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Worldsheet Correlators in Black Hole Microstates

One of the most important objectives of string theory is to account for the bulk entropy of the 3-charge black hole. Some microstates may not have a reliable supergravity description, and thus models that capture stringy physics may be essential. I will present an exact worldsheet model describing the propagation of a string in some non-BPS microstates, and show how to compute correlation functions of physical states in this background. From the worldsheet, we obtain a new infinite family of new non-SUSY holographic Heavy-Light correlators involving an arbitrary number of light states in the chiral multiplet, with arbitrary conformal dimension and R-charge. Some of these correlation functions appear to be accidentally protected and perfectly match very few previously known cases computed at the orbifold point of the D1D5 CFT.

Author: Mr BUFALINI, Davide (University of Southampton)Presenter: Mr BUFALINI, Davide (University of Southampton)Session Classification: Reception & Poster session