

Abstract Submitted
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Extremely Small and Incredibly Fast Microscopy: 1 nm and 10 μ s dynamics in concentrated colloidal suspensions BRIAN LEAHY, MATTHEW BIERBAUM, Cornell Univ, ALEXANDER ALEMI, Disney Research, ITAI COHEN, JAMES SETHNA, Cornell Univ — Recently we developed PERI, a technique for locating colloidal sphere's positions and radii to within 1 nm from ordinary light microscopy images. PERI provides unprecedented access to the physics of colloidal suspensions at small length scales. We use this for high precision measurements of the pair-correlation function $g(r)$ and colloidal interactions at 1-nm distances. Finally, we couple PERI with high-speed brightfield light microscopy to examine fast dynamics of concentrated suspensions.

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