

Abstract Submitted  
for the APR18 Meeting of  
The American Physical Society

**CMB Data Analysis and Selection for POLARBEAR-2** RAYMOND TAT, Univ of California - Berkeley, POLARBEAR COLLABORATION COLLABORATION — Observations of the cosmic microwave background (CMB) B-mode polarization provide useful measurements of inflation and large-scale gravitational lensing. The POLARBEAR-2 (PB2) experiment is a ground-based telescope designed to measure this polarization. In order to mitigate the effects of low-frequency noise due to fluctuations in atmospheric emission, we modulate the polarization entering the PB2 camera using a rapidly-rotating half-wave plate (HWP). By then demodulating this signal, we can greatly suppress low-frequency noise in the demodulated data as demonstrated by the Atacama B-mode Search, as well as by POLARBEAR, the predecessor of PB2. Further, in order to more effectively process the CMB data collected from PB2, we investigate various methods of data analysis. We implement filters for detecting jumps and glitches in the transition-edge sensor (TES) timestreams, as well as set up a web site to allow collaborators to easily examine PB2 data. We demonstrate this software using data from POLARBEAR. We also perform a preliminary analysis of several supervised and unsupervised machine learning algorithms for use in CMB data selection and find that shallow neural networks yield the highest classification accuracy.

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Date submitted: 17 Jan 2018

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