



## **Commercial TV dish antenna for Solar Radio Observations in the Ku-Band**

G.V. S. Gireesh<sup>1</sup>, C. Kathiravan<sup>1</sup>  
Indian Institute of Astrophysics<sup>1</sup>, Bengaluru

Commission Name : **(JGH7) Recent Scientific Results on Solar, Solar Wind and Space Weather Observations**

### **Abstract**

We present here the details related to the prototype set-up that has been commissioned for daily observations of the Sun at ~11 GHz using commercially available low cost TV dish antenna in total power mode to study in the upper solar chromosphere from where the 11 GHz emission originates in the Sun's atmosphere. We could also successfully observe the radio emission from the "background" Sun during periods when there were no transient solar activity.

The Low Noise Block (LNB), feed for the TV dish antenna is capable of receiving signals in Ku-Band from 10.7 GHz to 11.7 GHz. This LNB uses frequency down converting technic with a Local Oscillator (LO) of 9.75 GHz mixing with the incoming signals as mentioned above and thereby producing the Intermediate Frequencies (IF) from 950 MHz to 1950 MHz respectively. The power spectrum of these downconverted IF signals are captured by commercially available Agilent's Handheld Spectrum Analyzer. The observed data is preserved in a PC by means of a data acquisition control from PC to Spectrum Analyzer.

It is proposed to setup an array of antennas to image the Sun in the above frequency range to study the solar activity and its relation to space weather.