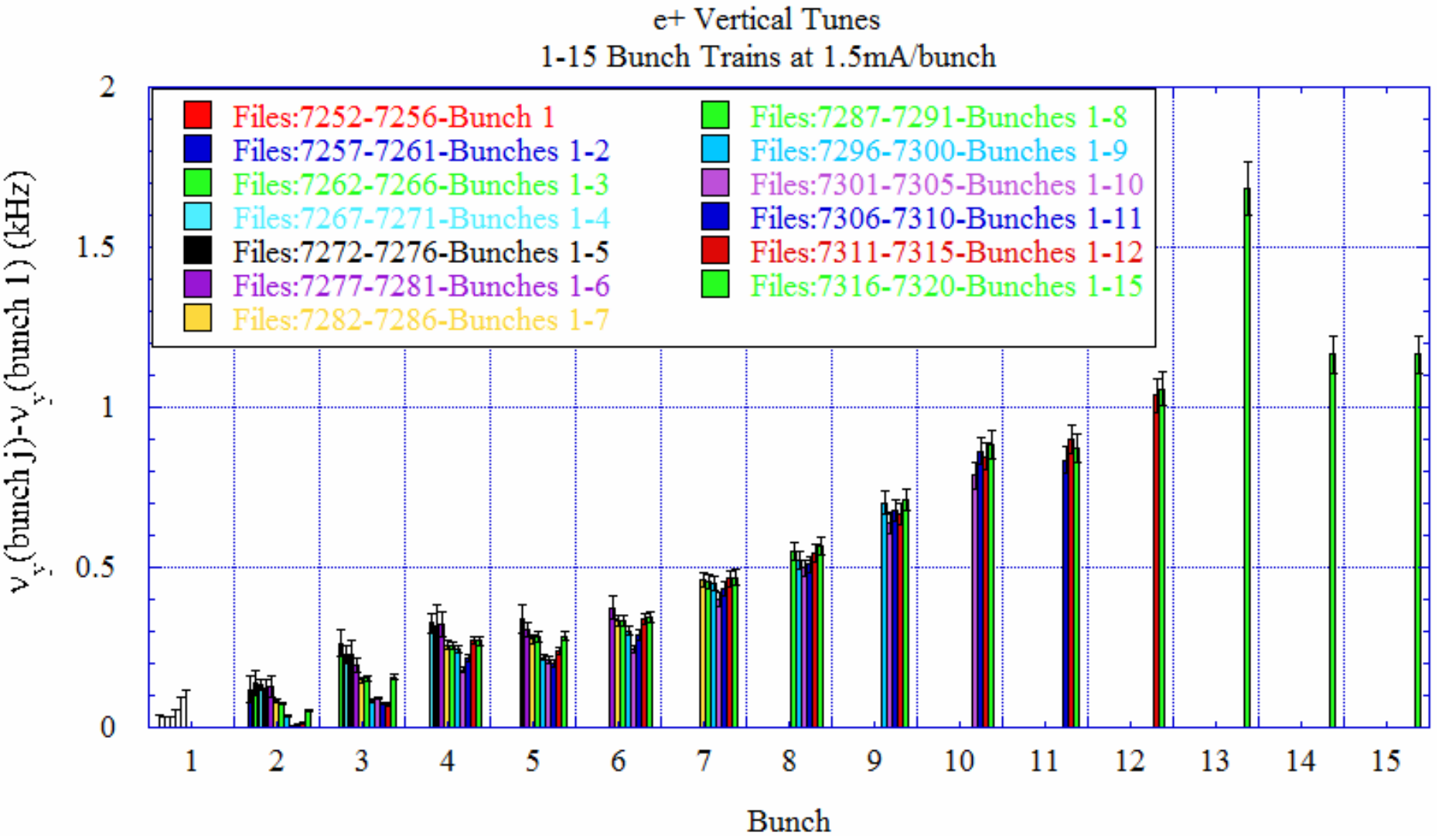


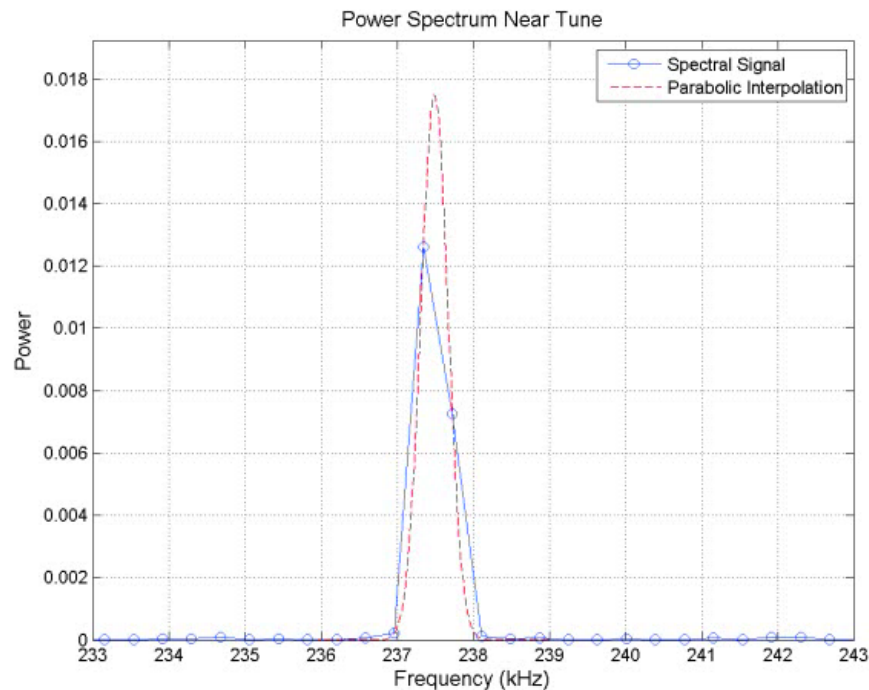
e- Cloud Machine Studies-Tune Shift Studies

