (3-5) frequency peaks connected together, the amplitude of which is 10-30 dB higher than the noise level. The frequency separation of the peaks is close to the ion-cyclotron frequency for the value of the toroidal field of the FT-2 tokamak.

Observations were performed using RF probes and one of the waveguides of the lower hybrid antenna. Radiation analysis was performed by a broadband (up to 8 GHz) Keysight MSOS804A digital 4-channel oscilloscope.

The paper presents the dependences of the RF signal amplitude and spectrum on the plasma parameters and on the location of the probes. The correlation analysis of radiation in the intermediate frequency range carried out for signals of two probes shifted by 90 degrees along the toroidal angle have demonstrated high correlation level and allowed to determine the velocity of its propagation. Two possible explanations for this effect is proposed, one of them is related to the distortion of the electron distribution function due to the strong ripple of the magnetic field in the FT-2 tokamak, second one is related to the run-away electrons.

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1. \*) [abstracts of this report in Russian](http://www.fpl.gpi.ru/Zvenigorod/L/Mu/ru/AP-Konovalov.docx) [↑](#footnote-ref-1)