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Proximity effect in superconductor exchange spring-superconductor junction JIYEONG GU, CHRISTOPHER SAFRANSKI, HANMING YUAN, California State University, Long Beach — It is known that in ferromagnet/superconductor hybrid system when the magnetizations of the ferromagnetic layer are inhomogeneous superconductivity is not necessarily suppressed by the ferromagnet due to the presence of the triplet superconducting pairing. In our current work we used exchange spring magnet to produce inhomogeneous noncollinear magnetic configuration in the ferromagnet. Exchange spring trilayer structure, soft/hard/soft, was fabricated between two superconducting Nb layers; Nb/Py/SmFe(SmCo)/Py/Nb. Magnetic property of the structure was characterized using Vibrating Sample Magnetometer and Magneto Optical Kerr Effect (MOKE). MOKE was used to measure the magnetizations of the top Py and the bottom Py separately. Transition temperature of the system was measured as a function of magnitude and direction of the external magnetic field.

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