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Future Science with a Growing CHIME/FRB Sample

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The radio transient phenomenon of fast radio bursts (FRBs), extragalactic flashes of radio emission occurring on ˜millisecond timescales, continues to defy a definitive explanation. Ongoing monitoring campaigns from dedicated radio transient surveys have provided a rich catalog that have spurred a wide variety of analysis of the FRB population as a whole as well as specific sources displaying repeat bursts. The FRB survey operating on the Canadian Hydrogen Intensity Mapping Experiment (CHIME/FRB) has been a key contributor to this growing sample, detecting FRBs at a rate of ˜few per day and poised to expand the current published FRB sample into the thousands. In this talk, I briefly review the recent science highlights from the first CHIME/FRB catalog and look to what a future sample of several thousand FRBs may tell us about these mysterious sources. In particular, I will focus on a special subsample of CHIME detected FRBs with corresponding voltage (baseband) data that enables significant improvements on localization and fluence measurement capabilities and additional science relating to microstructure and polarization.

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