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Anisotropic Superconductivity in MoGe - Permalloy Bilayers¹ GORAN KARAPETROV, Argonne National Lab, A. BELKIN, ANL and Illinois Institute of Technology, V. NOVOSAD, M. IAVARONE, J. FEDOR, Argonne National Lab, A. TRONCALLI, Austin College, J. PEARSON, W.K. KWOK, Argonne National Lab — We studied the magneto-transport properties of superconductorferromagnet MoGe/Permalloy bilayers. The ferromagnet with stripe domain structure induces in-plane anisotropy in superconducting order parameter. Superconducting phase diagram shows that near the S-N phase boundary the superconductivity is localized in narrow mesoscopic channels just above the magnetic domain walls. By changing the in-plane direction of magnetic stripe domains it is possible to reconfigure the direction of the superconducting channels and enable one to control the direction of the anisotropy axis in the superconductor.

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