

The momentum spread and longitudinal emittance calculation programmed by Adam Para using the Alvin Tollestrup technique has been implemented in the TeV SBD by Bob Flora. The RF is read live (as is the beam energy).

The values are reported in

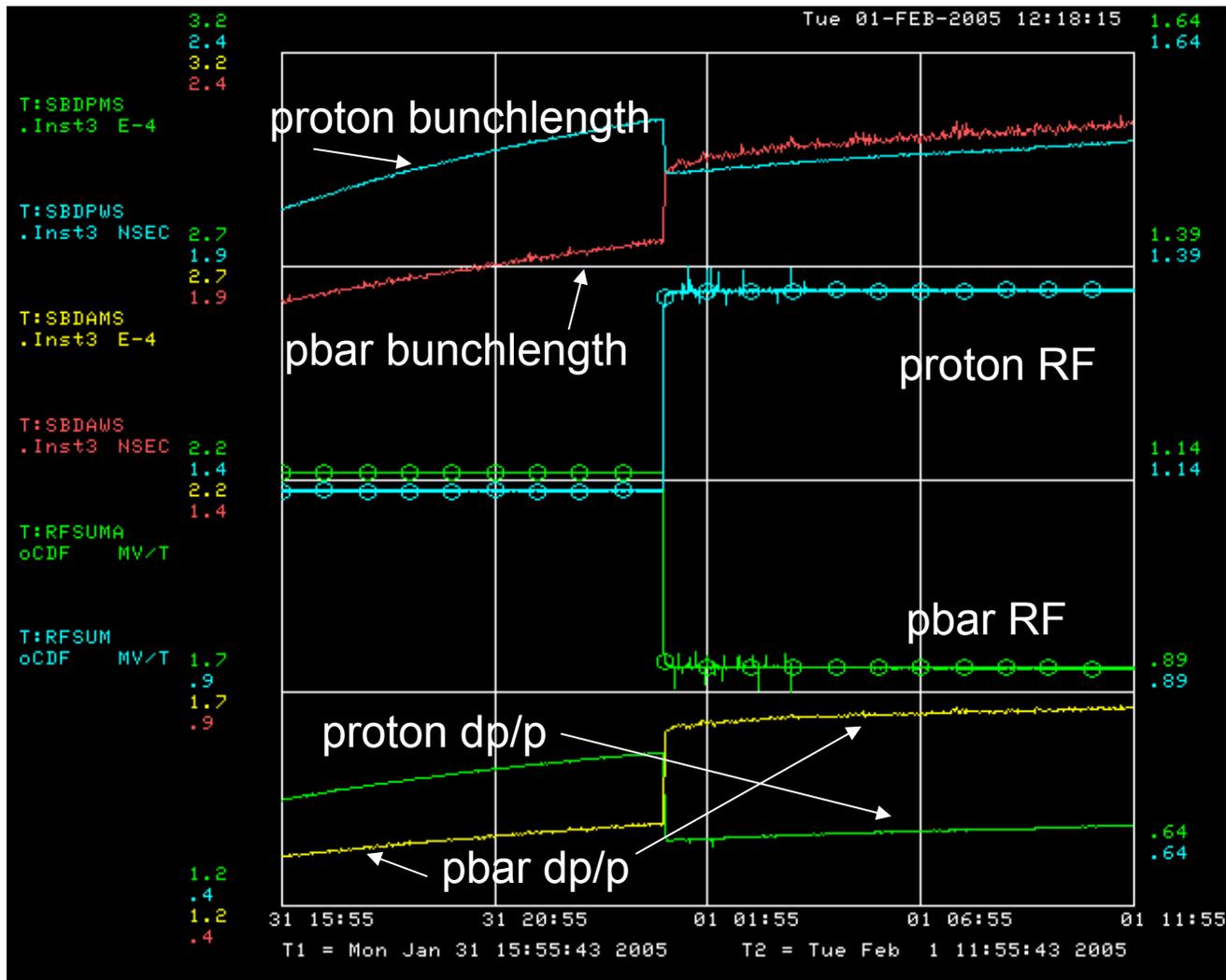
T:SBDPMS[0 - 36] - Momentum spread for protons {rms}

