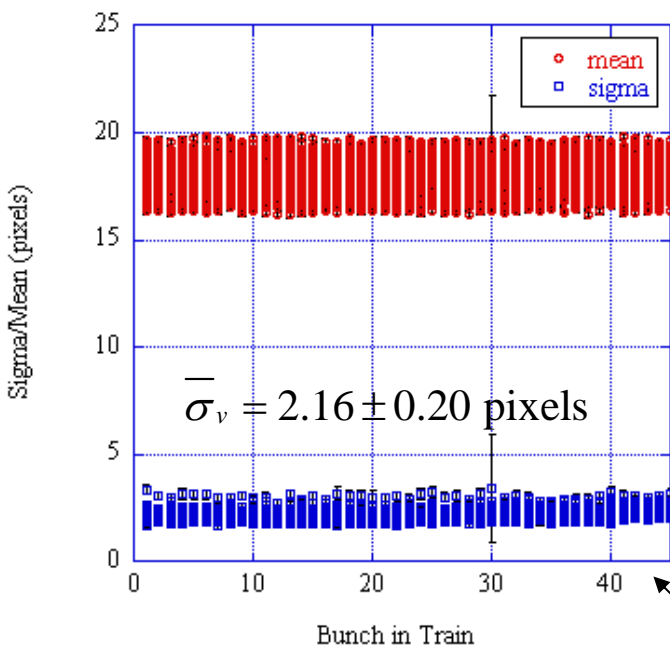


# CHESSE e+ Long Train Vertical Beam Size-Part-I

At the CHESSE energy, vertical beam size of positrons was measured as a function of current with the PMT array on 5/16/2006.

