

Yuefeng Liu: Non-conformal line defects and ETH in AdS₃/CFT₂

Monday, July 14, 2025 3:30 PM (30 minutes)

Defects in QFT can touch non-local correlations which are usually blank to local operators. In CFT, topological defects and conformal defects are under active research due to large symmetries they have. For non-conformal defects it is generally hard to have analytic control. However, inspired by recent works on wormholes and chaotic statistics of high energy sector of AdS/CFT system, a special kind of non-local non-conformal line defects (some literature call it thin-shell operator) are found to have analytic results. The technique that make this hard problem possible is special to holographic CFT₂, which is vacuum Virasoro block approximation and monodromy method. From point of these field methods, this special kind of non-conformal line defects are simpler (in some respects) than local operators. Interestingly, the whole story of this defect have relations with ETH of non-local operator and non-trivially backreacted gravity. In this talk, we want to report this developments and our recent work in May, 2025 that generalize this story to include higher point correlators with multiple defect insertions and spinning defect that have unequal holomorphic/ anti-holomorphic weight of defect operators. We expect our works would provide interests in both defect community and (chaotic nature part) AdS/CFT community.