TEP Seminar

UCLA

Tuesday, January 18th @ 10am
Virtual- Zoom

"A definition of primary operators in $J\bar{T}$-deformed CFTs"

Monica Guico (IPhT CEA/Saclay)

Abstract: $J\bar{T}$-deformed CFTs provide an interesting example of non-local, yet UV-complete two-dimensional QFTs that are entirely solvable. They have been recently shown to possess an infinite set of symmetries, which are a continuous deformation of the Virasoro-Kac-Moody symmetries of the seed CFT. In this article, we put forth a definition of primary operators in $J\bar{T}$-deformed CFTs on a cylinder, which are singled out by having CFT-like momentum-space commutation relations with the symmetry generators in the decompatification limit. We show -- based on results we first derive for the case of J1∧J2-deformed CFTs -- that all correlation functions of such operators in the $J\bar{T}$-deformed CFT can be computed exactly in terms of the correlation functions of the undeformed CFT and are crossing symmetric in the plane limit. In particular, two and three-point functions are simply given by the corresponding momentum-space correlator in the undeformed CFT, with all dimensions replaced by particular momentum-dependent conformal dimensions. Interestingly, scattering amplitudes off the near-horizon of extremal black holes are known to take a strikingly similar form.