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Flat Optically Thick Microwave Spectra Observed by EOVSA SHAHEDA BEGUM SHAIK, DALE E. GARY, New Jersey Inst of Technology — The aim of this research is to examine the spectral dynamics of the low frequency gyrosynchrotron emission in association to the burst source of a solar flare. Studies focusing on the low frequency characteristics of bursts are rare, mainly due to the previous lack of the combination of spectral and spatial resolution in observations. High-resolution spectra observed by newly upgraded Expanded Owens Valley Solar Array(EOVSA) in the frequency range of 2.5 to 18 GHz are presented. Out of 14 events analysed in this study, 6 bursts display 'flat' optically thick spectrum (spectral index l ¡ 1.0), in contrary to the expected slopes and predictions of a homogeneous source model. This flat spectrum in a few events is observed especially in the decay phase of the burst and moreover with a constant reduction of spectral slope over the duration of the burst. This feature of flat spectrum can be explained as the emission from a spatially inhomogeneous gyrosynchrotron source of the flare, which evolves with the burst time. Additionally, the decrease in the flux with decreasing frequency leading to low index value in the optically thick side can also be often due to the gyrosynchrotron absorption. The physical parameters with probable dependence supporting the flat spectrum are presented.

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