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Freezing drop shapes with hydrophobic powders

When a liquid drop impacts onto a powder bed that is comprised of fine hydrophobic grains, the outcome can be vastly different from the dynamics observed with a wettable powder. The drop can become completely encapsulated with the powder, thus forming a "liquid marble" which has some unique, fascinating properties. The drop oscillations after rebound can also be completely suppressed, thus freezing the shape which can become highly non-spherical. We will discuss the key mechanisms at play here and potential applications.

In the second part of this talk, we will also look briefly at some new experimental work on laser-induced cavitation in liquid drops and liquid marbles.