

String-localized quantum field theory - some ideas and perspectives

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The construction of string-localized free fields was rigorously accomplished almost twenty years ago. In this approach, the fields are operators in some Hilbert space, and therefore there are no unphysical degrees of freedom such as ghosts. In addition to allowing the construction of the fields entirely in a Hilbert space, the string-localized fields exhibit, in general, a good behavior in the ultraviolet regime and, among other features, the class (representation) of string-localized fields with $m = 0$ and $s = \infty$ are possible candidates to consistently describe dark matter. The interaction picture is obtained perturbatively via the Bogolyubov-Epstein-Glaser scheme together with the requirement that the S-matrix be string independent. This talk is intended to show some of the distinguishing features of sQFT along with future perspectives.

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