

# Flow-based sampling for Effective String Theory

*Friday, 22 December 2023 11:45 (30 minutes)*

Effective String Theory (EST) is a powerful non-perturbative method used to study confinement in pure gauge theories through the modeling of the interquark potential in terms of vibrating strings. Due to the criticality of EST, an efficient numerical method to simulate such theories is still lacking. However, in the last years a novel class of deep generative algorithms called Normalizing Flows (NF) has been proposed as a sampler for uncorrelated configurations in order to fight standard monte carlo method problems such as critical slowing down. In this talk, I will introduce NFs and I will show a proof of concept of the application to EST. Then, I will outline Stochastic Normalizing Flows (SNFs), a combination of NFs and non-equilibrium MCMC calculations based on Jarzynski's equality able to obtain high-precision EST simulations.

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