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Photon Transport Through Dense Atomic Vapor NABRAJ BHATTARAI, UT at San Antonio, ANDRZEJ SIERADZAN, Central Michigan University — An understanding of photon transport through scattering media is of great importance to many areas of physics and astronomy. We present a detailed study of infrared light propagation in hot cesium vapors. An experimental investigation of beam transmission as a function of vapor density shows that while a monochromatic light spreads in manner characteristic for a normal diffusion, transport of nonmonochromatic atomic fluorescence shows properties of Levy flights. A simple model gives a good quantitative account of most of our experimental results. However, yet unexplained presence of fluorescence components practically immune to scattering must be dealt with before a fully consistent picture of the scattering process can be claimed.

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