

## ON POLARIZATION PARAMETERS VARIABILITY OF OBSERVED GALACTIC RADIO EMISSION

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**ABSTRACT.** Correlations between the solar activity and the observed polarization of the galactic radio emission are discussed.

**Key words:** Radio emission, polarization

Already during the first investigations of lineally polarized galactic radio emission in 1956–1962 it has been noted the correlation of polarized temperature  $T$  at a frequency of 207 MHz and the solar activity (Razin 1958, 1964).

It has been observed rapid irregular and very strong (up to 100%) daily variations of  $T$  and its slow variations with typical period of several months and years. The position angle of radio emission polarization plane  $Y$  has been also changed. A further multi years regular polarization observations of the galactic radio emission in the direction in the North Celestial Pole and to the area of strong polarization with galactic coordinates  $l = 147^\circ$ ,  $b = +8^\circ$  at a frequency of 290 MHz and in a frequency band of 195–215 MHz carried out at Radio Astronomy Station Staraya Pustyn (NIRFI) have also discovered the variability of  $T$  and  $Y$  in a wide time intervals.

The analysis of measurement results for a period from 1977 to 1988 has showed that there is no direct dependence of  $T$  and  $Y$  on solar activity index  $R9$  as well as the index of geomagnetic activity  $C9$  while during the increase of solar activity from its minimum in 1983–

1984 up to 1988 the mean value of  $T$  has been doubled. During this period  $Y$  was changing a little and only in summers 1984 and 1985 during 1–2 months it has been noted its variations from the average value on  $30 - 40^\circ$  taking place at the increase of the average value and strong fluctuations  $T$  (Teplykh and Kovalchuk, 1986).

Among possible reasons of variability of galactic radio emission polarization parameters one should consider the effects of radio wave propagation in nonhomogeneous magnetoactive plasma, the emission of nonstationar fluxes of high energy electrons in the Earth magnetosphere and interplanetary medium. At present time the correlation of  $T$  and  $Y$  variations with cosmic data is under investigation. The results of ground experiments are being used as well as those obtained at satellites and spacecraft.

### References

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