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

22nd March,2023 **3.00 PM** **ONLINE/ FERMION**

SPEAKER

Dr. Anindita Bera,
Post-Doctoral Fellow at Institute of Physics, Astronomy and Informatics, Nicolaus Copernicus University, Poland

TITLE OF THE TALK

A class of Bell diagonal entanglement witnesses in C^4 ⊗ C^4 : optimization and the spanning property

ABSTRACT

In this talk, I will be discussing *t*wo classes of Bell diagonal indecomposable entanglement witnesses in C^4 ⊗ C^4. The first class is a generalization of the well-known Choi witness from C^3 ⊗ C^3, while the second one contains the reduction map. I will show contrary to C^3 ⊗ C^3 case, the generalized Choi witnesses are no longer optimal. Thereafter, I will talk about an optimization procedure for finding spanning vectors that eventually give rise to optimal witnesses. Operators from the second class turn out to be optimal, however, without the spanning property. I will also discuss the concept of mirrored entanglement witnesses. Our analysis sheds a new light into the intricate structure of optimal entanglement witnesses.

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HOST FACULTY

Prof. Archan S Majumdar
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