Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Proximity effect in superconductor/ferromagnet hetero-structures as a function of interface properties[1] JULIO SARMIENTO, EDGAR J. PATINO, Universidad de los Andes — Superconductor/ferromagnet heterostructures are currently a subject of strong research due to novel phenomena resulting from the proximity effect. Among the most investigated ones are the oscillations of the critical temperature as function of the ferromagnet thickness. The oscillatory behavior of Tc is theoretically explained as to be result of the generation of the FFLO (Fulde-Ferrel-Larkin-Ovchinnikov) state of Cooper pairs under the presence of the exchange field of the ferromagnet [1,2]. With the advancement of experimental techniques for S/F bilayers growth new questions regarding the effect of the interface transparency can to be addressed. For instance the influence of the interface roughness on the proximity effect [3]. For studying this phenomenon Nb/Co and Nb/Cu/Co samples were sputtered on SiO2 substrates with different roughness. Characterization of these samples show a significant variation of Tc with the interface roughness. This results point towards a possible relationship between transparency and roughness of the interface. References [1] J. S. Jiang, et al., Phys. Rev Lett. 74 (1995) 314. [2] C. Cirillo, et al . Phys. Rev. 72, 144511 (2005) [3] E. J. Patiño, Study of The Influence of Domain Walls in The S/F Proximity Effect. Cambridge (2005).

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Date submitted: 15 Nov 2013 Electronic form version 1.4