24th Monthly Colloquium- Abstract

Prof. Dr. Mohammad Kazaem Tavassoly
Department of physics, Yazd University, Yazd, Iran.

Some simple proposals for the generation/enhancement of non-classical states based on quantum nonlinear optical processes

Generation of non-classical states of quantized field is a necessary requirement for all quantum science and technology protocols, while the (mathematical) construction of such states are straightforward. In this seminar we aim to pay attention to the generation of a few well-known quantum field states via some appropriate nonlinear quantum optical processes, i.e., with the help of the connection between quantum optics and nonlinear optics. In this line we will produce a few classes of Schr¨odinger cat states using a simple scheme. In addition, we will show that, with the help of some nonlinear quantum optical phenomena, like degenerate/nondegenerate parametric amplifier one can achieve some non-classical properties or enhance some non-classicality signs, depending on the entrance field to the nonlinear optical scheme. The results can be beneficial for various quantum science and technology protocols.

June 25, 2025 (SH: 04-04-1404)

16:00 IRST (Iran Standard Time)

https://vc.sharif.edu/ch/opsi

Scan to join the session