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Propagation of light in a Dense Medium. SAMINA MASOOD, University of Houston Clear Lake, IRAM SALEEM, University of Houston — Propagation of light is studied in a very dense system. Renormalization scheme of QED is used to understand the propagation of light in a hot and dense medium. We consider a medium of a very large chemical potential with relatively small temperature. The generalized results of vacuum polarization of photon in a hot and dense medium is used to study the behavior of light in such a system. Our hypothetical system corresponds to a heat bath of electrons at an equilibrium temperature and the density of electrons is larger as compared to the temperature of the medium. Such type of systems have previously been identified as classical systems because the chemical potential is large enough to dominate temperature.

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