

### Area Seminar

Title                    Spatial distribution of Spontaneous Parametric Down-Converted Photons

Date and  
Time                10/01/2013 16:00:00

Speaker              Shashi Prabhakar

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Area                   Theoretical Physics

Venue                Room No. 469

Abstract              Spontaneous parametric down-conversion (SPDC) is a nonlinear optical process in which photons from a laser beam can split into two lower frequency photons. This photon pair is generated simultaneously and lies on the periphery of a circle, satisfying conservation of energy and momentum. These photon pairs are often used in quantum information experiments and applications like quantum cryptography and Bell's inequality test experiments. In this talk, I will discuss spatial distribution of the parametric down-converted photons for a Gaussian and an optical vortex as pump beams. I have observed that the spatial distribution widens linearly with increasing the size of Gaussian pump beam. The spatial distribution of intensity for a vortex shows up in its down-conversion as well and varies with the order of vortex.