

CESR Transfer Line Optimization

Chad Morris

Physics, Ohio State University, Columbus, Ohio, 43210

Abstract

The purpose of this study is to improve upon the existing magnetic optics of the transfer lines between the synchrotron and storage ring of the Cornell Electron Storage Ring facility. I looked into the possibilities of adding an additional quadrupole to the line as well as repositioning the quadrupoles of the current line. I, also, looked into the feasibility of going to higher magnetic field strengths of the quadrupoles. It will be shown that by employing these options definite improvements can be achieved in reduction of needed aperture on the beamline due to less than optimal injection parameters.