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Investigation of the role of Al/CoFe interface in proximity effect of Nb/Al/CoFe K. CHAR, JUNHYUNG KWON, WENJIAN LU, Seoul National University, MDPL TEAM — When a few nm-thick Al layer is inserted between Nb and ferromagnetic (F) layers such as CoFe, Ni, or CuNi, the superconducting critical temperature of the trilayers increase rapidly almost to a level of Nb/Al bilayers. In order to understand the role of Al/CoFe interface in the proximity effect of Nb/Al/CoFe, we have added Mg and Au scattering centers and found different behavior. The Mg scattering center did not change the critical temperature behavior of Nb/Al/CoFe, while the Au scattering centers reduced the critical temperature. The results point toward the importance of spin-orbit scattering. In addition, tunneling spectroscopy data on Nb/Al/F vs. on Nb/F will be presented in order to further characterize the role of Al/F interfaces.

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