Department of Physics, Astronomy, and Materials Science
Colloquium, Fall 2009

Magnetic Levitation: from Floating Large Water Droplets to Flying Mice

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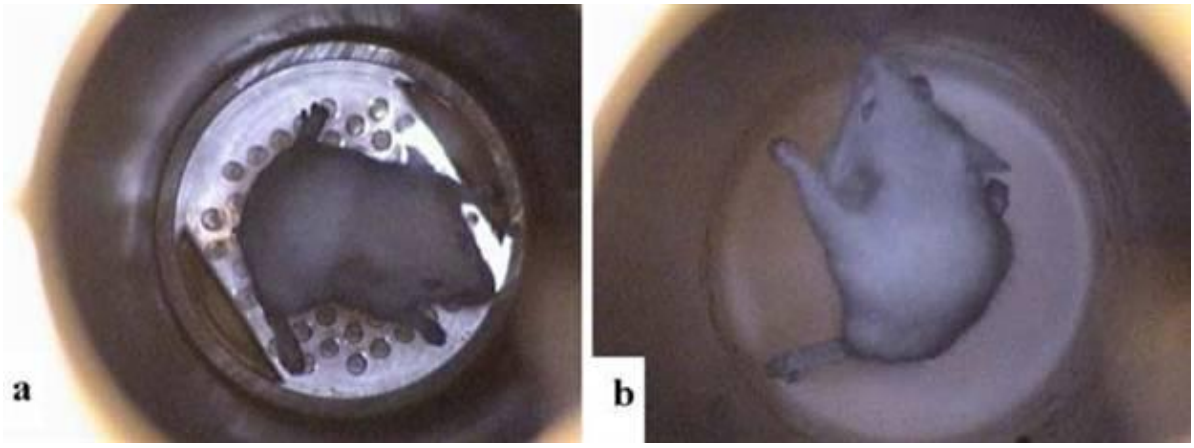
Kemper Hall Room 100

The phenomena of levitation, *i.e.* objects floating in a ground-based laboratory without material support or suspension, has attracted wide attention due to its peculiarity and potential applications. In this talk, I will present recent results on successful levitation of large water droplets and mice using a newly built variable gravity simulator at the Jet Propulsion Laboratory, NASA. The simulator consists mainly of a superconducting magnet with a room temperature accessible experimental levitating space. The superconducting magnetic generates a field and field gradient that are large enough to levitate small mammals. We demonstrate that water drops up to 55 mm in diameter and young mice can be levitated in the system. Two movie clips about levitating these objects will be shown in my talk. The capability of levitating large water drops and biological systems offers new opportunities for conducting detailed and in-depth study of properties of fluids and biological systems in reduced gravity environments.



A three-week-old mouse weighing about 10 grams levitated by magnetic fields, either with a magnet (a) or without (b).

http://www.msnbc.msn.com/id/32760311/ns/technology_and_science-science/

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