Filled 14ns spaced bunch trains to 1.5mA/bunch starting with 1 bunch up to a 15 bunch train. Measured the horizontal and vertical tunes at each train configuration.

These results are from measurements made by G. Dugan, J. Calvey, M. Palmer, and R. Holtzapple on 10/31/2008.

Vertical tune shift along the various bunch trains.



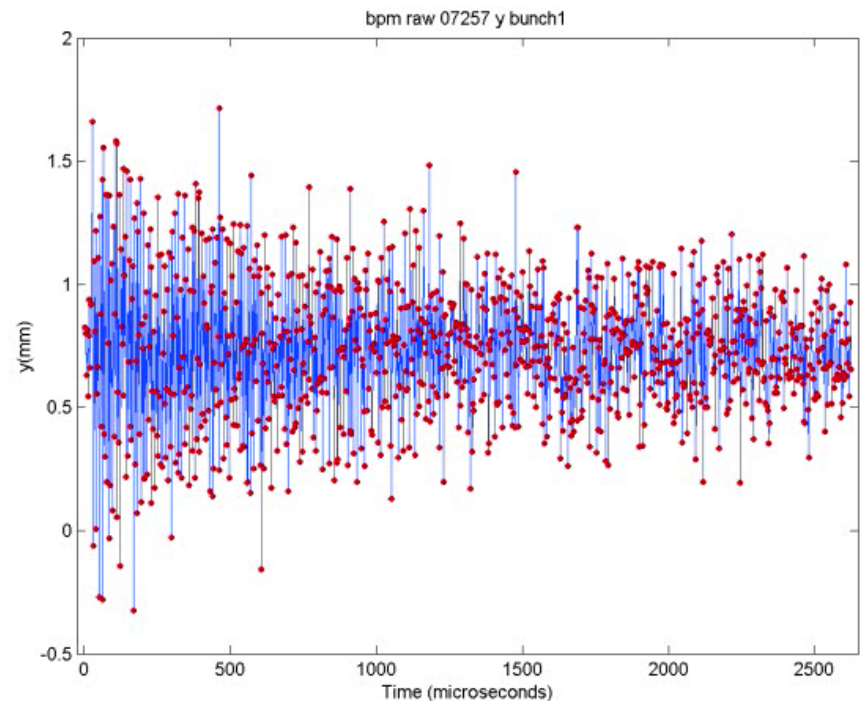


Movie (click to start) of the vertical spectrum for the various bunch trains starting with a 2 bunch train up to the 15 bunch train.

