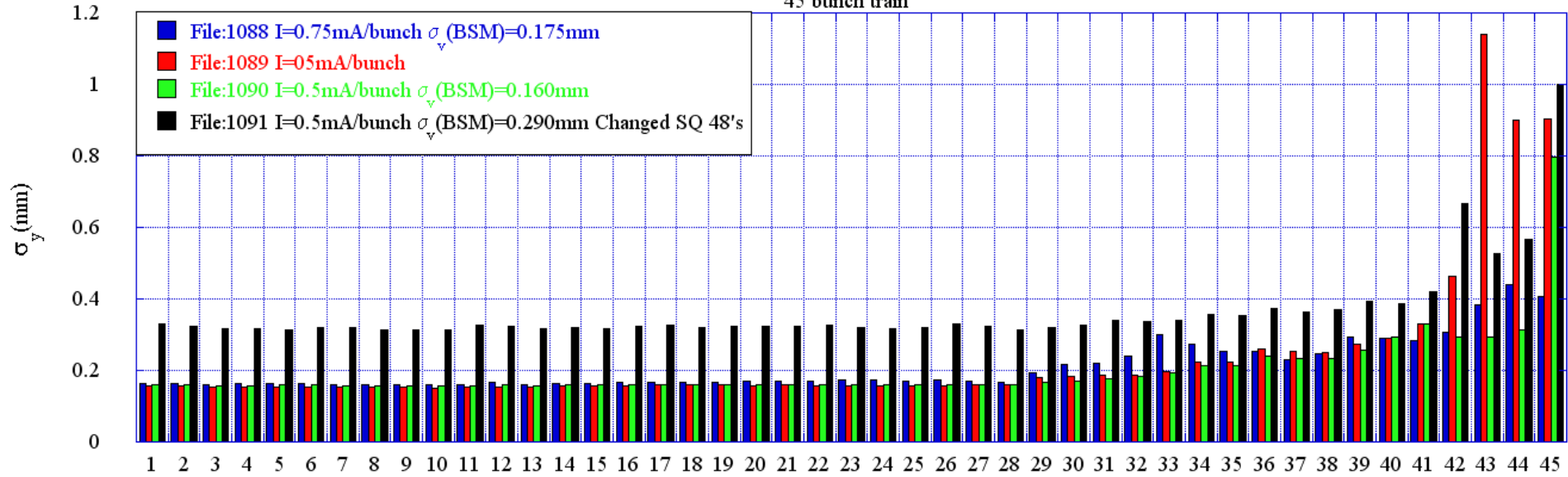
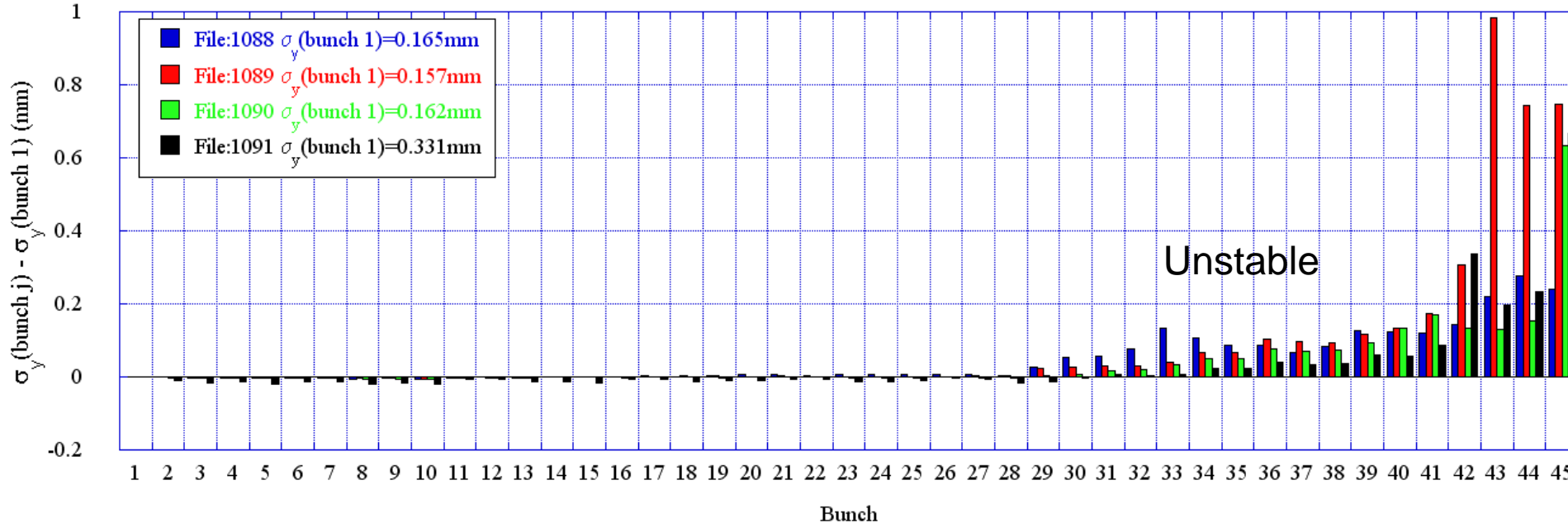


