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LIVERPOOL

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Stochastic Normalizing Flows for Effective String Theory.

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Normalizing Flows (NFs) are a class of deep generative models recently proposed as a promising alternative to traditional Markov Chain Monte Carlo methods in lattice field theory calculations. By combining NF layers with out-of-equilibrium stochastic updates, we obtain Stochastic Normalizing Flows (SNFs), an intriguing class of machine learning algorithms that can be explained in terms of stochastic thermodynamics. In this talk, we show that SNFs can be successfully applied as samplers for Effective String Theory (EST) on the lattice, a powerful non-perturbative approach to describe confinement in Yang-Mills theory which represents a significant challenge for standard sampling methods.

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