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Schlieren imaging of the standing wave field in an ultrasonic acoustic levitator¹ PABLO LUIS RENDON, RICARDO R. BOULLOSA, Centro de Ciencias Aplicadas y Desarrollo Tecnológico, Universidad Nacional Autónoma de México, CARLOS ECHEVERRÍA, DAVID PORTA, Facultad de Ciencias, Universidad Nacional Autónoma de México — We consider a model of a single axis acoustic levitator consisting of two cylinders immersed in air and directed along the same axis. The first cylinder has a flat termination and functions as a sound emitter, and the second cylinder, which is simply a reflector, has the side facing the first cylinder cut out by a spherical surface. By making the first cylinder vibrate at ultrasonic frequencies a standing wave is produced in the air between the cylinders which makes it possible, by means of the acoustic radiation pressure, to levitate one or several small objects of different shapes, such as spheres or disks. We use schlieren imaging to observe the acoustic field resulting from the levitation of one or several objects, and compare these results to previous numerical approximations of the field obtained using a finite element method.

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