E. Raka NO. 66 M. Month Blumberg

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The linear coupling present in the AGS at was measured at 2, 14, 24 and 28.5 Bev/c. Compensation of zero theta component of the skew quadrupole field that produces the coupling was achieved by powering the correction quadrupoles located at A-15, D-15, G-15, J-15 for the high momentum values. For the 2 Bev/c point the 24 low field skew quad was used. The required currents for the high field corrections did not quite track the momentum change i.e. @ 370 mev ($\beta\gamma \approx 15$) $I_Q \approx 24$ amps @ 600 ($\beta\gamma = 27.8$) $I_Q \approx$ 52 amps and @ 640 mev ($\beta\gamma = 30$) $I_Q = 58 \pm 3$ amps. The additional current required could be due to saturation effects but one can conclude that essentially all of the observed coupling is due to ~~correct~~ random rotation of the main ring magnets. Previous measurements on the SEB flat top @ $\beta\gamma \approx 30$ gave an $I_Q \cong 75$ amps. The difference here could be due to the additional backleg bumps, turning quads etc. that are powered during SEB operation. The measurements were made by using the E-15 kicker and moving the beam radius until one observed that the beat signal of the (Q-V) f_0 component of the H & V difference signals had a zero amplitude null. This assured that the beam was then on the coupling line.