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Non-relativistic approximations of string theory

What is the geometrical arena of string theory? With the advent of non-Lorentzian geometry, there are tantalising indications of a "landscape" of non-Lorentzian string theories, suggesting that consistent versions string theory can be defined on such geometries. Perhaps the simplest and most well-studied non-Lorentzian string is the "non-relativistic" string, originally obtained by Gomis and Ooguri more than 20 years ago by taking a limit in a near-critical Kalb-Ramond background. Generalisations to curved space have since been developed that employ either string Newton-Cartan geometry or torsional Newton-Cartan geometry with an additional circle direction. In this talk, I will present a framework based on a $1/c^2$ expansion of closed bosonic string theory and show how the next-to-leading order theory is related to other non-relativistic string models. Finally, I will comment on the higher order NNLO theory.

Type of contribution

Contributed Talk or Poster

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