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**Magnetic Induction Profile in Superconductor/Ferromagnet Bilayers** QIANG LI, ZUXIN YE, Brookhaven National Laboratory — Strong suppression of flux density peaks at the edge of a superconducting film was observed by magneto-optical imaging the magnetic induction profiles of an YBCO superconducting film on a magnetic substrate in perpendicular magnetic fields, The observed induction profile is in a striking contrast to the case of superconducting films on a non-magnetic substrate that display sharp flux density peaks at the edges of the films. The influence of magnetic substrate on the flux distribution in superconductor films may be modeled by considering the formation of a virtual infinite stack of superconducting films due to the magnetic mirror effect. We also found that the flux patterns in the magnetic substrate were strongly influenced by the flux distribution in the superconductor. These observations, results of computer simulations, and their implications to the transport and magnetization properties of superconducting films will be discussed.

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