T:SBDAMS[0 - 36] - Momentum spread for antiprotons

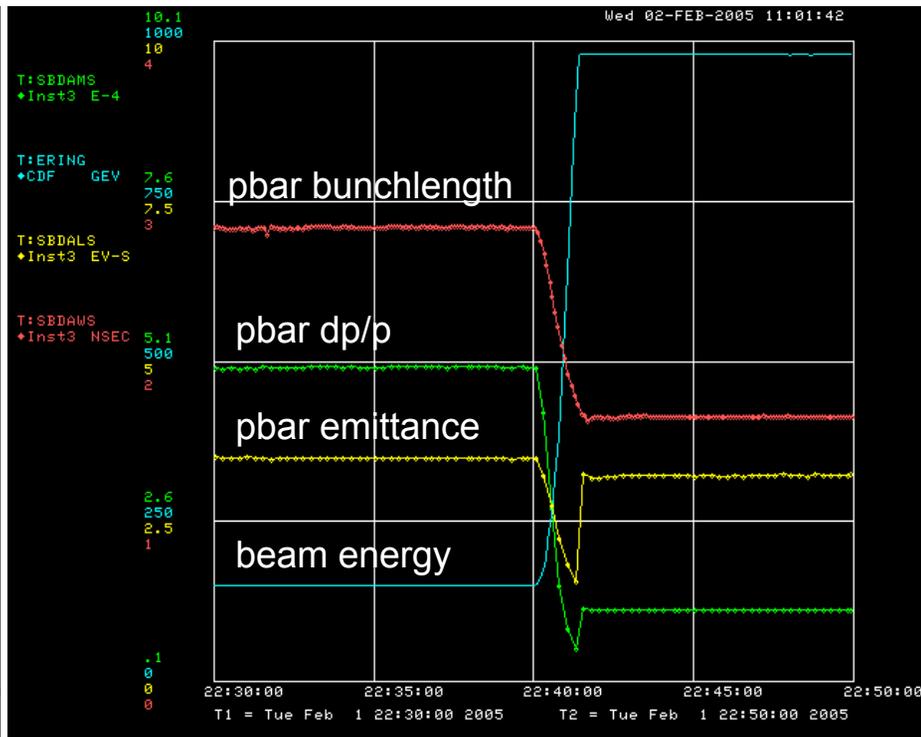
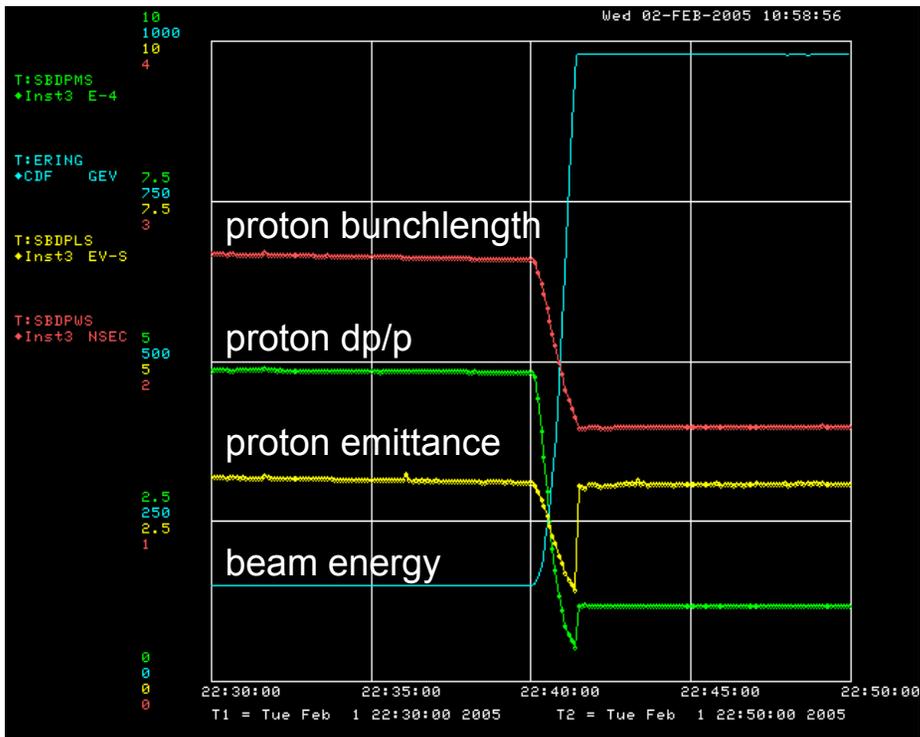
T:SBDPLS [0 - 36] - Longitudinal emittance (%?) for protons

