

Abstract Submitted
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Superconductor-Ferromagnet Bilayers: Influence of Magnetic Domain Structure on Vortex Dynamics¹ ANDREY BELKIN, Argonne National Laboratory and Illinois Institute of Technology, V. NOVOSAD, M. IAVARONE, J. PEARSON, W.K. KWOK, G. KARAPETROV, Argonne National Laboratory — We investigate the influence of orientation of stripe-like domain structure in ferromagnetic films on vortex dynamics in superconductor-ferromagnet bilayers. We measure transport properties in different external magnetic fields applied perpendicular to the surface of the bilayers. Parameters of superconductor-ferromagnet bilayers are such that domain period is much bigger than the superconducting coherence length but much smaller than the effective penetration depth. Prominent dissimilarity of critical currents of two studied configurations as well as pronounced commensurability effects are found. Diverse behavior of superconductor-ferromagnet bilayers with mutually orthogonal orientations of stripe domains is demonstrated by dependence of critical temperature on external magnetic field.

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