

Tuesday, June 9th @ 2pm

Schwinger Lounge

Hosted by Prof. Thomas Dumitrescu

“Imprints of asymptotic freedom on confining strings”

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Abstract: There is a longstanding dream of realizing large- N Yang-Mills theory in $D = 3,4$ as a theory of confining strings. So far, our knowledge of this putative string is restricted to low energies, where one can use an effective field theory describing small deformations on top of a long flux tube. In this talk I will describe what asymptotic freedom of the underlying gauge theory tells us about the high-energy behavior of the string. First, by comparing the partition function of a short cylinder with a perturbative computation, we will extract the asymptotic behavior of the coupling of closed-string states to a Wilson loop. Second, in a toy integrable setting, we will massage this into an asymptotic causality bound for the reflection matrix of a worldsheet Goldstone boson scattering against the boundary of the string.