Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

An investigation of quantum well states and magnetic properties of Co/Au/Ru(0001) J. CHOI, J. WU, Dept. of Physics, Univ. of California, Berkeley, CA 94720, F. EL GABALY, A.K. SCHMID, NCEM, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, Z.Q. QIU, Dept. of Physics, Univ. of California, Berkeley, CA 94720 — Quantum well state of Au/Ru(0001) and its effect on the magnetic properties of Co/Au/Ru(0001) was investigated using Spin Polarized Low Energy Electron Microscopy (SPLEEM). Epitaxially grown Au on Ru(0001) at room temperature was annealed to $\sim$300 $^\circ$ C. Upon annealing, Au forms islands with atomically flat tops across stepped regions of Ru, forming local wedges of different Au thickness. Energy scans reveal clearly the existence of quantum well states in Au/Ru(0001). After depositing Co film on top of the Au, we found that the Curie temperature and the spin reorientation transition of Co film on the flat-top Au islands are different from on the Au wetting layer. However the quantum well states of the Au layer have no effect on the Curie temperature and the spin reorientation transition of Co film.

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Date submitted: 20 Nov 2007 Electronic form version 1.4