



SEMINAR ANNOUNCEMENT

“Exploring Quantum Optical Processes”

Dr. Sintayehu Tesfa Woldemariam

Assistant Professor, Jazan University, Jazan, Saudi Arabia

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In this talk, I intend to incite conversation on the ramification of non-classical properties of light in implementing certain peculiar quantum optical processes. Particularly, I plan to start with issues pertaining to things that we can readily do in classical physics, but cannot repeat in quantum realm such as quantum no-cloning; and then, extend the discussion to things that we cannot do in classical physics, but can be readily done in quantum physics such as entanglement swapping, quantum teleportation and quantum dense coding; and in the process, try to examine the implication on application. By and large, I shall attempt to direct the discussion to the emerging field of continuous variable quantum information processing that predominantly relies on the polarization photon states, or coherent light that can be generated, for instance, from NOPA. Specifically, I intend to begin with a well established observations in quantum information (discrete system); and later, extend to systems with infinite dimensional Hamiltonian. This kind of interest emanates mainly from the fact that continuous variable optical processes can be realized using linear optical elements, amplifiers and homodyne detection; which envisages constructing structures that can carry out information processing tasks by using linear optical elements.