

Open Talk

22nd November, 2018

3:00 PM

Boson Hall

SPEAKER

Mr. Sagnik Chakraborty

Senior Research Fellow,

Theoretical Physics Department,

The Institute of Mathematical Sciences (IMSc.), Chennai

TITLE OF THE TALK

Universal detection of entanglement in two-qubit states using only two copies

ABSTRACT

We revisit the problem of detection of entanglement of an unknown two-qubit state using minimal resources. Using weak values and just two copies of an arbitrary two-qubit state, we present a protocol where a post selection measurement in the computational basis provides enough information to identify if the state is entangled or not. Our protocol enables complete state tomography with a single-setting post selection measurement on two copies of the state. It follows that by restricting to pure states, the global interaction required for determining the weak values can be realised by local operations. We further show that our protocol is robust against errors arising from inappropriate global interactions applied during weak value determination.

Ref: arXiv:1808.08246

HOST FACULTY

Professor Archan S Majumdar

Senior Professor

Department of Astrophysics & Cosmology

S. N. Bose National Centre for Basic Sciences