Abstract Submitted
for the DFD12 Meeting of
The American Physical Society

Bouncing, splashing and disintegrating nanodrops JOEL KOPLIK, RUI ZHANG, City College of CUNY — The impact of nanometer-sized drops on solid surfaces is studied by molecular dynamics simulations. The surfaces are atomically smooth, dry and non-wetting, and both volatile and non-volatile liquids are considered. At low impact velocities drops distort on contact but bounce off the surface and relax back to a spherical shape. At higher velocities drops form a prompt splash on impact and subsequently disintegrate, while at still higher velocities drops disintegrate immediately on impact. In contrast to macroscopic drops, the presence or absence of vapor plays no role at all in nanodrop splashing.

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Date submitted: 07 Aug 2012 Electronic form version 1.4