Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Optical Studies of the Morphologies of Metal Surfaces during Ion-erosion and Thermal Annealing PETROS THOMAS, Dept. of Physics at UC Davis, XIANGDONG ZHU, Dept. of Physics at UC Davis — Ar- and Ne-ion sputtering and thermal annealing of Nb(110) and Cu(111) are studied at different temperatures using the oblique-incidence reflectivity technique (OI-RD). It is found that a step-flow or 2-D removal sets in at about 1073 K for Nb and at 700 K for Cu. In the case of the Cu(111) surface, the ratio of the 3-D/2-D-removal transition temperature to the melting temperature agrees with previously predicted values for fcc(111) metal surfaces. Moreover, using a moderately stepped Ni(111), it is demonstrated for the first time that the OI-RD technique can be used to monitor directly the average slope of a surface morphology during ion erosion.

Petros Thomas
Dept. of Physics at UC Davis

Date submitted: 01 Dec 2004 Electronic form version 1.4