



BNL-103915-2014-TECH

AGS.SN35;BNL-103915-2014-IR

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

E. Raka

September 1973

Collider Accelerator Department
Brookhaven National Laboratory

U.S. Department of Energy

USDOE Office of Science (SC)

Notice: This technical note has been authored by employees of Brookhaven Science Associates, LLC under Contract No.AT(30-1)-16 with the U.S. Department of Energy. The publisher by accepting the technical note for publication acknowledges that the United States Government retains a non-exclusive, paid-up, irrevocable, world-wide license to publish or reproduce the published form of this technical note, or allow others to do so, for United States Government purposes.

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or any third party's use or the results of such use of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

AGS Studies (1300-1600) 9/14/73 by E. RAKA

The first part of this period was used to portrual measurements of the linear coupling present on the 28 Bev flat top by stimulating the normal mode frequencies. In particular the high field tuning quadrupoles (H & V) were set at old values (i.e. from 9/13/73) 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 behavior 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 & g gaps during injection. This was done with early switch over to beam control ($\approx 20 \mu\text{sec}$ from injection) and late switch over at 2 msec. from injection. In the latter case one remained on the starting oscillator during this time with a slope of $\approx 18 \text{ Kc/msec}$. 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 $\approx 2 \times 10^{12}$. The effect of the low level r & g system is secondary in producing the observed signal.