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Accession number:12768922

Title:Generation of correlated photon pairs in different frequency ranges

Authors:Oster, F. (1); Keitel, C.H. (1); Macovei, M. (1)

Author affiliation:(1) Div. of Theor. Quantum Dynamics & Quantum Electrodynamics, Max-Planck-Inst. fur Kernphys., Heidelberg, Germany

Source title:Physical Review A (Atomic, Molecular, and Optical Physics)

Abbreviated source title:Phys. Rev. A, At. Mol. Opt. Phys. (USA)

Volume:85

Issue:6

Publication date:June 2012

Pages:063814 (5 pp.)

Language:English

ISSN:1050-2947

CODEN:PLRAAN

Document type:Journal article (JA)

Publisher:American Physical Society

Country of publication:USA

Material Identity Number:ER97-2012-006

Abstract:The feasibility of generating correlated photon pairs at variable frequencies is investigated. For this purpose we consider the interaction of an off-resonant laser field with a two-level system possessing broken inversion symmetry. We show that the system generates nonclassical photon pairs exhibiting strong intensity-intensity correlations. The intensity of the applied laser tunes the degree of correlation while the detuning controls the frequency of one of the photons, which can be in the terahertz domain. Furthermore, we observe the violation of a Cauchy-Schwarz inequality characterizing these photons.

Number of references:40

Inspec controlled terms:laser beams - optical correlation - quantum entanglement - quantum optics

Uncontrolled terms:correlated photon pair generation - off resonant laser field - two level system - broken inversion symmetry - nonclassical photon pairs - detuning control - Cauchy-Schwarz inequality violation

Inspec classification codes:A4250 Quantum optics - A0365B Foundations, theory of quantum measurement, miscellaneous quantum theories - A0367 Quantum information

Treatment:Theoretical or Mathematical (THR)

Discipline:Physics (A)

DOI:10.1103/PhysRevA.85.063814

Database:Inspec

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