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Probing the Origins of Fast Radio Bursts Through Searches for Multi-wavelength Counterparts

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Fast Radio Bursts (FRBs) are highly energetic, ~millisecond duration bursts of radio emission with extragalactic origins that were discovered nearly 19 years ago. While there is some evidence suggesting FRBs may originate from magnetars, there still remains the question of whether all FRBs are produced by magnetars. One potential method for further understanding FRB progenitors is through cross-matching FRBs with different transients with a known progenitor by searching for positional, redshift, and/or temporal coincidences. In this talk, I will discuss a new pipeline for the Canadian Hydrogen Intensity Mapping Experiment (CHIME) which automatically cross-matches all FRB candidates with gamma-ray bursts (GRBs) detected by the Swift observatory and Fermi telescope, gravitational waves (GWs) detected by the Ligo-Virgo-Kagra (LVK) collaboration, and optical transients reported in the Transient Name Server (TNS). I will also describe the largest campaign to cross-match over 4000 FRBs with all known gamma-ray bursts (GRBs) to determine radio upper limits for GRBs within CHIME's field of view. Finally, I will discuss the results of FRB-TNS optical transient crossmatching as a direct test to the FRB progenitor model.

Did you give a contributed talk at CASCA 2026?

No

If you are selected for a poster, would you be interested in giving a short flash talk on your work?

Yes

What is your career level?

MSc

Which keyword describes the area of focus of this talk?

Transients

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