

Abstract Submitted
for the DAMOP19 Meeting of
The American Physical Society

Subradiance in a gas of two-level atoms HANZHEN MA, SUSANNE YELIN, University of Connecticut — As counterpart of superradiance, subradiance is a cooperative phenomenon in spontaneous emission that exhibits a decreased emission rate. Starting from the master equation of a homogeneous gas of two-level system and its closed form where retardation effects of propagation of EM field is neglected, we develop a procedure to obtain numerical results of subradiance in such system. We studied the properties of subradiance in different optical depth. Average upper-level population, collective induced decay rate and the coherence terms in two-atom density matrix are also calculated as a function of time.

Hanzhen Ma
University of Connecticut

Date submitted: 01 Feb 2019

Electronic form version 1.4