# Ions with e- bunch trains-3/14/2007

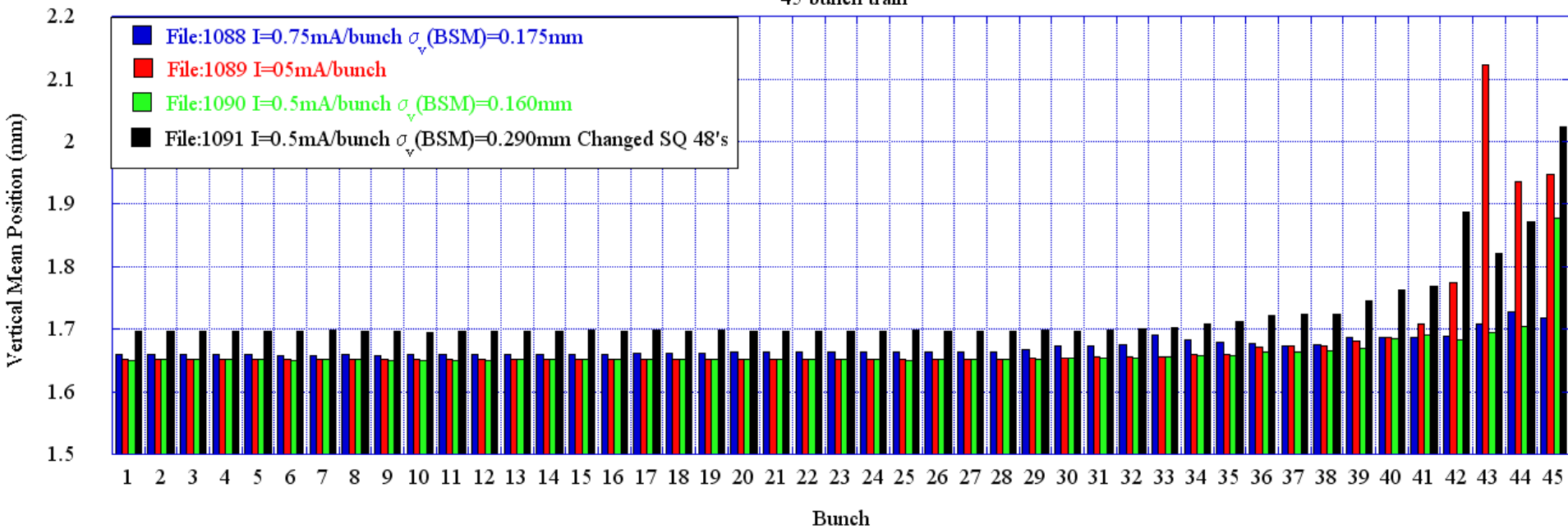
e- vertical beam size  
45 bunch train



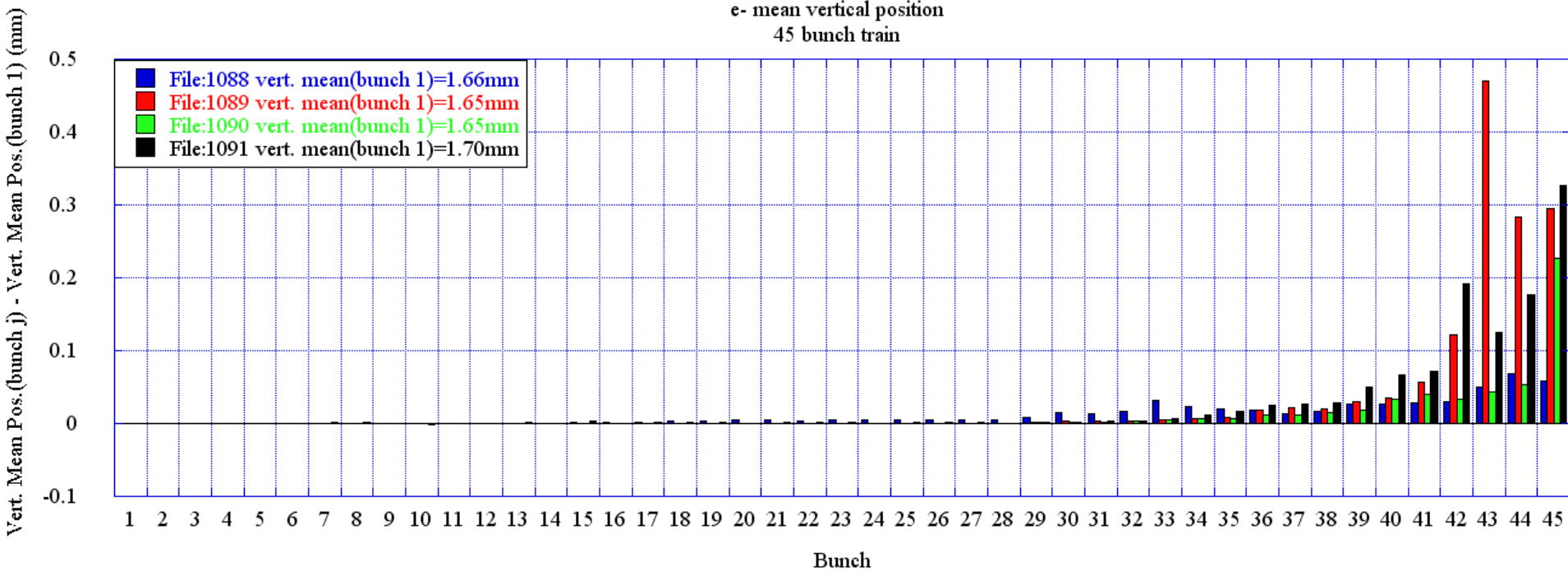
e- vertical beam size  
45 bunch train

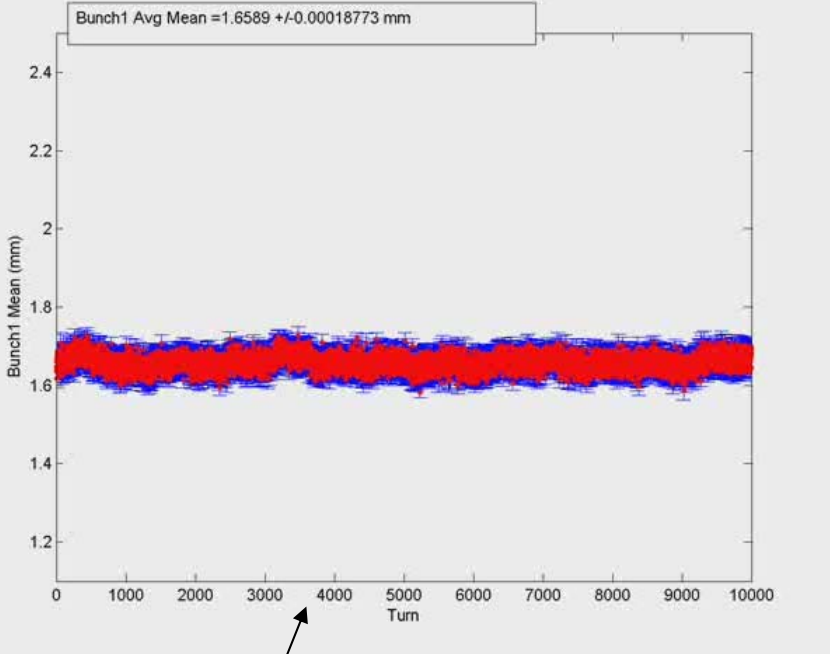


e- mean vertical position  
45 bunch train



e- mean vertical position  
45 bunch train





