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## First Results from POLARBEAR CMB Polarization Experiment

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A large number of Cosmic Microwave Background (CMB) polarization experiments have been searching for the CMB B-mode polarization signatures, which were produced either in degree scales by primordial gravitational waves from the epoch of cosmic inflation or in sub-degree scales by gravitational lensing by cosmological large-scale structure. POLARBEAR is a ground-based experiment designed to measure CMB B-mode polarizations at both angular scales at the Atacama desert in Chile and started observing in the early 2012 at 150 GHz with an array of 1,274 polarization sensitive antenna-couple Transition Edge Sensor bolometers with a beam size of 3.5 arcminutes. In the first season observations, POLARBEAR focused on measuring the polarization signals in the small angular scales and detected gravitational lensing with the CMB polarization data alone for the first time. The first results from the first season observations of POLARBEAR are presented in this talk.

### Summary

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