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A Match Made in Heaven: Linking Observables in Inflationary Cosmology

Wednesday, 9 July 2025 11:10 (20 minutes)

Cosmological correlation functions are fundamental observables in early universe cosmology and offer a remarkable window into the fundamental laws that governed the Universe's earliest moments. In this talk, the speaker will derive a correlator-to-correlator factorisation formula under mild assumptions, establishing a profound relationship between different observables in the context of primordial cosmology. As a concrete example, he will show that, in the minimal model of inflation that violates parity through a gravitational Chern-Simons term, the resulting parity-odd curvature trispectrum is a simple "double copy"of curvature–graviton mixed bispectra. This provides the first explicit example of a cosmological cutting rule that can be directly tested by future observations.

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