Filled 45 bunches with 14 ns spacing  
@I=0.75mA/bunch.

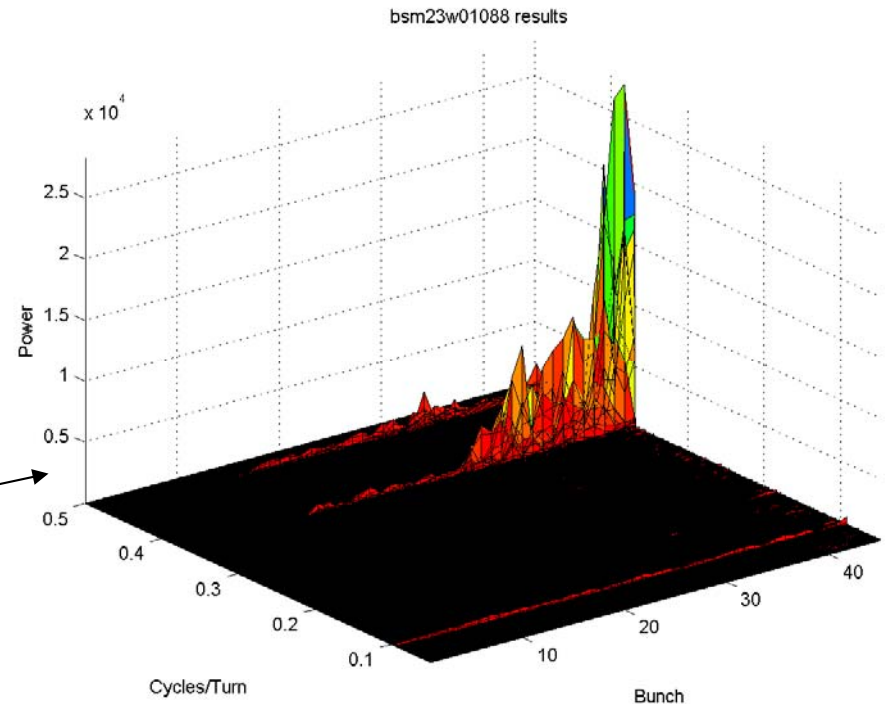
Turned off all e+ feedback

$\sigma_v$  (beam size monitor)=175 $\mu$ m

Single turn mean vertical position (10,000 turns) File:1088

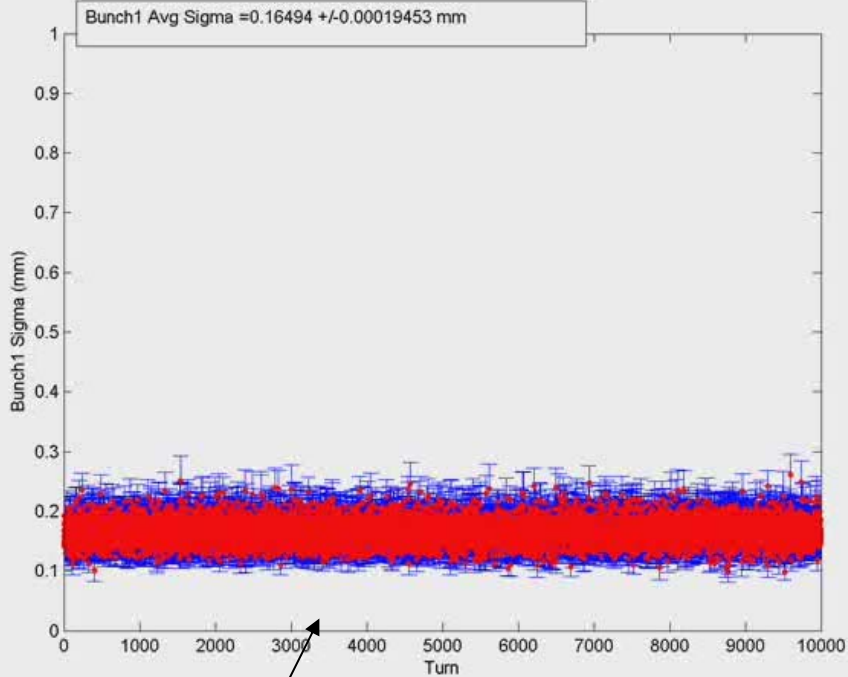
Turn-by-turn mean vertical position (movie).  
Vertical oscillation at ~bunch 30.

