

Cosmological correlators: more is difficult

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Due to the extraordinarily high energy scales inherent to inflation, it naturally functions as a cosmological collider to probe physics at otherwise inaccessible energy regimes, and the information are encoded in cosmological correlators. After many efforts in recent years, the analytical structure of the correlators associated with single massive spinning field exchange is well understood. However, moving beyond that is highly challenging with the complexity increasing significantly. In this talk, the speaker will present their recent work towards understanding the analytical structure of cosmological correlators involving double massive exchanges, using the recently developed cosmological bootstrap method. He will show how to obtain analytical results valid in any kinematic configuration and free from spurious divergences. Then he will explore the phenomenology of such double massive exchange processes. Finally, if time permits, he will also mention their recent works on the factorization of correlators which can give a shortcut to calculate a type of correlators and provide us testable relations among cosmological observables.

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