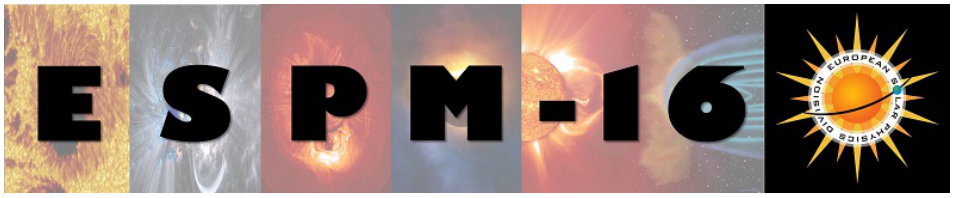

Contribution ID: **305** Type: **Poster**

A detailed look at type II radio burst fine structures using the Murchison Widefield Array

Wednesday, 8 September 2021 17:35 (13 minutes)

Type II solar radio bursts are believed to be caused by magnetohydrodynamics (MHD) shock-accelerated electrons in the solar corona. Often type II radio bursts can display fine structure in dynamic spectra. However, the cause of this fine structure and its relation to the shock is currently unclear. Here we present results from imaging analysis of type II radio burst fine structures observed by the Murchison Widefield Array (MWA) on 2014-Sep-28. The MWA provides high-sensitivity imaging spectroscopy in the range of 80-300 MHz with a time resolution of 0.5 s and frequency resolution of 40 kHz. We examine the small-scale motion of type II fine structure radio sources in MWA images. We suggest that this small-scale motion may arise due to propagation effects, a combination of scattering and refraction from coronal turbulence, and not because of the physical motion of the shock location. The study of the systematic and small-scale motion of fine structures may therefore provide a measure of turbulence in different regions of the shock and corona. We discuss how imaging the fine structure in type IIs can be used as a probe of propagation effects and turbulence during shock propagation through the corona.

Primary authors: Dr OBEROI, Divya (National Centre for Radio Astrophysics Tata Institute of Fundamental Research); Dr CARLEY, Eoin (Dublin Institute For Advanced Studies); BHUNIA, Shilpi (Dublin Institute For Advanced Studies)

Presenter: BHUNIA, Shilpi (Dublin Institute For Advanced Studies)

Session Classification: Poster Session 8.5

Track Classification: Session 4 - From Radio to Gamma Rays: Near-Sun Manifestations and Triggering of Solar Flares and Coronal Mass Ejections