ICTS String Seminar

Title : Loops in Cosmological Correlators

Speaker : Supritha Bhowmick (Indian Institute of Science Education and Research Pune)

Date : Wednesday, 13 August 2025

Time : 3:30 PM (IST)

Abstract : In this talk, I will present our work (arXiv:2405.10374) on the computation of the Bispectrum at 1-loop in the Effective Field Theory of Inflation (EFToI). We find that the renormalized correlator features logarithms of ratios of comoving momenta, of the form $log(k_i/k_T)$. In contrast to the previously computed 1-loop correction to the power spectrum (arXiv:0912.2734), our unrenormalized expressions feature *unphysical logarithms* which are removed only upon including counterterm contributions. This cancellation is expected to be a general feature of higher-point loop corrections. I will also discuss our recent work (arXiv:2503.21880) on the singularity structure of inflationary correlators at one loop. We formulate a set of diagrammatic rules that allows extraction of the singularities of any two-site one-loop diagram—without performing the full integrals. Using these rules, one can obtain the poles and branch cuts by simply identifying the energy flow through specific subgraphs.

Venue : Emmy Noether Seminar Room
Zoom Link: https://icts-res-in.zoom.us/j/88092766911?pwd=R3ZrVk9yeW96ZmQ4ZG9KRzVhenRKZz09
Meeting ID: 880 9276 6911
Passcode: 232322