



Analysis of Type II Radio Bursts During Solar Cycle 24

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Abstract: We present here the analysis of metric type II radio bursts during solar cycle 24 (2008-2016). The data is taken from the Culgoora spectrograph and the Lasco CME catalog. According to their starting frequency, we have divided the data into three categories namely high ($f \geq 100$ MHz), mid ($50 \text{ MHz} < f < 100$ MHz) and low (≤ 50 MHz). Majority ($\approx 46\%$) type II radio bursts occur in mid-frequency range. For low frequency type II, the delay of the flare start and type II start time is large in comparison to high and mid frequency type II radio bursts. Associated CME speed is higher for the low frequency than the mid and high frequency groups. The associated flare properties i.e. rise time, duration and delay show good correlation with type II starting frequency. We have concluded that the high frequency type II bursts are generated by flares whereas the mid frequency type II are driven by CME.

Keywords: Type II radio bursts; Sun; Flares; CMEs.