

Singular behavior of the photon density of states and the self-energy function of an electron in photonic crystal

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Abstract

© Published under licence by IOP Publishing Ltd. We show that Van Hove singularities in the behavior of the photon density of states in a photonic crystal results in a singular behavior of the self-energy functions of atomic states that describe the interaction of the atom with vacuum. This is shown to have a significant effect on processes of quantum interference from atoms in the PC medium.

<http://dx.doi.org/10.1088/1742-6596/560/1/012007>
