

XVth Quark Confinement and the Hadron Spectrum



Contribution ID: 70

Type: Oral

Studying Effective String Theory using deep generative models.

Thursday 22 August 2024 16:30 (20 minutes)

Effective String Theory (EST) represents a powerful non-perturbative approach to describe confinement in Yang-Mills theory by modeling the confining flux tube connecting a static quark-anti-quark pair as a thin vibrating string. EST calculations are usually tackled using zeta-function regularization; however, there are situations (for instance, the study of the shape of the flux tube or of the higher-order corrections beyond the Nambu-Goto EST) which involve observables that are too complex to be addressed in this way. Nevertheless, recent works have shown that EST can be numerically studied leveraging machine learning techniques based on deep generative algorithms. In this talk, we briefly introduce EST and the new numerical approaches. Finally, we present results for the Nambu-Goto string and its higher-order corrections.

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Session Classification: Vacuum Structure and Confinement

Track Classification: A: Vacuum Structure and Confinement