FFT mean  
vertical position  
( $f_{\text{peak}}=245.7\text{kHz}$ )



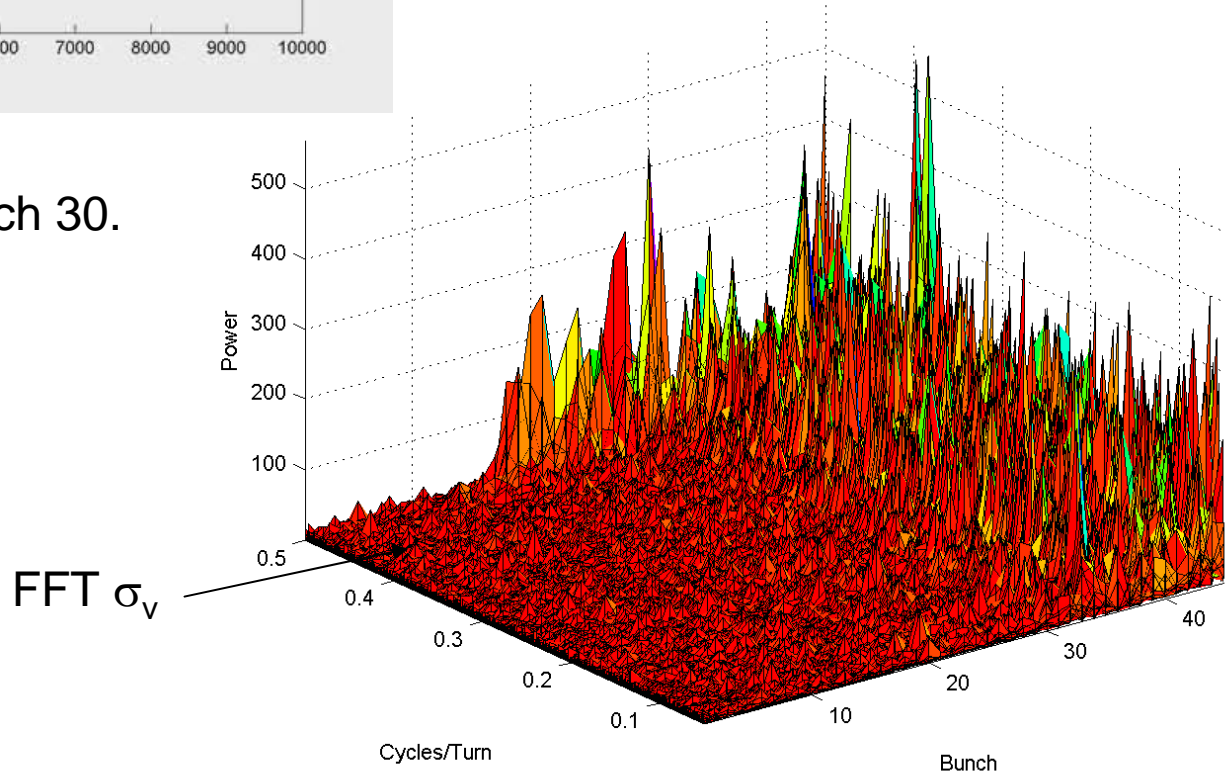
Single turn  $\sigma_v$  (10,000 turns)  
File:1088

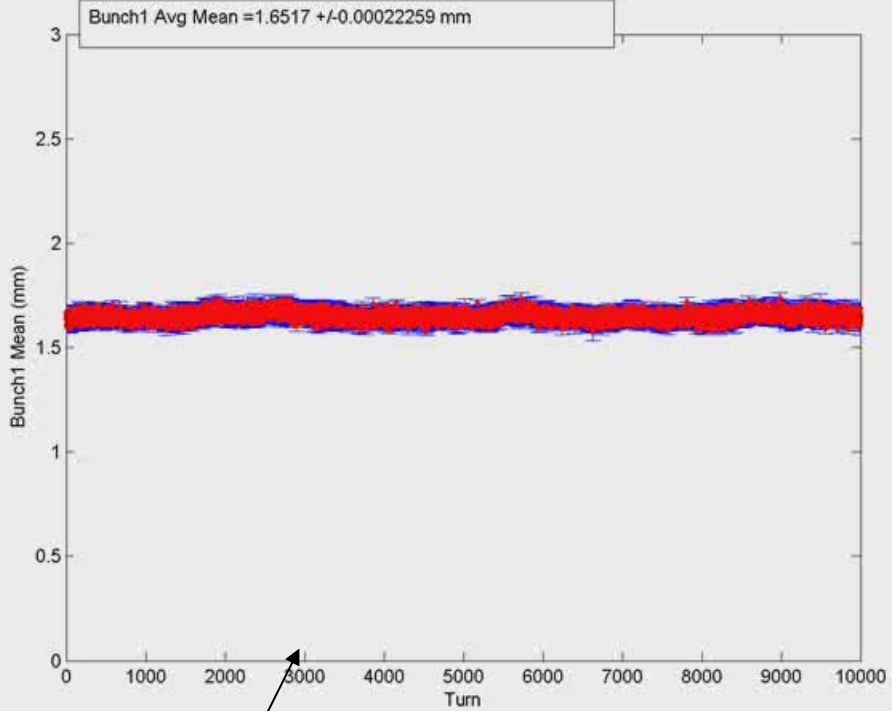
$\sigma_v$  (beam size monitor)=175 $\mu\text{m}$



Turn-by-turn  $\sigma_v$  (movie).  
Beam size growth at ~bunch 30.

