

Effects and Correction of Sexupoles in the Dipoles

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Effects and Correction of Sextupoles
in the
Dipoles

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b_2 in dipoles Correction.

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	Magnetization b_2	Saturation b_2
$b_2 / 10^{-4}$	1.6 (10)	3.2 (20), () are b_2 units
Chromaticity Generated	48, -48	96, -96
$\Delta b_{2,H} / b_{2,H}$	- .5	-1
$\Delta b_{2,V} / b_{2,V}$.6	1.2

Natural Chromaticity, -74, -65

b_2 for Natural Chromaticity, $30, -60 \times 10^{-4}$ (200, -400)
 $l = 1 \text{ m}$

b_2 Correction Coil Capacity, 196×10^{-4} (1200)

Effects of b_2 in dipoles are appreciable,
but may be correctable using lumped
Correction Coil b_2 .

Stability

Systematic Stop band at $\gamma = 34 = \frac{102}{3}$

$\Delta\gamma = 0.3$ due to natural Chromaticity Correction

operating $\gamma = 34.4$ is close to this stop band.

Proposed Tracking Study

b_1 present, b_2 in dipoles plus
 b_2 in Correction magnet

Study

1) stability limits

2) γ dependence on betatron amplitude, $\gamma(A)$

3) γ dependence on $\Delta p/p$, $\gamma(p)$

4) ~~betatron~~ γ -values, 34.6 and 34.9

$$\gamma_x = \frac{1}{4\pi} \cdot \frac{NL}{BP} (2) \beta_x \chi_p \frac{sp}{p} B_s$$

$$= \frac{1}{4\pi} \frac{(144)(10.7)}{8400} 2(26.4)(1.27)(.01)$$