LÉVY PHOTON STATISTICS IN BLINKING QUANTUM DOTS

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We discuss the theory of blinking quantum dots.[a] These systems exhibit non–ergodic, and non-stationary kinetics. The mean on and off mean off time diverge. We show that Mandel's Q parameter, describing the fluctuations in this system, exhibits a new type of behavior, it increases with measurement time, even in the long time limit. In this case photon counts are described using *Lévy statistics*. Possible explanations of the power law kinetics are discussed.

[a] Y. Jung, E. Barkai, and R. Silbey, *Lineshape Theory and Photon Counting Statistics for Blinking Quantum Dots: a Lévy Walk Process* **Chemical Physics** *284* 181 (2002).