Area Seminar

Title	Spontaneous parametric down-conversion process with BBO crystal
Date and Time	17/05/2012 11:30:00
Speaker	Shashi Prabhakar Physical Research Laboratory, Ahmedabad
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, with a rather very low probability, can split into two lower frequency photons. In other words, when the input laser photons interact with a non-linear crystal (BBO), one photon of the input laser is down-converted to two lower energy photons. This photon pair is generated simultaneously and lies on the periphery of a circle, satisfying conservation of energy and momentum. If the generated photon pairs have the same polarization, it is called Type-I SPDC and if they have orthogonal polarizations, it is called Type-II SPDC. 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 about the experimental realization of SPDC and spatial distribution of the generated photon pair. I will also discuss about the experiment that we have performed and their results.