- I. CHESSE Electron Cloud Measurement
- II. Summary

e+ Vertical Beam Size I=0.5mA/bunch CHESS



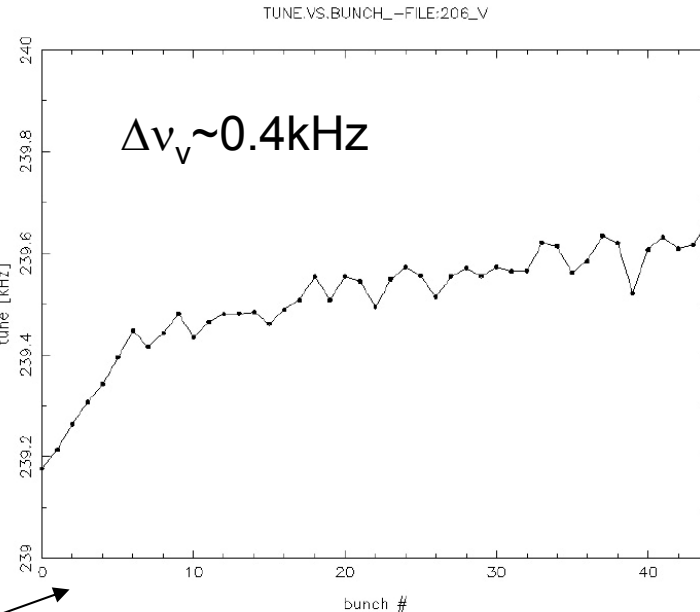
# I. CHESS Electron Cloud Measurement

e+ 1x45

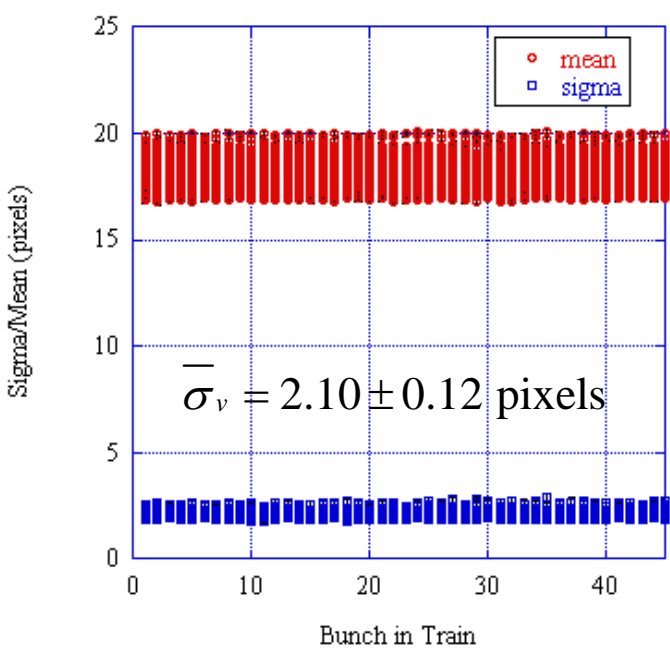
100 turn average/10K turns

Stable  $\sigma_v$  and centroid

I=0.5mA/bunch

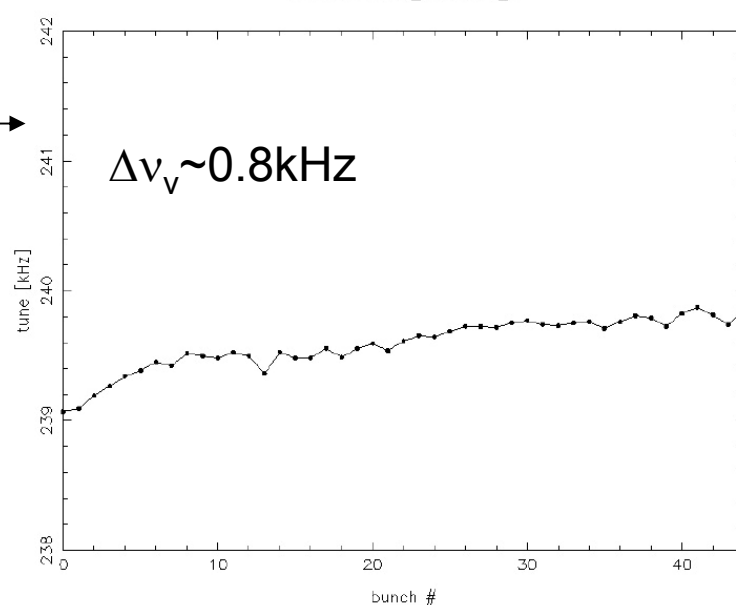


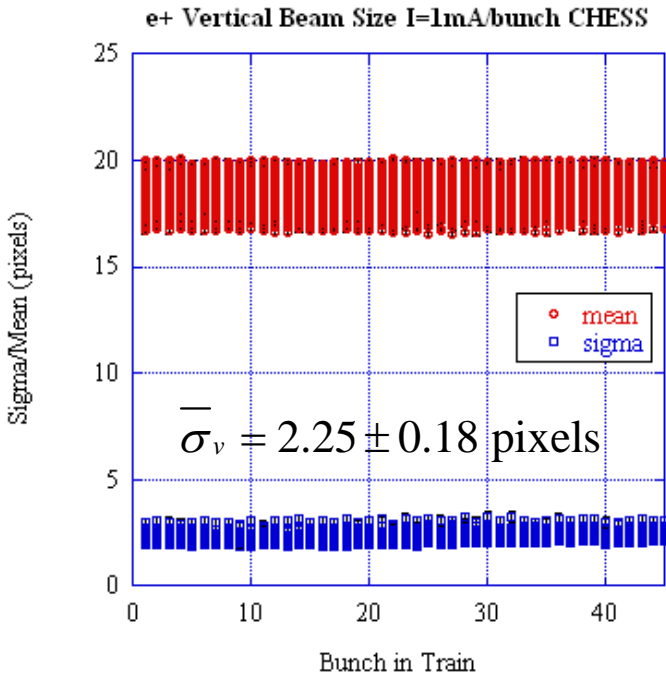
e+ Vertical Beam Size I=0.75mA/bunch CHESS



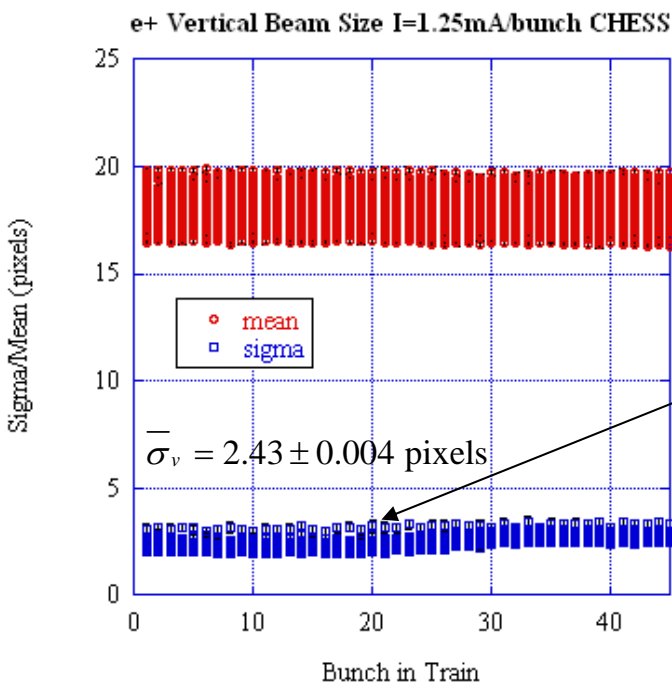
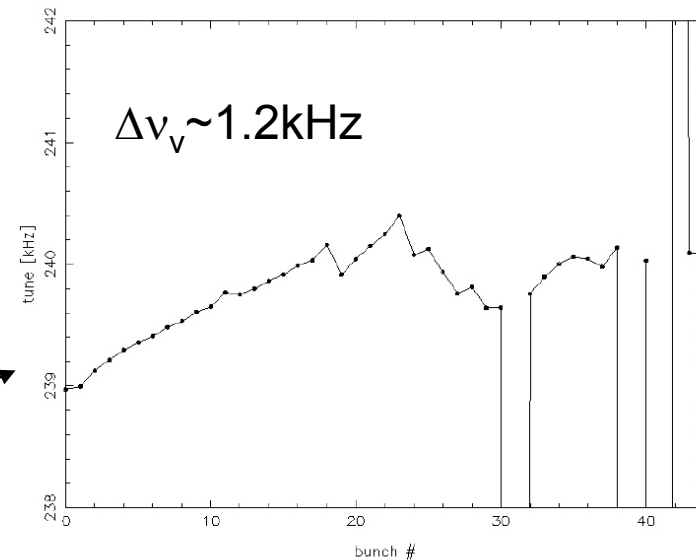
I=0.75mA/bunch

