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Three-dimensional U(1) strings beyond effective string theory

Effective string theory provides a successful description of the confining string in non-Abelian gauge theories. On the other hand, U(1) gauge theory in three spacetime dimensions, while confining, displays some peculiar properties (such as the impossibility of holding both the mass and string tension fixed in the continuum limit) which question the applicability of effective string theory to its confining string. In this talk, we report the results of numerical calculations of the ground state energy of the confining string in 3D U(1) gauge theory, and to what extent our results can be described by either effective string theory or alternatives, such as a recent proposal by Aharony, Barel and Sheaffer.

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