T:SBDALS [0 - 36] - Longitudinal emittance (%?) for antiprotons

0 is the aggregate bunch; 1 - 36 are the individual bunches

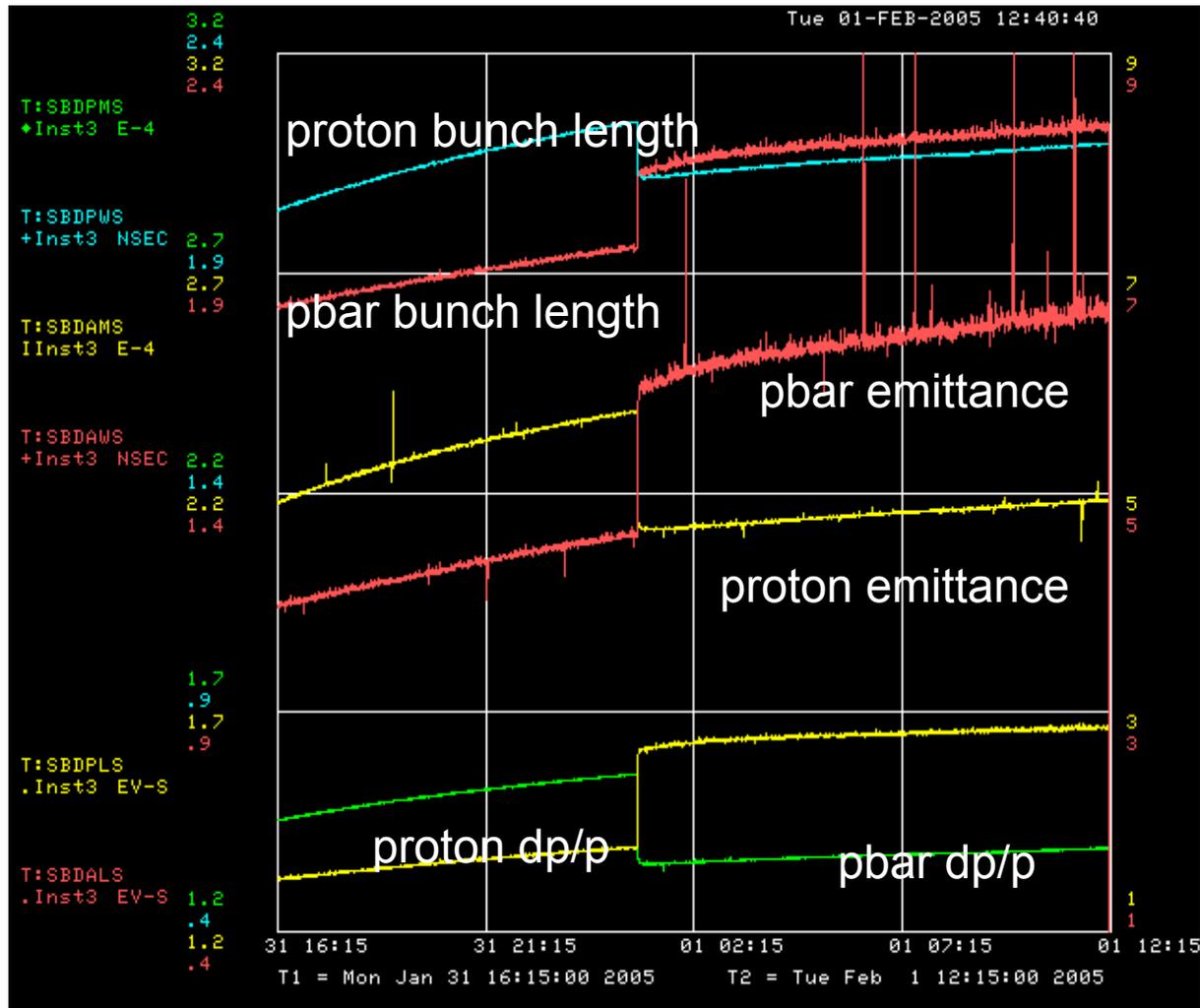


Tevatron SBD outputs for store 3953, including RF trip

