



ICTS String Seminar

Title : The giant graviton expansion in $AdS_5 \times S^5$

Speaker : Sameer Murthy (King's College London, United Kingdom)

Date : Tuesday, 31 December 2024

Time : 11:30 AM (IST)

Abstract : The superconformal index of $1/2 - BPS$ states of $N = 4U(N)$ super Yang-Mills theory has a known infinite q -series expression with successive terms suppressed by q^N , called the Giant Graviton Expansion. We derive a holographic bulk interpretation of this series by considering the corresponding functional integral in the dual $AdS_5 \times S^5$ at finite N . I will discuss how the integral localizes to collections of maximal giants, i.e. D-branes wrapping a maximal 3-sphere inside the 5-sphere. The small fluctuations of the maximal giant are described by a supersymmetric version of the Landau problem. The supersymmetric index of this system and its matrix versions precisely reproduce the successive terms of the GGE.

Venue : Emmy Noether Seminar Hall

Zoom Link: <https://icts-res-in.zoom.us/j/88092766911?pwd=R3ZrVk9yeW96ZmQ4ZG9KRzVhenRKZz09>

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