

Abstract Submitted
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Characterization of CHIME Pathfinder beam using source transits BIRGIT ROGALLA, GARY HINSHAW, Univ of British Columbia, CHIME COLLABORATION — The Canadian Hydrogen Intensity Mapping Experiment (CHIME) aims to study the accelerating expansion of the Universe by tracing the large scale matter distribution in the Universe. The Pathfinder is an on-site prototype used for developing instrumentation and to test calibration and analysis techniques. The ultimate aim of the calibration is to obtain sky data with sufficient signal-to-noise ratio in order to detect the faint cosmological signal, by filtering out the foreground. The focus of this talk is the calibration of the CHIME Pathfinder beam response by analysing transits from radio sources at a range of declinations and assessing the current beam model. The current model takes into account a secondary bounce in the primary beam due to the reflector structure. There is a phase shift between the measurements and GRASP beam simulations in the anticipated frequency ripple attributed to the secondary bounce. This implies that the current model needs improvement and requires further investigation. This analysis provides a unique opportunity to prepare for the calibration of the full instrument and improve our understanding of the working of this type of telescope.

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