

Speaker: Mihailo Čuborivć

Title: Stringy effects in chaos

Abstract: Black hole horizons and their holographic duals - strongly coupled thermal gauge theories - are well-known to exhibit fast scrambling and maximal chaos, which is best seen from their out-of-time ordered correlators. But the time is now ripe to look at chaos beyond classical gravity in the bulk. We will first look at D-brane dynamics in the framework of matrix models and show how stringy effects lead to sub-maximal chaos which in turn relates to the factorization problem in holography. We will also show how the infinite-matrix limit naturally leads back to black-hole-like fast scrambling. If time permits, we will also consider the opposite, perturbative regime by looking at the S-matrix of string-string scattering and find weak chaos with long-living states. This regime is disconnected from the fast-scrambling regime.