

MM. WAVELENGTH SPECTROSCOPIC OBSERVATIONS
OF SOLAR ACTIVITY REGION

by

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ABSTRACT

There is a lack of mm-wavelength spectroscopic solar observations. However, there are suggestions that a fine structure in frequency may be superimposed on the S-component of solar active region as well as on the burst component at mm-wavelengths. To study this, a high sensitivity step frequency receiver operating in the range of 23-19 GHz with high frequency resolution of 1 GHz and variable time resolution 1 to 96 sec, using 13.7 m Itapetinga radome covered antenna, has been developed. Here, we describe briefly the sweep frequency mm-wavelength spectroscope, and present observations of a solar active region carried out with the above system. These observations suggest that in the above mentioned frequency range, the radiation is mostly due to thermal bremsstrahlung; but there are indications that a fine structure in frequency is superimposed on the thermal S-component of the active region.