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Type: Talk

Modern Statistical Methods for Cosmological Inference: Samplers, Likelihoods, and Beyond

Tuesday 24 June 2025 15:15 (30 minutes)

We present a comprehensive statistical framework for cosmological parameter estimation, focusing on Baryon Acoustic Oscillation (BAO) analyses in the light of the DESI DR2. We focus on two complementary directions: the performance evaluation of various sampling algorithms and the investigation of likelihood formulations. We will discuss the role of the choice of a sampler in both its performance as measured by runtime efficiency and parameter accuracy across different dimensionalities and probability landscapes. Then we will examine statistical nuances in BAO analysis, comparing different likelihood formulations and their effect on the parameter constraints and their higher-order distribution properties.

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