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Delensing CMB B-modes: results from SPT.

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A promising signature of cosmic inflation is the presence of a "B-mode" component in the polarization of the Cosmic Microwave Background (CMB) induced by primordial gravitational waves. For many inflation models, this B-mode signal is predicted to be at a level detectable in the near future. However, current searches are limited by a "lensing B-mode" component that is produced by gravitationally lensed primordial E modes. In order to potentially detect the inflationary signal from B-mode measurements, lensing B modes must be characterized and removed in a process referred to as "delensing." This process has been studied extensively theoretically and with simulations, but has not been performed on polarization data. In this talk, we present the results of CMB B-mode delensing using polarization data from the South Pole Telescope polarimeter, SPTpol. Furthermore, using realistic simulations that include filtering and realistic CMB noise, we will show what is currently limiting the delensing efficiency and how it will rapidly improve in the near future.

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