bsm23w01088 results





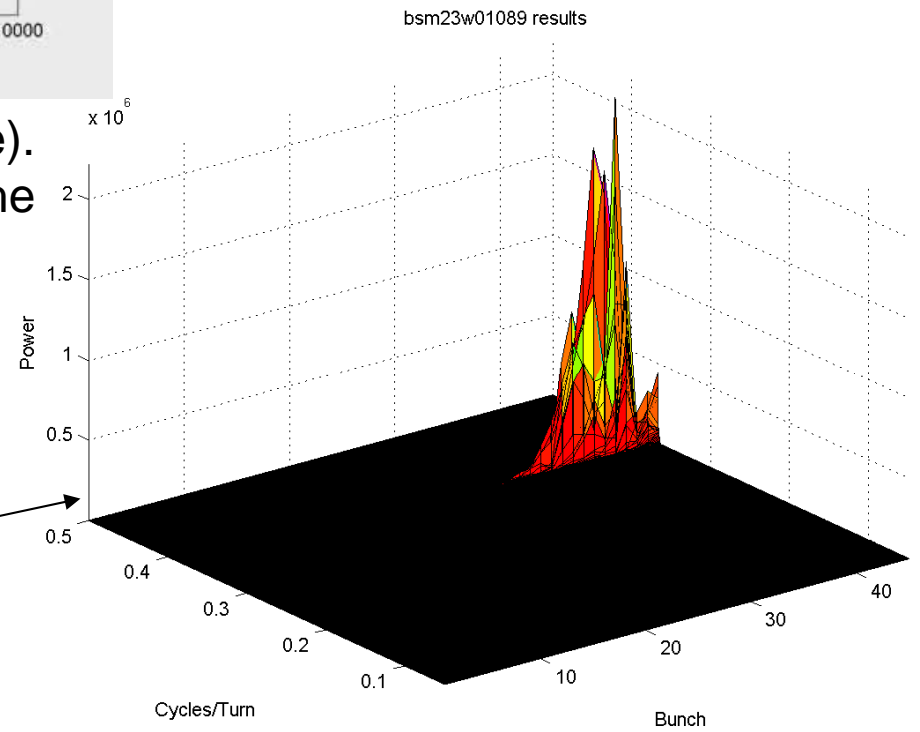
Filled 45 bunches with 14 ns spacing @ I=0.5mA/bunch.

Raised H feedback to 1300

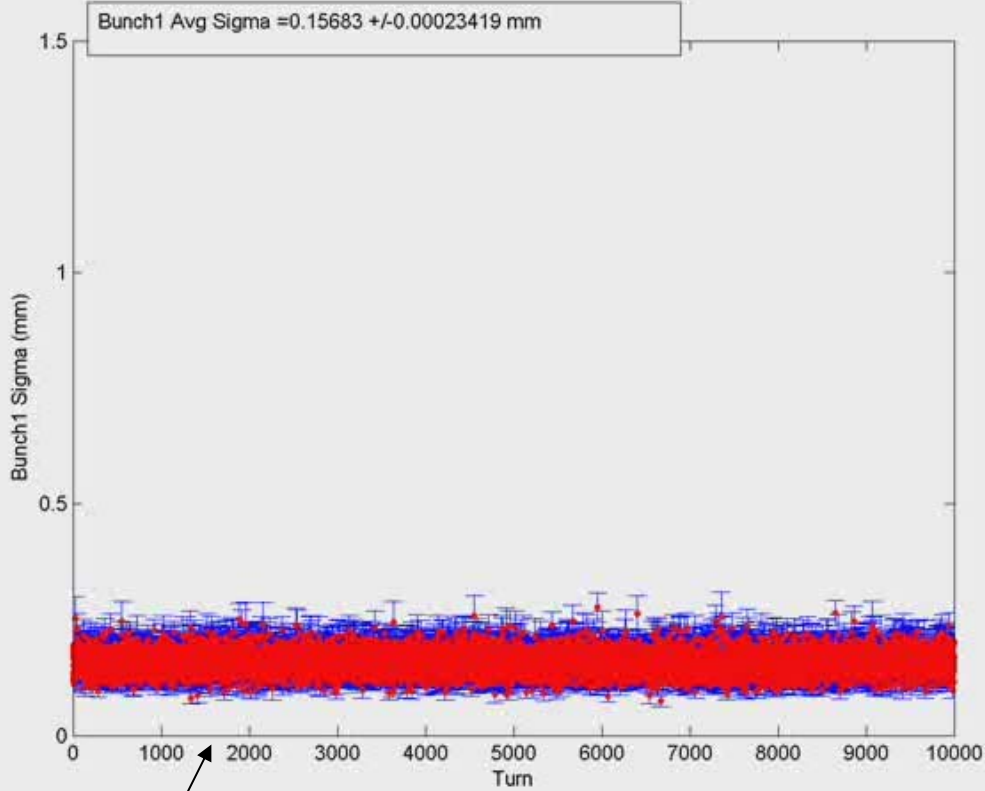
Single turn  $\sigma_v$  (10,000 turns)  
File:1089

Turn-by-turn mean vertical position (movie).  
Large vertical oscillation near the end of the train.

FFT mean  
vertical position  
( $f_{\text{peak}}=246.3\text{kHz}$ )

