

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Modification of Surface States in Ultrathin Films via Hybridization with the Substrate – a Study of Ag on Ge SHU-JUNG TANG, TOM MILLER, TAI-CHANG CHIANG, University of Illinois at Urbana-Champaign — The Shockley surface state of Ag(111) develops unusual band dispersion relations for Ag films of decreasing thicknesses on Ge(111), as observed by angle-resolved photoemission. Its parabolic dispersion in the thick-film limit shifts toward higher binding energies and splits into multiple bands with dispersions that reflect the valence band structure of Ge including the heavy-hole, light-hole, and split-off bands. The results are explained in terms of a hybridization interaction between the Ag surface state and the Ge substrate states.

Shu-Jung Tang
University of Illinois at Urbana-Champaign

Date submitted: 21 Nov 2005

Electronic form version 1.4