

CHIME and Fast Radio Bursts

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Fast Radio Bursts (FRBs) are mysterious radio transients that occur at a prodigious rate of $\approx 10^3$ events per day above fluences of 1 Jansky-ms in the entire sky. Arriving from cosmological distances (\sim Gpc), FRBs show potential to be novel probes of cosmological parameters, the ionized baryon distribution, and the magnetic fields around and between galaxies. We do not know the origins of these bursts and a plethora of FRB models have been proposed but the tests of these models are observationally limited by the small heterogeneously assembled sample of FRBs. The Canadian Hydrogen Intensity Mapping Experiment Fast Radio Burst (CHIME/FRB) project at the Dominion Radio Astrophysical Observatory is designed to search a 200 deg^2 field of view for Fast Radio Bursts between 400–800 MHz with an expected FRB detection rate of between 1–10 FRBs/day which will lead to a large, well understood sample of FRBs. The CHIME/FRB backend is designed to detect and characterize FRBs in real time in 1024 independent beams on the sky and disseminate detection information for further multiwavelength follow up. I will discuss the design, ongoing commissioning and validation of CHIME/FRB, and future plans.

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