

Coleman-Weinberg Abrikosov-Nielsen-Olesen strings

mercredi 1 juin 2022 17:10 (20 minutes)

We study properties of Abrikosov-Nielsen-Olesen (ANO) cosmic strings with the Coleman-Weinberg (CW) potential, which we call CW-ANO strings. While the scale-invariant scalar potential has a topologically trivial vacuum admitting no strings at the classical level, quantum correction allows topologically nontrivial vacua and stable string solutions. We find that the system of two CW-ANO strings develops an energy barrier between them at intermediate (microphysical) distances, implying that the string with winding number $n > 1$ can constitute a metastable bound state. We also discuss implications to high-energy physics and cosmology. This talk is based on arXiv 2205.04394.

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