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Worldsheet Correlators in Black Hole Microstates

Tuesday, 20 December 2022 15:00 (10 minutes)

To account for all the bulk microstates of a three-charge black hole, the supergravity approximation may not suffice and full control over string theory may be essential.

Recently, a specific family of black hole microstates was shown to admit an exact string worldsheet description. The worldsheet theory is a coset of the well-studied $AdS_3 \times \mathbb{S}^3 \times \mathbb{T}^4$ model. This allows full control over the entire (perturbative) α' corrections.

I will show how to construct the physical vertex operators of these models, and how to compute an extensive set of novel heavy-light correlators.

I will present a closed formula for correlators with an arbitrary number of light insertions, written as a function of the correlators on $AdS_3 \times \mathbb{S}^3 \times \mathbb{T}^4$.

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