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Beam profile measurements for the GroundBIRD experiment

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A generic prediction of inflationary universe is an existence of primordial gravitational waves. A very promising method for its detection is the precise measurement of the cosmic microwave background (CMB) polarization. Detection of an odd-parity (B-mode) pattern at degree-scales is the smoking-gun signature of primordial gravitational waves. The GroundBIRD experiment aims to measure the B-mode's power spectrum from the ground. Scans with high-speed rotations allow us to observe a large area of the sky, about ten times as large as those covered in other ground-based experiments.

Our telescope employs the Mizuguchi-Dragone dual-reflector design, which has low cross-polarization and diffraction limited field of view (FOV). In this talk, we will report results of our beam profile measurements and discuss the consistency. We will also discuss the consistency between the measured results and simulation.