



Contribution ID: 325

Type: **Oral**

Observing the Polarization of the Cosmic Microwave Background with SPIDER

Monday 7 August 2017 14:00 (15 minutes)

SPIDER is a balloon-borne telescope designed to characterize the linear polarization of the cosmic microwave background at degree angular scales, and in particular to place constraints on the B -mode angular power spectrum arising from primordial gravitational waves. For the inaugural flight in January 2015, SPIDER observed approximately 12% of the sky with nearly 2000 detectors at frequencies of 95 GHz and 150 GHz in order to characterize the CMB power spectrum over the range $30 < \ell < 300$. In combination with *Planck* data at higher frequencies, the relatively large sky coverage over multiple frequency bands also enables characterization of foreground contributions from Galactic dust. A second flight in December 2018 will include several high-frequency instruments to further constrain Galactic foregrounds in our region of the sky. In this talk, we present preliminary analysis of data from the first flight, as well as science prospects for the second flight.

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Session Classification: Cosmology

Track Classification: Cosmology (incl. neutrino mass/number density)