

Title: Spatial bin qutrits: a potential candidate for higher dimensional quantum_computing

Abstract:

The Quantum Information and Computing lab at the Raman Research Institute in Bangalore, India has been performing cutting edge research in experimental quantum information processing towards quantum computation, quantum communication as well as fundamental tests of quantum mechanics using single and entangled photons; having pioneered the technology of single and entangled photons in India.

In this talk, I will give a brief overview of a new architecture that we have been working on towards Linear Optics based Quantum Information using diffraction interferometry. Having certain clear-cut advantages like robustness, miniaturizability and scalability; this architecture holds a lot of promise towards enabling a novel quantum computing platform in future.

I will also give a general overview of some of our other ongoing experiments and end with our broad vision for the future with our mega project on Quantum Experiments using Satellite Technology (QuEST) in collaboration with the Indian Space Research Organization, which is India's first project on satellite based quantum communication.