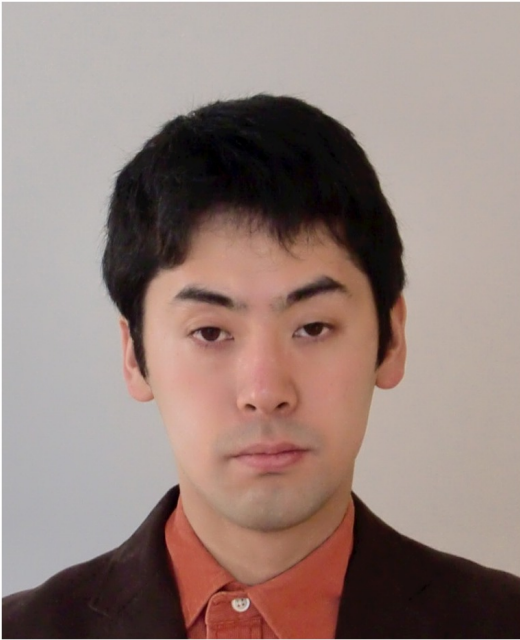


# KMI Colloquium

## GroundBIRD experiment - detection of CMB polarization power on a large angular scale from the ground



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**17:00-**

**KMI Science Symposia (ES635)**

### Abstract:

Precise measurements of CMB polarization resolve outstanding issues of the cosmology. Detection of its odd-parity patterns,  $B$ -modes, on a large angular scale is a smoking-gun signature of the inflationary universe. The radio telescope, GroundBIRD, employs one thousand of superconducting detectors. To obtain high performance from the detectors, it is important to eliminate an effect of detector's baseline fluctuation ( $1/f$  noise); this effect is four orders of magnitude higher than the  $B$ -modes. High-speed periodic motion of telescope's line of sight, i.e., "quick scan modulation" of the CMB signal, is the promising method to eliminate the  $1/f$  noise effect. To realize the quick scan modulation even on a large angular scale, GroundBIRD employs a novel scan method; a rotation scan at 20 revolutions per minute instead of the usual left-right azimuthal-motion scan. In this talk, I will introduce the cosmology and science of the CMB polarization measurement. I will also present a status of experiment and technology achievements.

