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JOHANNES GUTENBERG
UNIVERSITÄT MAINZ



RIND seminar on Mathematical Physics and String Theory

Nov. 14, 2022 at 4 p.m. c.t.
None

Joint seminar series on Mathematical Physics and String Theory

Raghu Mahajan
Stanford U.

ZZ instanton amplitudes in minimal string theory at one-loop order

We use insights from string field theory to analyze and cure the divergences in the cylinder diagram in minimal string theory, with both boundaries lying on a ZZ brane. Minimal string theory refers to the theory of two-dimensional gravity coupled to a minimal model CFT that serves as the matter sector; it includes JT gravity as a limiting case. ZZ branes are akin to D-instantons, and give rise to features that reflect the underlying discreteness of the dual theory. The exponential of the cylinder diagram represents the one-loop determinant around the instanton saddle. The finite result for this one-loop constant computed using the string field theory procedure agrees precisely with independent calculations in the dual double-scaled matrix integrals performed by several authors many years ago.

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