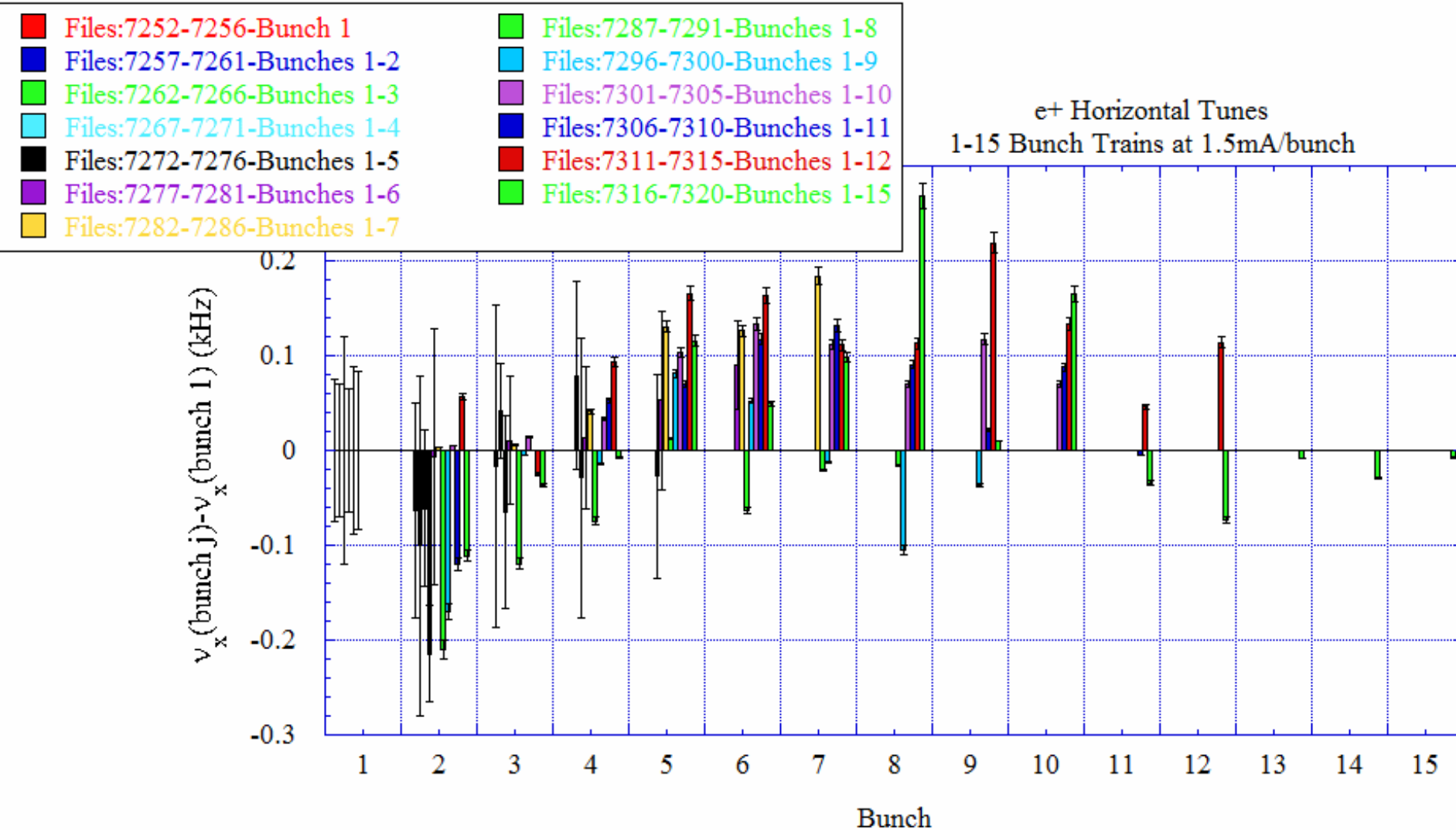
- The vertical tune shifts along the bunch trains is evident.
- The width of the spectrum appears to increase for bunches near the end of the bunch train.

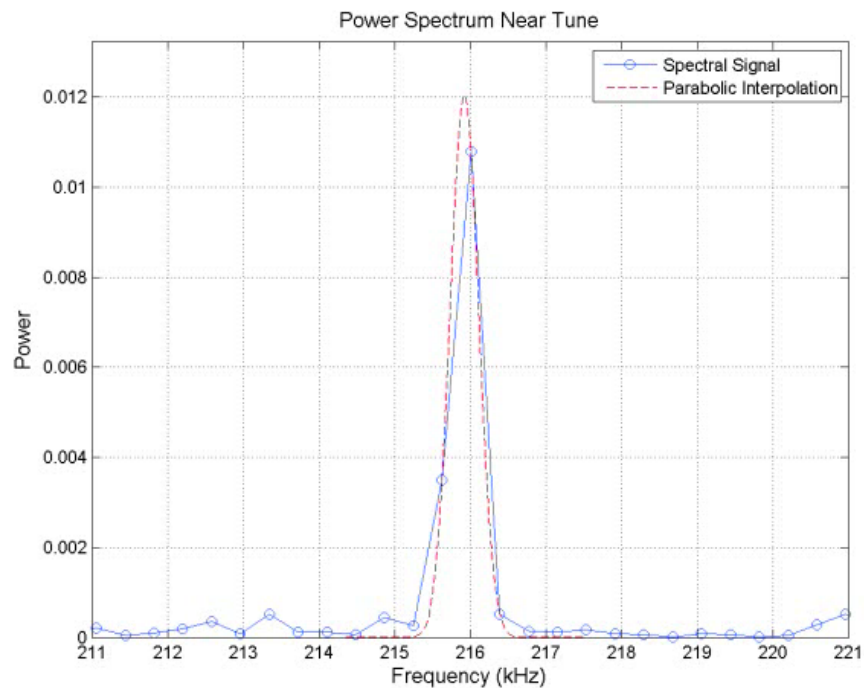
Movie (click to start) of the vertical position at the beam position monitor for the various bunch trains starting with the 2 bunch train up to the 15 bunch train.

- Several of the bunches in the 15 bunch train appear to be vertical unstable.



Horizontal tune shift along the various bunch trains.





Movie (click to start) of the horizontal spectrum for the various bunch trains starting with a 2 bunch train up to the 15 bunch train.

- No horizontal tune shifts along the bunch trains is evident.
- The width of the spectrum changes for some of the bunches.

Movie (click to start) of the horizontal position at the beam position monitor for the various bunch trains starting with the 2 bunch train up to the 15 bunch train.

