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Magnetic stripe formation of in-plane c-axis aligned YBCO thin films CHONG WANG, Q. Y. CHEN, HYE-WON SEO, WEI-KAN CHU, Texas Center for Superconductivity at University of Houston, TOM JOHANSEN, Department of Physics, University of Oslo, Norway — The magnetic anisotropy of YBCO (110) thin films, with c-axis aligned in-plane, has been investigated by Magneto-Optical Imaging (MOI) method. The (110) YBCO thin films were fabricated by magnetron sputtering on $SrTiO_3$ substrates. The MOI measurement yields a stripe pattern of vortex-penetration deep into the film in the [110] direction. This pattern is superimposed on that predicted by the Bean model. The stripe is interpreted in the context of micro- or nano-irregularity on the sample edge. This stripe geometry is analyzed as the limiting case for a large assembly of parabolic contours typically found in an isotropic sample, such as c-axis oriented ones, in the presence of a region of non-superconducting irregularity.

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