

Bandpass and polarization-angle calibration requirements for B-mode searches with the Simons Observatory

Monday, 30 November 2020 20:45 (25 minutes)

I will discuss foreground and instrument systematic modeling for upcoming ground-based B-mode searches with the Simons Observatory (SO). I will begin by summarizing the power-spectrum domain foreground and systematic cleaning pipeline for SO. Using this framework we have quantified calibration requirements on bandpass and polarization angle systematics for the SO target of $\sigma_r \approx 10^{-3}$. We show that we can explicitly model and marginalize over systematic parameters to reduce biases on r , without incurring a large penalty on σ_r . The pipeline was validated on simulations and BICEP data. We then propagated these systematic requirements into instrument design choices for the HWP, sinuous antenna, and detector time constants.

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