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## Tune measurements using computer fit to perturbed orbit

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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.

