

Seminar Notice

On 1st June, 2022 (Wednesday)

Time: 3:30 PM

Venue: PAMU Seminar Room

Physics and Applied Mathematics Unit
Indian Statistical Institute, Kolkata- 700108

Speaker: Dr. Taniya Mandal

*Postdoc, School of Physics,
University of the Witwatersrand, Johannesburg,
South Africa*

Title: Generalization of Freudenthal Duality for Near-Extremal Black Holes

Abstract:

Freudenthal duality (F-duality), an anti-involution of charge vectors keep the entropy and attractor solutions invariant for an extremal supersymmetric black hole. This duality holds for both ungauged and gauged extremal black holes in four dimensions. In this talk, I will discuss the effect of F-duality on the entropy of a near-extremal black hole. Specifically, I will consider double-extremal STU black holes in four dimensional, $N=2$, ungauged supergravity.

It is well known that the two-dimensional Jackiw-Teitelboim (JT) gravity governs the dynamics of the near-horizon regions of higher dimensional, near-extremal black holes. Thus, dimensionally reducing the four-dimensional supergravity theory one can construct a JT-gravity like model and compute the near-extremal entropy. I will then analyze the effect of F-duality on this near-extremal entropy. I will show that the F-duality breaks down for the case of near-extremal solutions if one considers the duality operation generated through near-extremal entropy rather than the extremal one.

All are Cordially Invited to Attend

(Head, PAMU)