A JET MODEL INTERPRETATION OF MULTI FREQUENCY FLUX OBSERVATIONS OF RADIO OUTBURSTS IN THE AGN 0235+16

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There are analyzed 1.5 - years observations of a series of bursts in the quasar 0235+16 at 8 frequencies between 0.3 GHz and 15 GHz from July 1981 to December 1982, obtained by Altschuler et al. (1984) and Aller et al. (1985). These observations are compared with a Hedgehog model (see Kovalev and Mikhailutsa, 1980, with full references).

Results for 3 of 7 fitted spectra are presented on the Fig.1. Points reflect the real simultaneous observations, but crosses - interpolated data. Solid lines are model results. All 7 observational spectra are in agreement with in this model calculated spectra by the χ^2 - criteria on the validity level of 0.05 (the level of faithfulness is 0.95). Observations can be explained by the synchrotron emission of a narrow jet of relativistic particles in a strong radial magnetic field of the active nucleus.

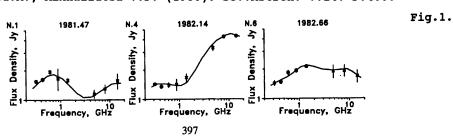
The variability of the spectra is explained by a time variability of this particles flow. The jet starts at a distance of~ 1.E19 cm from the center of the AGN. On the preliminary estimations, the observed brightness temperature and a magnetic field near the start of the jet can be equal or less than 4.E11 K and 0.5 Gauss, respectively.

References

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