

Physics Seminar: Gauri Batra

Wednesday, September 23•2:00 – 3:00pm in room 313

Title: A backreacted bouncing geodesic in 2D

Abstract: In holography, analytically continued finite temperature correlation functions exhibit a “ t_c singularity” whose bulk origin is a null geodesic “bouncing off” the black hole singularity. In this talk, I will describe how certain quantum corrections modify the t_c singularity in two-dimensional dilaton gravity. In particular, the backreaction of this bouncing geodesic on the geometry smooths out the t_c singularity. However, this does not mean that the black hole singularity itself is resolved. By following the backreacted geodesic saddle in a steepest descent analysis, I will show that the black hole singularity physics instead gets encoded in a subtle way near the coincident point singularities. I will conclude by discussing how such a signature is consistent with the structure of the OPE in higher-dimensional CFTs. Based on work to appear soon with Adam Levine and Steve Shenker.