## Abstract Submitted for the MAR07 Meeting of The American Physical Society

Translation-rotation coupling in dense colloidal suspensions MINSU KIM, Dept. of Physics, University of Illinois at Urbana and Champaign, STEPHEN ANTHONY, Dept. of Chemistry, University of Illinois at Urbana and Champaign, STEVE GRANICK, Dept. of Material Science and Engineering, University of Illinois at Urbana and Champaign — Single-particle tracking has been used to contrast translational and rotational diffusion in colloidal suspensions. Not enough is known from prior study about the rotation of colloids, owing perhaps to the paucity of suitable measurements techniques, but this is now remedied by using Modulated Optical Nanoparticles(MOONs), which are fabricated by capping one hemisphere with a thin layer of reflective metal. Density of the suspensions is varied and both translational and rotational mean squared displacement are quantified.

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Date submitted: 22 Nov 2006 Electronic form version 1.4