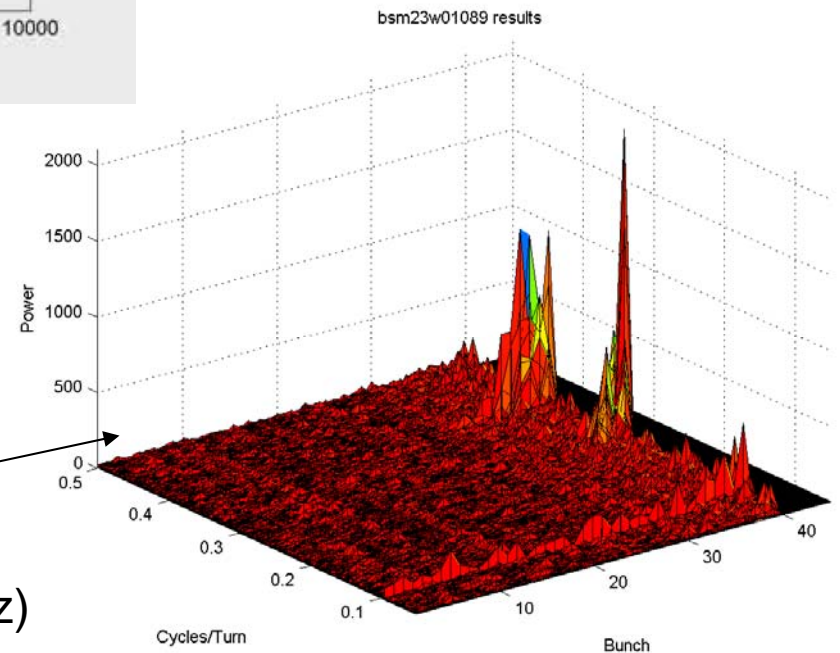


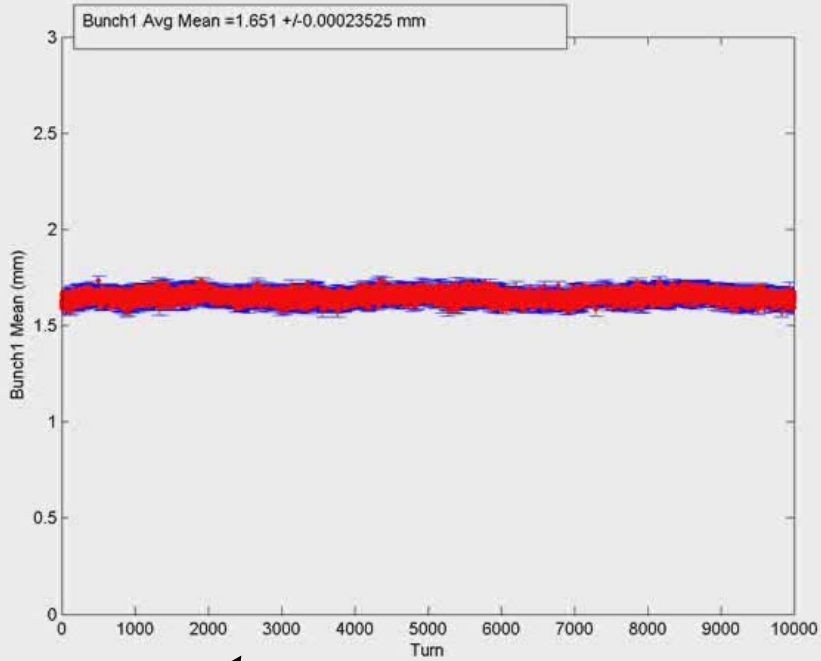
Single turn  $\sigma_v$  (10,000 turns)  
File:1089



Turn-by-turn  $\sigma_v$  (movie).  
Large beam size blow-up near the end of the train.

FFT  $\sigma_v$   
Bunches 40-45 cut out.  
( $f_{\text{peak}} = 246.2\text{kHz}$  and  $288\text{ kHz}$ )





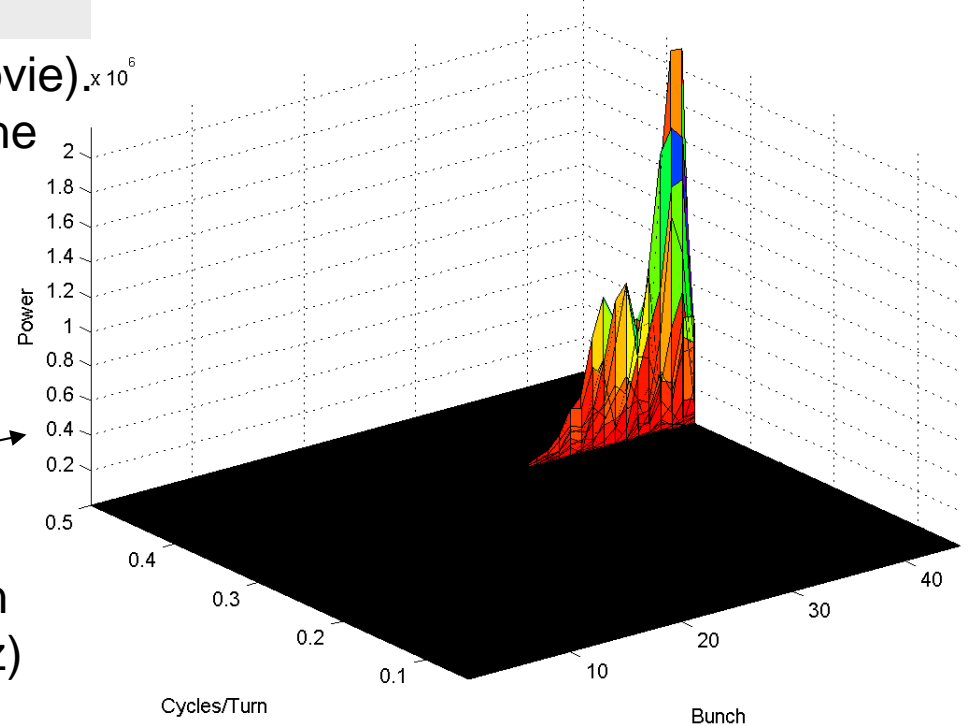
Refilled 45 bunches with 14 ns spacing  
@I=0.5mA/bunch.

$\sigma_v$  (beam size monitor)=160 $\mu$ m

Single turn mean vertical position (10,000  
turns) File:1090

Turn-by-turn mean vertical position (movie).  
Large vertical oscillation at the end of the  
train.

