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Field-Level Inference with Microcanonical Langevin Monte Carlo

Monday, November 27, 2023 3:15 PM (15 minutes)

Extracting optimal information from upcoming cosmological surveys is a pressing task, for which a promising path to success is performing field-level inference with differentiable forward modeling. A key computational challenge in this approach is that it requires sampling a high-dimensional parameter space. In this talk I will present a new promising method to sample such large parameter spaces, which improves upon the traditional Hamiltonian Monte Carlo, to both reconstruct the initial conditions of the Universe and obtain cosmological constraints.

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