

PECULIARITIES OF QPOS OF MICROWAVE EMISSION OF THE FLARING SOLAR ACTIVE REGIONS

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Quasi-periodic oscillations of solar coronal structures are effectively registered in particular at microwave waves. The physical nature of periodical processes in the corona is clearly connected with plasma structures of the solar atmosphere.

On the other hand, the modern conception is that processes leading to eruption of energy in solar flares are results of energy accumulation in the corona or chromosphere produced by some reconstruction of plasma structures.

In spite of developments of the modern observations predominantly using cosmic techniques, we are still far from a satisfactory observational understanding of the above processes. The QPOs of solar active regions were found decades ago and their connections with the flares were detected. Nevertheless, the physical nature and possible forecasting applications are still far from a reasonable level of knowledge. New development of microwave instruments with a high spatial resolution and regular observations (NoRH, RATAN-600, SSRT at Badary) opened a new era in such studies. Oscillations with periods from few minutes to hours were investigated and their time variations were specially analysed. So, we may conclude that investigations of these parameters for ARs with different levels of flare activity, time variations including, may lead to a better understanding of the physics of the problem. Some preliminary results of such studies are presented in this report, based on an analysis of the Nobeyama radio maps of the Sun with the 10 sec averaging and covering periods of hours of observations (dates 11 Sep 2001, 07 Oct 2002, including), and comparing these with spectral parameters of the regions obtained with RATAN-600. This study was partially supported by the Program of the Presidium or the Russian Academy of Sciences.