

Abstract Submitted
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Sensing of an electromagnetic field with photon-assisted Fano resonance in 1D quantum dots¹ SERHII SHAFRANIUK, Northwestern University — Photon-assisted Fano resonance in 1D quantum dots for sensing of an electromagnetic field (EF) is suggested. The EF is sensed with a Δ -shape carbon nanotube junction. Such a Δ -sensor involves two carbon nanotube sections C_l and C_r misaligned by a finite angle and attached to three normal metal leads N_r ($r = 1, 2, 3$). The Fano resonance originates from a photon-assisted indirect coupling between the quantized states in C_l and C_r via continuous states in N_r . The resonance results in series of singularities observed in the linear conductivity of the Δ -sensor. The position and magnitude of the singularities is uniquely determined by the frequency, amplitude and polarization of the EF.

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