Abstract Submitted
for the DAMOP08 Meeting of
The American Physical Society

Slowing Supersonic Beams via Elastic Reflection from Moving Crystals: An Atomic Paddle ADAM LIBSON, ED NAREVICIUS, CHRISTOPH SCHAEFF, ISAAC CHAVEZ, MAX RIEDEL, CHRISTIAN PARTHEY, University of Texas at Austin, UZI EVEN, Tel Aviv University, MARK RAIZEN, University of Texas at Austin — We report the slowing of a supersonic beam of helium using specular reflection from a receding crystal. We use an Even-Lavie pulsed supersonic nozzle to generate a 511 m/s beam of helium at 250 mK. The beam is reflected from a Si(111)-H(1x1) crystal prepared *ex-situ* via wet etching and mounted on the tip of a spinning rotor. By controlling the rotor velocity we can continuously tune the velocity of the slowed beam. We have slowed the beam to as low as 246 m/s without affecting its temperature. Applications to slowing of molecular hydrogen and deuterium will be discussed.

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Date submitted: 20 Feb 2008 Electronic form version 1.4