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The Search for Inflationary B-modes: Latest Results from BICEP/Keck

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The BICEP/Keck experiments are compact refracting telescopes mapping the polarization of the Cosmic Microwave Background (CMB) from the South Pole in Antarctica. The primary goal is to detect or set limits on primordial gravitational waves by observing B-modes of the polarization pattern. Recently the BK18 results have been released which include all data taken up to and including the 2018 observing season. The new 95GHz map from BICEP3 now reaches an equal depth to the previous 150GHz map from BICEP2/Keck, and large amounts of new 220GHz data from Keck achieve a higher signal-to-noise on dust than the Planck 353GHz channel. A multicomponent fit to the cross-spectral data remains an adequate description of the data and gives a limit on the tensor-to-scalar ratio of $r < 0.036$ (95%), with no priors taken from other regions of sky. Running maximum likelihood search on simulations we obtain unbiased results and find that $\sigma(r) = 0.009$. I will discuss the BK18 data and analysis, as well as the ongoing program including delensing in conjunction with SPT.

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