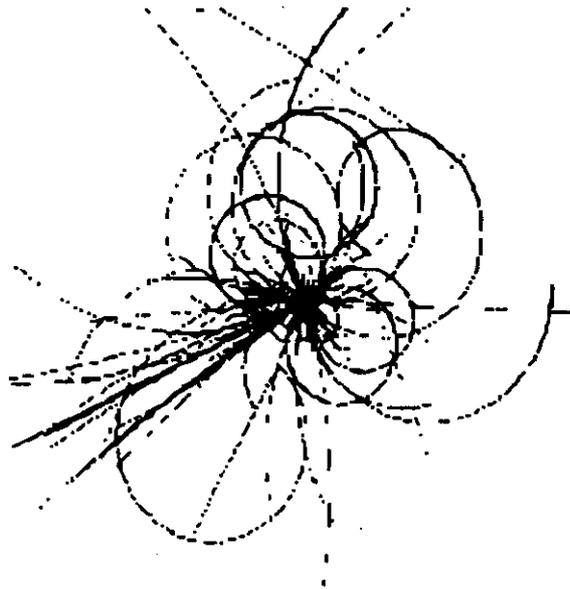


# THE SUPERCONDUCTING SUPER COLLIDER LABORATORY



SSC - N - 225

**NOTES**

## LINEAR APERTURE OF THE SSC CDR INJECTION LATTICE

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The linear aperture was measured for the SSC CDR injection lattice, with sorted multipole errors in the dipoles, and multipole errors in the IR quadrupoles, utility quadrupoles, and vertical bends. The sorting scheme is described in Ref (1). Five different machines were produced, with 5 random seeds, and were tracked for 400 turns, using the program TEAPOT (2). The resulting apertures are shown in Table 1. All apertures are in mm at  $\hat{\beta}$  in the arcs. The linear aperture decreases by approximately 25% at  $\delta = \pm 0.001$ . The dynamic aperture at  $\delta = 0.0$  is  $11.5 \pm 1.0mm$ .

$\delta$	linear aperture
-0.001	$6.2 \pm 1.4mm$
0.0	$8.2 \pm 1.7mm$
0.001	$6.4 \pm 1.6mm$

Table 1. Linear aperture at injection

## REFERENCES

1. L. Schachinger, "Dynamic and Linear Apertures of the SSC Clustered IR Test Lattice with Dipole Sorting," SSC-N-123, January 1986.
2. L. Schachinger and R. Talman, "TEAPOT. A Thin Element Accelerator Program for Optics and Tracking," SSC-52, December 1985.