

STUDYING TRANSIENT FEATURES THROUGH THE SOLAR CORONA BY 406.7 MHZ RADIO TELESCOPE

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Abstract

Solar variability originates from the interior of the Sun. One very important aspect of solar variability is to link solar magnetic fields generated below the convective zone in the interior. The evolution of magnetic fields is responsible for variety of manifestations like the well known coronal mass ejections. Solar origin of variability, corresponding time-scale, and suggested possible climate changes are summarized first in the paper. The shape of the corona depends on the distribution of the magnetic field lines and it is possible to study transient features due to large scale mass ejections through the corona. We have received radio signals from solar corona by using 406.7 MHz radio telescope in our observatory at Kalyani (22.98°N, 88.46°E). The selection of the fixed frequency at 406.7 MHz of the receiver is to receive radio signal from the solar corona region. Radio signals owing to solar corona received at different dates when analyzed have shown interesting characteristic patterns with a variation in the signal levels. The varying nature of enhancement in the received radio signal may presumably be associated with the type of corona responsible for producing the characteristic patterns of the radio signal.

Keywords: Solar variability, Solar magnetic field, Corona, Transient variations, Radio signals.