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Measuring the primordial gravitational-wave background in the presence of astrophysical foregrounds[1] SYLVIA BISCOVEANU, Massachusetts Institute of Technology, COLM TALBOT, California Institute of Technology, ERIC THRANE, RORY SMITH, Monash University — Primordial gravitational waves are expected to create a stochastic background encoding information about the early Universe that may not be accessible by other means. However, the primordial background is obscured by an astrophysical foreground consisting of gravitational waves from compact binaries. In this talk, we will present a new Bayesian method for estimating the primordial background in the presence of an astrophysical foreground. Since the background and foreground signal parameters are estimated simultaneously, we avoid astrophysical contamination of the primordial measurement. Additionally, since we include the non-Gaussianity of the astrophysical foreground in our model, this method represents the statistically optimal approach to the simultaneous detection of a multi-component stochastic background.

Andrea Biscoveanu
Massachusetts Institute of Technology

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