Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Characterization of hyperuniformity in colloidal suspensions through small angle static light scattering. COLINE BRETZ, Compass (Solvay-CNRS-University of Pennsylvania), TIM STILL, University of Pennsylvania, DENIS BARTOLO, ENS Lyon, JEAN BAUDRY, ESPCI-CNRS, ARJUN YODH, University of Pennsylvania, REMI DREYFUS, Compass (Solvay-CNRS-University of Pennsylvania) — Hyperuniform materials have attracted increasing interest over the past decade due to their potential exciting photonic properties. Our work aims at exploring novel ways of assembling hyperuniform materials from colloidal suspensions. Three-dimensional systems of micrometer-sized colloids are considered and characterized by studying their structure factor using static small angle light scattering (SLS). A SLS set-up has been constructed for this purpose. Using an index-matched suspension of colloidal particles, we are able to record the structure factors of suspensions of micrometer-sized colloids in a three-dimensional cell. We will show how our apparatus allows us to follow the spatial organization of the colloids and characterize their hyperuniformity.

Coline Bretz
University of Pennsylvania

Date submitted: 05 Nov 2015 Electronic form version 1.4