

Abstract Submitted
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Primary Beam Steering Due To Field Leakage From Superconducting SHMS Magnets MICHAEL MOORE, Thomas Jefferson National Accelerator Facility, Old Dominion University, SILVIU COVRIG, ROGER CARLINI, BUDDHINI WAIDYAWANSA, JAY BENESCH, Thomas Jefferson National Accelerator Facility — The Super High Momentum Spectrometer (SHMS) was designed for the 12 GeV/c physics program in Hall C at Thomas Jefferson National Accelerator (JLab). At JLab an electron beam impinges on a fixed target and scattered particles are analyzed with magnetic spectrometers. The SHMS angular acceptance is $5.5^\circ \leq \theta \leq 40^\circ$. When positioned at $\theta = 5.5^\circ$ and full field strength the external fields from the magnets are large enough to steer the unscattered primary beam away from the beam dump window located 51.8 m from the target. The effects of these magnetic fields on the primary beam line downstream of the target are studied using Opera 3-D and TOSCA. A solution is presented that uses passive elements to shape these fields and assure that the primary beam is steered onto the beam dump window.

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