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Spin-dependent Fabry-Pérot interferometer of a Cu thin film grown on fcc Co(001) Y.Z. WU, Phys. Depart., U.C. Berkeley, A.K. SCHMID, NCEM, LBNL, M.S. ALTMAN, Phys. Depart., HKUST, Hongkong SAR, P.R. China, X.F. JIN, Fudan University, P.R. China, Z.Q. QIU, Phys. Depart., U.C. Berkeley — Spin-dependent electron reflection from a Cu thin film grown on Co/Cu(001) was studied using Spin Polarized Low Energy Electron Microscopy (SPLEEM). We find that the electron reflectivity from the Cu thin film exhibits a Fabry-Pérot type interference. As the Cu thickness increases, the energies of the interference peaks decrease (or increase) for k-vector greater (or less) than half of the Brillouin zone (BZ) vector. This interference effect can be well explained using the phase accumulation model. Moreover, we observed spin-dependent reflectivity from the Cu thin film. SPLEEM images of the Cu film reveal the magnetic domain structure of the underlying Co film, with the domain contrast oscillating with the electron energy and the Cu film thickness. This observation is attributed to the spin-dependent reflectivity at the Cu/Co interface.

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