TUNE.VS.BUNCH\_-FILE:207\_V



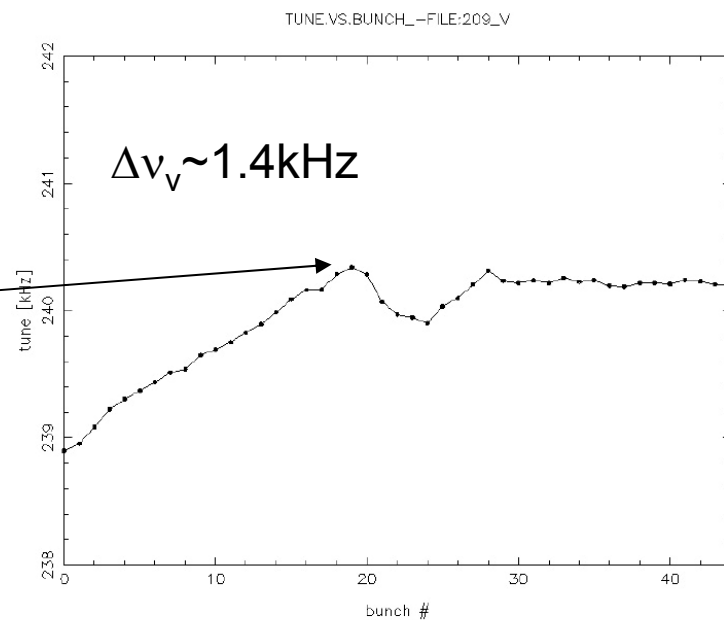


I=1mA/bunch

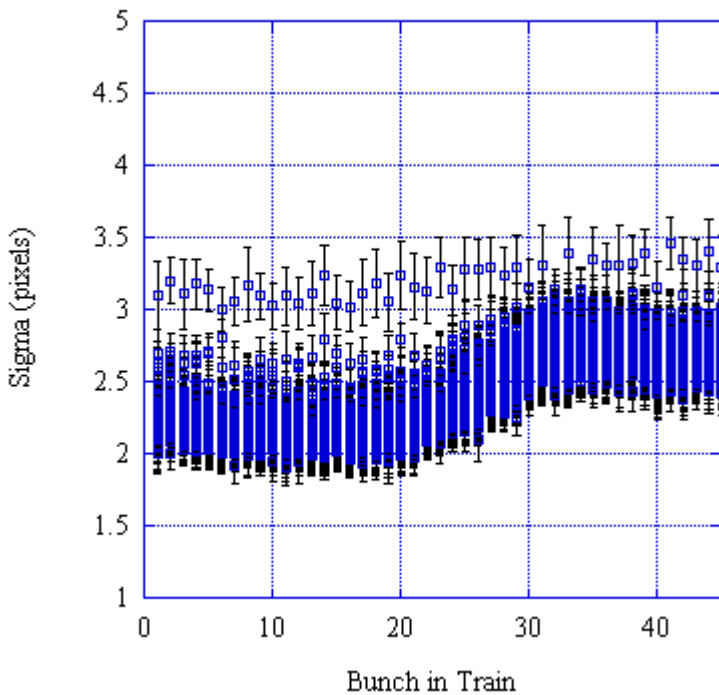


I=1.25mA/bunch

Hint of e- cloud instability at ~bunch 20



e+ Vertical Beam Size I=1.25mA/bunch CHESS



Detailed view of  $\sigma_v$  shift in beam size ~turn 20

## II. Summary

- At low currents (I=0.5,0.75,1.0 mA/bunch)  $\sigma_v$  along the 45 bunch train is fairly constant.
- At 1.25mA/bunch  $\sigma_v$  growth occurs between bunches 20 to 30. This hint of instability calls for further measurements at higher currents.