

Tune measurements using computer fit to perturbed orbit

M. Q. Barton

December 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.

Studies - Dec 1, '73

M. Q. Barton

Blumberg
NO. 487

Some time was made available by
puff chamber problems. Starting at ~ 11 am...
I worked on a computer program to measure
injection v -values using a variation of a
technique developed earlier. That system
depends on curve fitting the orbit as influenced
by a perturbation to a known form. Currently
~~so~~ many electrodes are missing, and the usual
bump techniques are rather difficult at injection
fields so the method is almost unusable.

The new version used only the # 15 electrodes
of which there are still 9. Orbit deformation
is done by switching d.c. dipoles and taking
two complete orbits with dipoles in two states.
A version LOWHN does horizontal orbits and LOWVN
does vertical. The programs work but the
accuracy is poor ($\sim \pm 0.05$ v units). None the less -
they show we are capturing in a region

$v_H \sim 8.9$, $v_V \sim 8.7$
probably undesirable.

