Confined states in metallic thin films analyzed with a one-dimensional-pseudo-potential approach DAH-AN LUH, National Central University, CHENG-MAW CHENG, KU-DING TSUEI, National Synchrotron Radiation Research Center, JIAN-MING TANG, University of New Hampshire — An approach based on a one-dimensional pseudo-potential (1DPP) is proposed to analyze the confined states in metallic thin films. The potential of a thin-film system near the Fermi level is approximated with a pseudo-potential that is constructed with periodic potentials in the substrate and the film and with an image potential in the vacuum. The confined states are obtained by solving the Schrödinger equation. The result from applying the 1DPP approach to analyze the bound states in Ag/Au(111) thin films will be presented.

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Date submitted: 20 Nov 2008

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