

Vertical Tune with/without E10 and H10 ?/2

G. W. Bennett

April 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.

No. 4

H10 Magnet was not in Blumberg
Ring so could not try extraction.

FEB STUDIES REPORT

APRIL 10, 1977

1600 = 5:00

BENNETT, BLUMBERG, GILL, KEANE

On at 1830, CBM = $1.5 \cdot 10^{12}$ ppp (detuned).
FEB at 700 ns on 28.7 GeV/c flat top. Radial
position $\approx \pm .4$ mm at E3. Triggered E and H
superperiod $\lambda/2$ backleg winding bumps at ± 2.25 ms
(12 ms half sinusoid). Noted beam loss at E3,
which suggests they cause a ν_H shift. Tried to
measure ν_H but data still poor. Switched to
vertical ν measurements. Got

| | |
|------------------|--|
| E & H bumps off | $\nu_V = 8.653 \pm .012$ |
| only E bump on | $8.644 \pm .024$ |
| only H bump on | $8.642 \pm .022$ |
| E and H bumps on | about same as above as predicted by beam code, no $\Delta\nu_V$. |

Using E10 flag, noted that outer edge of beam
with backleg bumps on is at 1.82" from beam center
axis — approximately what beam code gives.

Moved E10 septum in. Could only skew it by
-2.4 mrad instead of desired -4.7 mrad. Noted that
only $\sim 4\%$ beam loss with down stream end -1.6"
from B.C. axis. Not much different at -1.5".
We did note that losses were strongly dependent on
CBM — no loss at $.8 \cdot 10^{12}$, 25% lost at $1.7 \cdot 10^{12}$.
Beam size is strongly dependent on CBM.

The E10 magnet does not appear to be an
injection aperture at above CBM at 1.5" w.r.t.
B.C. axis (downstream end). Our desired operating
position is about 1.6".

2215: F Superperiod leak aborted studies.