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Comparison of type II theory with observation for the 24-26th August event.

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A recently developed theory for the generation of type II solar radio emissions is used to predict dynamic spectra for a well observed type II event. The theory utilises a 2-D data-driven solar wind model based on spacecraft observations at 1 AU. Theoretical spectra are plotted relative to the galactic background radiation and thermal plasma noise with time and frequency resolutions matching those found in observations. Theory is then compared with observations via a cross-correlation method, yielding correlation coefficients and frequency and time offsets as the quantitative measures of agreement. Three main results are shown. First, using nominal shock parameters of *Bale et al.* (1999) and *Florens et al.* (2007), a correlation coefficient of 30% is obtained. This is increased to 40% and offsets further reduced by slightly altering these parameters. This suggests reasonable agreement between the theory and observations. Second, variation of shock parameters such as shock direction, velocity, size and expansion index leads to large variation in emission and hence levels of agreement. Third, potential exists for remotely sensing shock characteristics by maximising this agreement. This is demonstrated by iteratively cross-correlating the theory and data to maximise correlation coefficients and minimise offsets, leading to a set of constrained shock parameters.