

Abstract Submitted
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Poisson or not Poisson: Probability distribution of colloidal nanoparticles in an optical trap YI HU, XUANHONG CHENG, H. DANIEL OU-YANG — In a colloidal suspension of nanoparticles, the presence of an optical trap can exponentially enhance the probability of finding the particles in the vicinity of the trap. Intriguing questions arise regarding whether the probably distribution of particle number in the trap follows Poisson approximation, and if so, what is the upper limit of the trapping energy at which Poisson is followed. To answer these questions, we conduct experiments to determine directly the variance and the mean particle number in the trap at different trapping energies and compare with the predictions of the probability theory.

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