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Linear Coupling on Flattop. Beam-induced Signal on RF Gaps

E. Raka

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Collider Accelerator Department

Brookhaven National Laboratory

U.S. Department of Energy

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The first part of this period was used to continue measurements of the linear coupling present on the 28 Bev flat top by stimulating the normal mode frequencies. In particular the high field tunning quadrupoles (H & V) were set at old values (c.f. from 4/3/73) and measurements were made at the different normal mode frequencies. Additional measurements were made with the present operational quadrupole currents but at 1030 msec. The behavoir was somewhat different than that observed at 730 msec.

The second part of the period was devoted to observations of the beam induced signal present on the r & gaps during injection. This was done with early switch over to beam control ($\leq$ 200 μsec from injection) and late switch over at 2 msec. from injection. For the latter case one remained on the starting oscillator during this time with a slope of $\simeq$ 18 Kc/msec. The intensity was less than 10% lower than with early switch over. It appears that most if not all the modulation present on the gap signal is beam induced and that there is an intensity threshold in the neighborhood of $\simeq 2 \times 10^{12}$. The effect of the low level r & system is secondary in producing the observed signal.