

1. Consider an IP of a ring collider with a vertical β^* of 1mm.
 - a. Compute the L^* allowing a vertical beta of 1000m at the edge of the last quadrupole?
 - b. Considering the computed L^* , compute the vertical β^* for having the minimum vertical β at the edge of the quadrupole and the value of that minimum.
 - c. Is this consideration important for aperture reasons?
 - d. What would be the effect on luminosity?