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Loop Corrections to Cosmological Correlators

Tuesday 12 December 2023 16:30 (30 minutes)

Surveys of the Large Scale Structure are becoming increasingly detailed. A primary theoretical tool for analyzing this data and constraining cosmological models is the Effective Field Theory (EFT) of Large Scale Structure. In this presentation, I will describe an effort to calculate loop corrections to cosmological correlators within the EFT of LSS. I will discuss how loop integrals in cosmology can be mapped to conventional loop integrals in QFT with massive propagators. Within this framework, I will describe the efficient "analytical" computation of all one-loop correlators using powerful and well established QFT methods. Subsequently, I will discuss the introduction of numerical methods for computing multi-loop correlators. Finally, I will present the initial (preliminary) results for the two-loop corrections to the power spectrum.

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