Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Helium atom diffraction from a monolayer solid with a beam that penetrates to the substrate LUDWIG BRUCH, Physics Dept; University of Wisconsin-Madison, FLEMMING HANSEN, Chemistry Dept., Technical University of Denmark — Diffraction of a thermal energy helium atomic beam is evaluated in the situation that the target monolayer lattice is so dilated that the atomic beam penetrates to the region between the monolayer and the substrate. Parameters are chosen to be representative of a hypothetical $p(1 \times 1)$ commensurate monolayer solid of H_2/KCl(001). Depending on the spacing between the monolayer and the substrate and on the angle of incidence, there are cases where part of the incident beam is trapped in the interlayer region for times exceeding 50 ps. The methodology is a direct extension of the wave-packet propagation used for the scattering of helium from the quantum monolayer solid H_2/NaCl(001).[1]

[1]L. W. Bruch, F. Y. Hansen and F. Traeger, J. Chem. Phys. **134**, 194308 (2011)

Ludwig Bruch
Retired

Date submitted: 09 Nov 2011 Electronic form version 1.4