

## Effects and Correction of Sexupoles in the Dipoles

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August 1984

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**U.S. Department of Energy**

USDOE Office of Science (SC)

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in the  
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BNL, August 16, 1984

# $b_2$ in dipoles Correction

(1)

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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
$\Delta b_{2,H} / b_{2,H}$	-0.5	-1
$\Delta b_{2,V} / b_{2,V}$	0.6	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,  $196 \times 10^{-4}$  (1200)

Effects of  $b_2$  in dipoles are appreciable, but may be correctable using lumped correction coil  $b_2$ .

# Stability

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

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

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

## Proposed Tracking Study

$b_n$  present,  $b_2$  in dipoles plus  $b_2$  in correction magnet

### Study

- 1) stability limits
- 2)  $\nu$  dependence on betatron amplitude,  $\nu(A)$
- 3)  $\nu$  dependence on  $\Delta p/p$ ,  $\nu(p)$
- 4)   $\nu$ -values, 34.6 and 34.9

$$\gamma_x = \frac{1}{4\pi} \cdot \frac{NL}{BP} (2) \beta_x \chi_p \frac{\sigma_p}{p} B_0$$

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