

# Open Talk

26<sup>th</sup> April, 2019

3:00 PM

Fermion

SPEAKER

**Dr. Amit Mukherjee**

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TITLE OF THE TALK

**Genuinely Nonlocal Product Bases: Classification and Entanglement Assisted Discrimination**

ABSTRACT

An orthogonal product basis of a multipartite Hilbert space is genuinely nonlocal if the basis states are locally indistinguishable across every bipartitions. From an operational point of view such a basis corresponds to a separable measurement that cannot be implemented by local operations and classical communication (LOCC) unless all the parties come together in a single location. In this talk we classify genuinely nonlocal bases into different categories. The classification is based on state elimination property of the set via orthogonality-preserving measurements when all the parties are spatially separated or different subsets of the parties come together. We then study local state discrimination protocols for several such bases with additional entangled resources shared among the parties. Apart from consuming less entanglement than teleportation based scheme our protocols indicate operational significance of the proposed classification.

HOST FACULTY

**Dr. Manik Banik**

DST INSPIRE Faculty

Department of Astrophysics & Cosmology

**S. N. Bose National Centre for Basic Sciences**