Department of Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES

Tauberian Theorems and High Energy Asymptotics in CFT

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Date: January 20th, 2020

Time: 11:30 am

Venue: A-304, TIFR

We analyze the universal asymptotic behaviour of CFT data using techniques inspired from Tauberian theorems appearing in the context of analyzing divergent series. I will be focusing on 2D CFT where we can also leverage the Modular invariance of the torus partition function. Blending Tauberian techniques and Modular invariance enables us to prove spin sensitive Cardy formula rigorously with an optimal error estimate. We also probe the finer details of asymptotic behaviour of the density of states, OPE coefficient and prove asymptotic bounds on the spectral gap. We comment on how generic and powerful Tauberian theorems can potentially be in analyzing the asymptotic data in any dimensional CFT.