DEPARTMENTAL SEMINAR
Astrophysics and Cosmology

24th May, 2022   **12.00 pm**   **FERMION / ONLINE**

SPEAKER
Dr. Asmita Kumari
Post Doctoral Fellow, Harish Ch. Research Institute, Allahabad

TITLE OF THE TALK

LUDERS BOUNDS OF LEGGETT-GARG INEQUALITIES, QUANTUM CHANNEL, PT SYMMETRIC EVOLUTION AND ARROW-OF-TIME

ABSTRACT
We have studied the quantum violations of Leggett-Garg inequalities (LGIs) while system evolves under qubit channel and PT symmetric Hamiltonian. In particular, we considered two formulations of LGIs, viz., the standard LGIs and variant of LGIs for our study. We first show for both the evolutions the quantum violations of the above two forms of inequalities beat the respective Luders bounds (unitary case) and even approach algebraic maximum of the inequalities. It is well-known that violation of a LGI requires the no-signalling in time condition in quantum theory but arrow-of-time condition is satisfied. However, we demonstrate a hitherto unexplored feature that, for the case of variant of LGI and PT symmetric evolution, the quantum violation can even be obtained when only the arrow-of-time is violated but no-signaling in time condition is satisfied

HOST FACULTY
Prof. Archan S Majumder
Senior Professor & Head of the Department, Astrophysics & Cosmology
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