Multiplicative stochastic noise in quantum optics

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Abstract

We study stochastic processes in three different physical systems. First, we demonstrate how the correlated noise can enhance the sensitivity of the magnetometry based on electromagnetically induced transparency [1,2]. Second, we demonstrate a photon blockade effect in single macromolecule fluorescence resonance energy transfer [3,4]. Third, we numerically solve stochastic Mathieu equations in relation to the recently proposed QASER (quantum amplification by superradiant emission of radiation) [5].


