

Phil Szepietowski: Alternative boundary conditions in AdS, one-loop determinants and WCFTs

Monday 15 May 2017 10:00 (1 hour)

I will discuss the computation of the graviton one-loop determinant in the BTZ black hole background with certain chiral boundary conditions at the AdS boundary. These boundary conditions were proposed by Compere, Song and Strominger and were shown to modify the asymptotic symmetry algebra from a sum of left and right Virasoro algebras to a single right-moving Virasoro $U(1)$ Kac-Moody. This implies that the holographic dual description possesses such global symmetry and so should be described by a warped conformal field theory (WCFT) instead of a standard CFT. In the talk I will overview the new boundary conditions and the concept of a WCFT, outline the computational method of obtaining the one-loop determinant from the “quasinormal” mode spectrum (highlighting elements which are unique to the new boundary conditions) and discuss the implications of the results for the boundary field theory.