DIPARTIMENTO DI MATEMATICA E FISICA "NICCOLÒ TARTAGLIA"

About photon correlations

Introduce:
Dott. Francesco Banfi
Università Cattolica del Sacro Cuore

Interviene:
Prof. VITTORIO DEGIORGIO
Professor Emeritus, Universita' di Pavia

Abstract

Some general properties of photon correlations are discussed in a simple way through the analysis of the two-detector measurement scheme. It is shown that the assumption of the discreteness of the random process leads directly to the conclusion that the zero-delay value of the correlation function is only bound to be non-negative. The adopted approach allows discussing in more intuitive way the photon correlation properties of different optical fields, including the laser field, the fields emitted by chaotic sources, and also the non-classical fields presenting an apparent violation of the Cauchy-Schwarz inequality. The comparison between the two- and the single-detector experiment clarifies the role of the operator ordering in the definition of the correlation function. [1]

1. V. Degiorgio, Am. J. Phys 81, 772 (2013)

Seminario

Venerdì 4 marzo 2016
Sala Riunioni, ore 12.00
Via dei Musei 41 – Brescia

UNIVERSITÀ CATTOLICA del Sacro Cuore