



**S N BOSE NATIONAL CENTRE
FOR BASIC SCIENCES**

Block JD, Sector III, Salt Lake, Kolkata 700 106

DEPARTMENTAL SEMINAR

Department of Astrophysics and High Energy Physics

24th May, 2024

3.00 PM

FERMION / ONLINE

SPEAKER

**Dr. Julius Julius,
Postdoctoral Research Fellow,
HRI Allahabad**

TITLE OF THE TALK

CFT-data of N=4 Super-Yang-Mills

ABSTRACT

We discuss 4D N=4 Super-Yang-Mills (SYM) theory in the planar limit. We pose the question: how to find the CFT-data of the theory? The anomalous dimensions of single-trace "stringy" super conformal primary operators can be numerically computed using the integrability-based Quantum Spectral Curve method, and we go through the recent results. We highlight the strong coupling limit of the theory where the spectrum possesses an interesting structure and organises into the KK-towers. We also discuss lifting the degeneracy of the structure constants of the "stringy" operators at strong coupling and describe the observed patterns. Combining our spectral results with recent advances in computation of the AdS Virasoro-Shapiro amplitude, we are able to extract predictions for many unprotected OPE coefficients of N=4 SYM at strong coupling. We comment on certain curiosities and patterns observed in the obtained predictions.

HOST FACULTY

Dr. Parijat Dey, Assistant Professor

Dept. of ASTROPHYSICS AND HIGH ENERGY PHYSICS