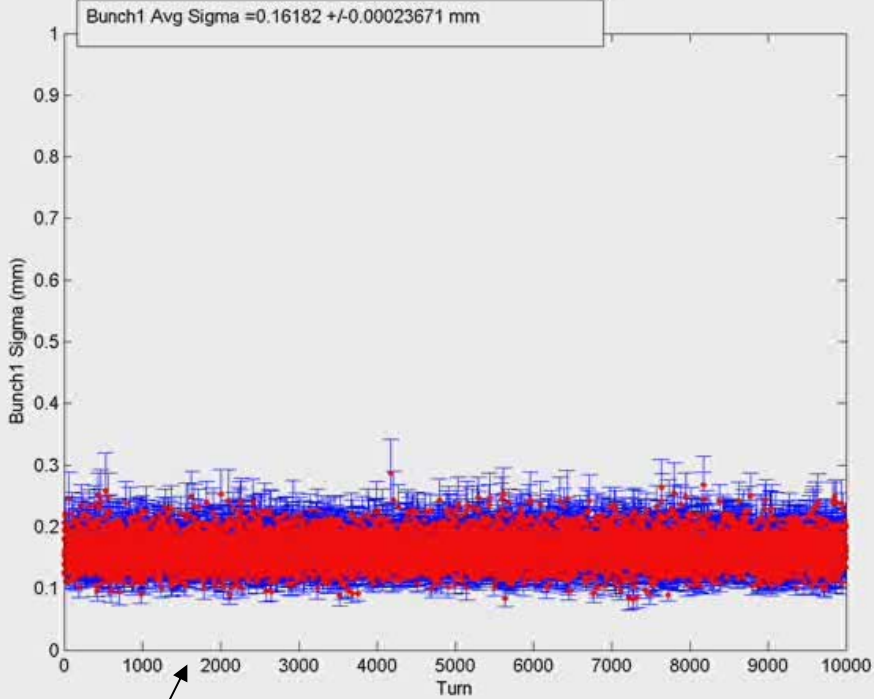
bsm23w01090 results



FFT mean  
vertical position  
( $f_{\text{peak}}=246.3\text{kHz}$ )

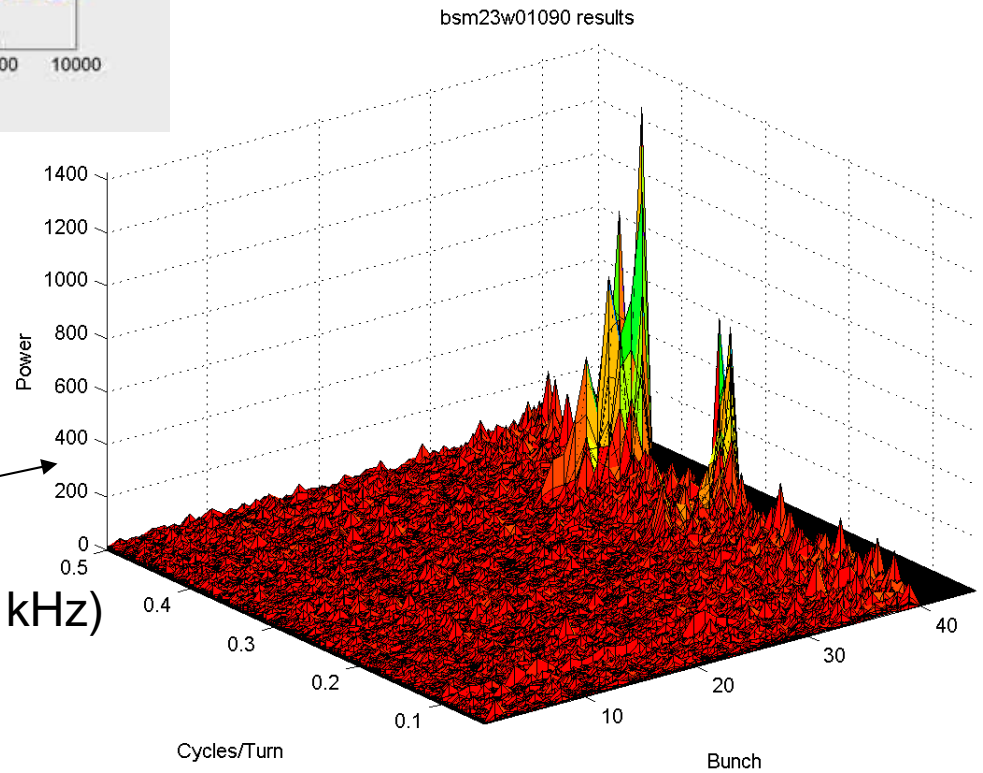
Single turn  $\sigma_v$  (10,000 turns)  
File:1090

$\sigma_v$  (beam size monitor)=160 $\mu\text{m}$

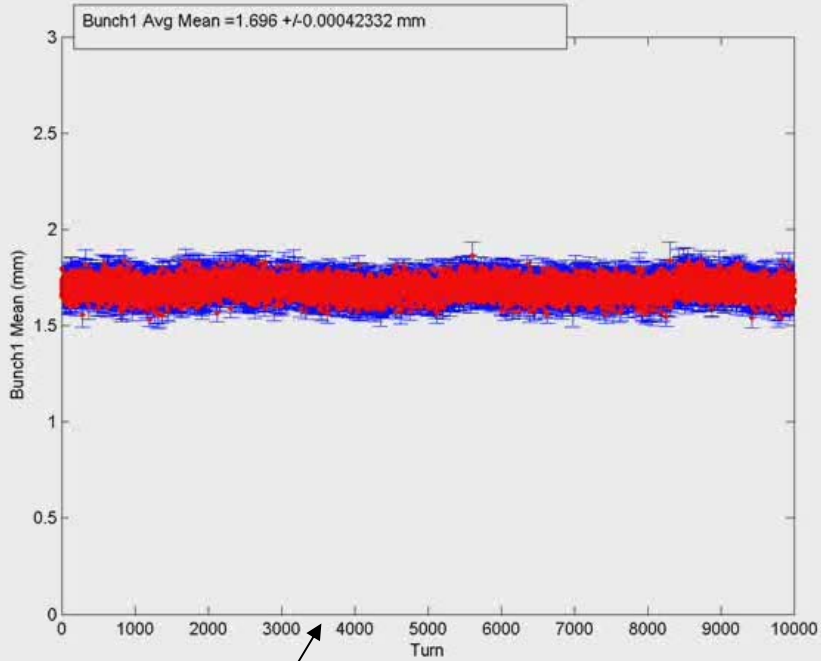


Turn-by-turn  $\sigma_v$  (movie).  
Beam size growth at ~bunch  
40.

