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

29th May,2023 **4.00 PM** **ONLINE/ FERMION**

SPEAKER

Prof. Rukmini Dey
ICTS-TIFR, Bengaluru

TITLE OF THE TALK

Berezin-type quantization on compact even dimensional manifolds
And pullback coherent states

ABSTRACT

We first give a local description of Berezin quantization of ${\mathb›C}P^d$.
We show that a Berezin-type quantization can be achieved on a compact even dimensional manifold M^{2d} by removing a skeleton $M_ 0$ of lower dimension such that what remains is diffeomorphic to R^{2d} which we identify with ${\mathbb C}^ d$ and embed in ${\mathbb C}P^ d$. A local Poisson structure and Berezin-type quantization are induced from ${\mathbb C}P^ d$. This construction depends on the diffeomorphism. We study the possibility of this construction to be extended to the whole of M. We have a similar construction where we consider an arbitrary complex manifold and use local coordinates to induce the quantization from ${\mathbb C}P^ d$. We study the possibility of defining a global Berezin quantization on compact complex manifolds. We give a similar construction of Berezin-Toeplitz quantization. Finally, we give a simple construction of pullback coherent states on compact smooth manifolds.

HOST FACULTY

Dr. Tapas Baug, Assistant Professor
Dept. of ASTROPHYSICS AND HIGH ENERGY PHYSICS

****