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**Hysteretic magneto-transport of a High- $T_c$  superconducting/ferromagnetic multilayer with tunable magnetic domain structure**  
JAVIER E. VILLEGAS, CRISTINA VISANI, PETER J. METAXAS, AURELIE COLLAUDIN, BAPTISTE CALVET, ROZENN BERNARD, JAVIER BRIATICO, CYRILE DERANLOT, KARIM BOUZEHOANE, Unite Mixte de Physique CNRS/Thales, 1 avenue A. Fresnel, 91767 Palaiseau, and Universite Paris Sud 11, 91405 Orsay, France — The magneto-transport of a hybrid heterostructure combining a YBaCuO<sub>7- $\delta$</sub>  thin film and a Co/Pt superlattice shows an unusual hysteretic behavior. Depending on the angle between the external applied field and the film plane, and on the magnetic history, either a increase or a decrease of the mixed-state resistance is observed. The combination of magneto-transport, magnetic force microscopy and anomalous Hall effect measurements allows us to correlate these effects to the magnetic domain structures in the Co/Pt superlattice. We unequivocally prove that the hysteretic magneto-transport is induced by the stray magnetic fields from tunable magnetic domain structures, which may induce vortices or produce vortex pinning, leading to the increase/decrease of the mixed-state resistance. Work supported by French ANR “Superhybrids-II” and RTRA “Supraspin” grants.

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