

Sixteenth Marcel Grossmann Meeting



Contribution ID: 848

Type: **Invited talk in the parallel session**

The First CHIME/FRB Catalog

Monday, 5 July 2021 17:10 (20 minutes)

Over the past decade, population studies of fast radio bursts (FRBs) have been challenging to undertake due to the small number of known sources detected with different telescopes and detection pipelines. However, the Canadian Hydrogen Intensity Mapping Experiment Fast Radio Burst (CHIME/FRB) project has now detected a large sample of FRBs which is well suited for such studies. The first CHIME/FRB catalog contains 474 non-repeating sources and 61 bursts from 18 previously reported repeating sources observed in the frequency range of 400-800 MHz. Detailed characterization of burst properties has revealed differences in morphology between repeating and non-repeating sources. Additionally, absolute calibration of selection effects has enabled measurements of the all-sky FRB rate and source-counts distribution and has provided evidence for a large fraction of the FRB population having scattering times greater than 10 ms (at 600 MHz). In this talk, I will present an overview of the catalog and discuss results from associated analyses. I will also present preliminary results from a population synthesis study assessing the astrophysical implications of the existence of a large population of highly scattered FRBs.

Primary author: Ms CHAWLA, Pragya (McGill University)

Presenter: Ms CHAWLA, Pragya (McGill University)

Session Classification: What Can We Learn from a Growing Sample of Fast Radio Bursts?

Track Classification: Fast Transients: What can we learn from a growing sample of Fast Radio Bursts?