



Department of
Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES

Solving AdS/CFT with strong Szegő limit theorem (Zoom Seminar)

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Date: September 28, 2020

Time: 3:00 pm IST

Zoom link shall be shared separately



I will report on a recent progress in computing four-point correlation functions of infinitely heavy half-BPS operators in planar $N = 4$ SYM. Taking advantage of integrability of the theory, these correlation functions can be constructed in terms of fundamental building blocks - the octagon form factors. We show that these functions can be expressed as the Fredholm determinant of the integrable Bessel operator and demonstrate that this representation is very efficient in finding the dependence of the octagons on the 't Hooft coupling and two cross ratios. At weak coupling, this yields a known series representation of the octagon in terms of ladder integrals. At strong coupling, we apply strong Szegő limit theorem to develop a systematic expansion of the octagon in the inverse powers of the coupling constant and calculate accompanying expansion coefficients analytically.