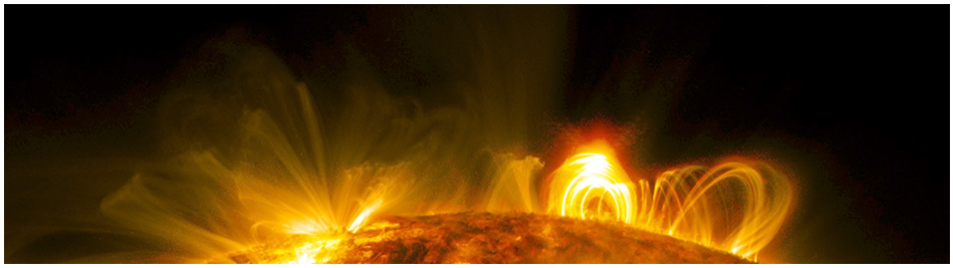

Contribution ID: **8** Type: **Poster**

Large Microwave Flare Sources with Multi-loop Magnetic Reconnection observed by EOVSA Imaging Spectroscopy

Wednesday, 17 November 2021 09:45 (1 hour)

We present the imaging spectroscopy of C-class flare SOL2017-04-04 observed by Expanded Owens Valley Solar Array (EOVSA) to investigate the source morphology of the low-frequency microwave emission. At the low frequencies, the microwave flare source showed an extended emission almost ten times as large as the usually observed high-frequency and hard X-ray flare emission. The source area seems to decrease steeply by more than an order of magnitude as we move from low to high frequencies. Unlike a single and straightforward loop "standard solar model" type flare, this event in the microwave emission shows the contribution of the multiple flux loops in different sizes with the "three-dimensional loop-loop interaction" scenario, resulting in the flare eruption. The emission at other wavelengths barely shows any sign of particle transport at the secondary sites where we see the low-frequency source centroids. These high-resolution microwave observations indicate that, after the main reconnection process, the accelerated particles have access to a much larger volume of the flaring region through the overlying loops. These results highlight the diagnostic potential of the microwave frequencies through which the physical conditions during the flares can be directly interpreted.

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