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Holographic Characterization of Imperfect Spheres MARK HANNEL, CHRISTINE MIDDLETON, DAVID GRIER, New York University — Holographic snapshots of colloidal spheres can be fit to Lorenz-Mie theory, yielding the radius, refractive index and position of individual colloids in situ. This procedure assumes that the scatterer is a uniformly dense ideal sphere. Via experimentation and simulation, we demonstrate that small deviations from ideal sphericity produce palatable errors (approximately 1%) in our estimation of the particle's physical properties.

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