FFT  $\sigma_v$   
( $f_{\text{peak}}=246.3\text{kHz}$  and  $288.7\text{kHz}$ )







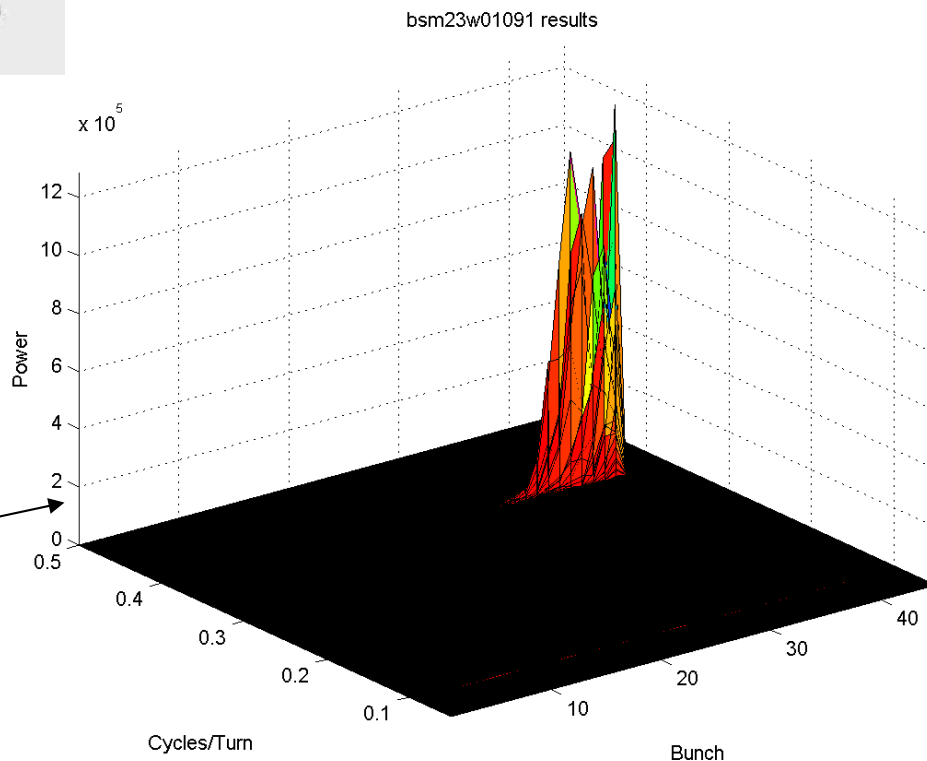
Changed SQ 48's to raise vertical beam size. Filled 45 bunches with 14 ns spacing @I=0.5mA/bunch.

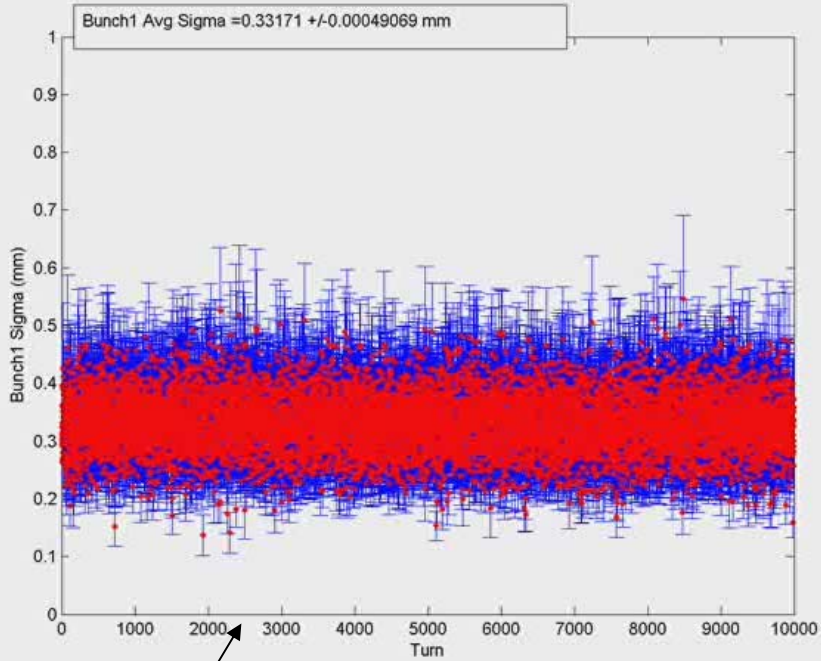
$\sigma_v$  (beam size monitor)=290 $\mu\text{m}$

Single turn mean vertical position (10,000 turns) File:1091

Turn-by-turn mean vertical position (movie). Large vertical oscillation at ~bunch 30.

FFT mean vertical position ( $f_{\text{peak}}=245.1\text{kHz}$ )





Single turn  $\sigma_v$  (10,000 turns)  
File:1091

$\sigma_v$  (beam size monitor)=290 $\mu\text{m}$

Turn-by-turn  $\sigma_v$  (movie). Large equilibrium beam size.

FFT  $\sigma_v$   
( $f_{\text{peak}}=244.6\text{Hz}$  and 290 kHz)