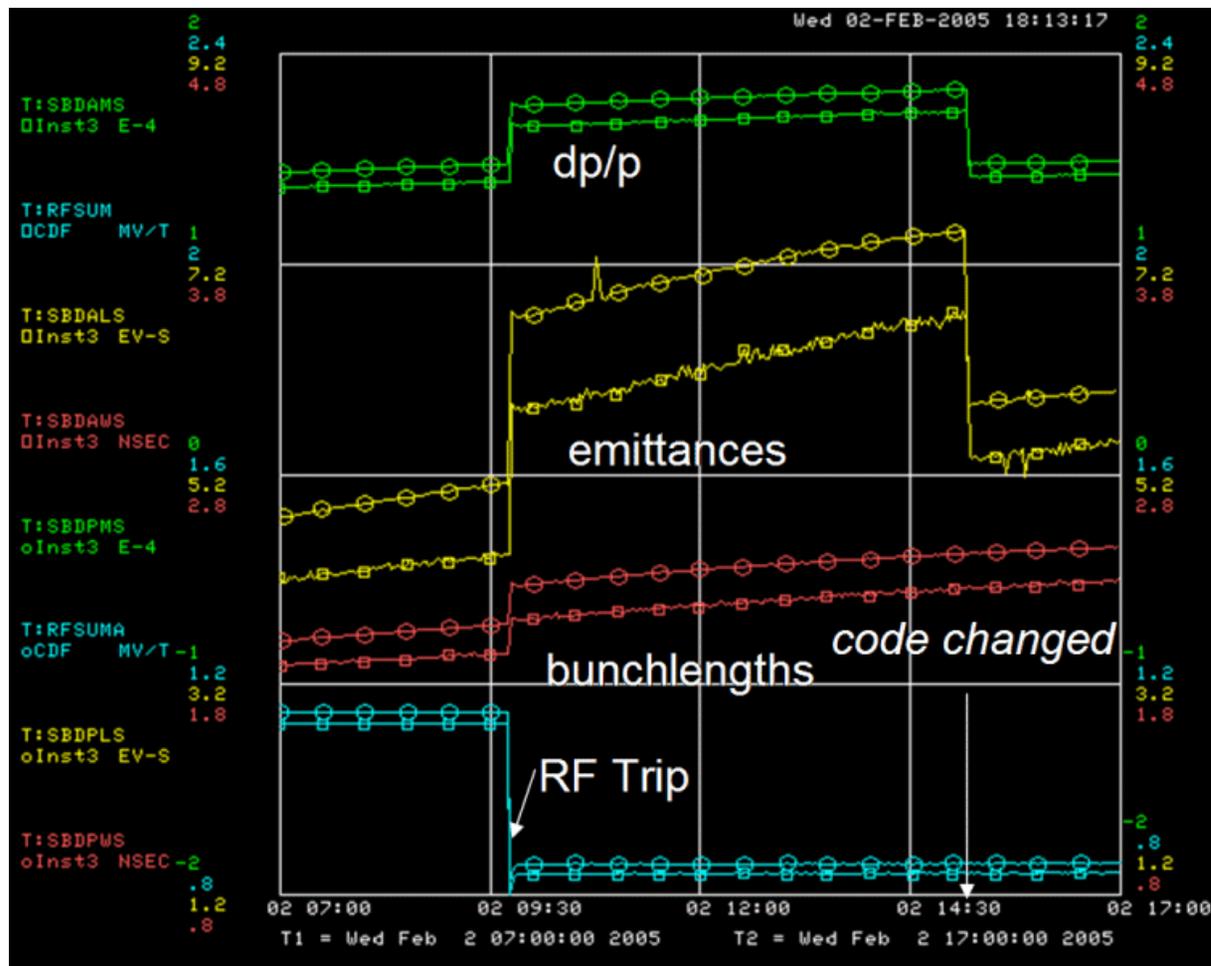


Plots of emittance and momentum spread before and after ramp showing that the emittance reported does not change much between 150 and 980;

SBD parameters during store 3953

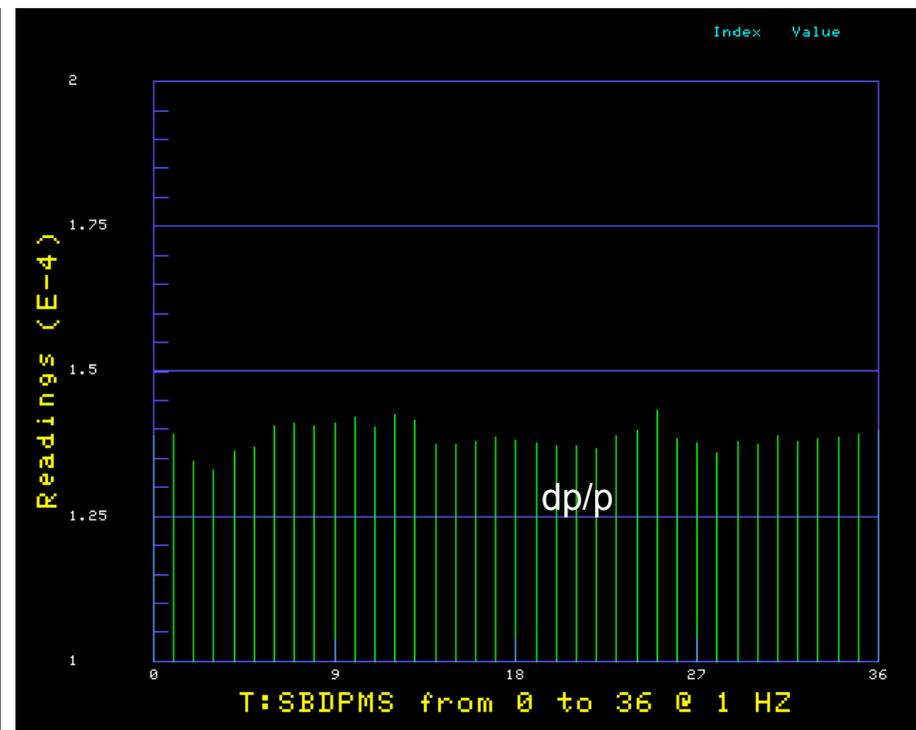
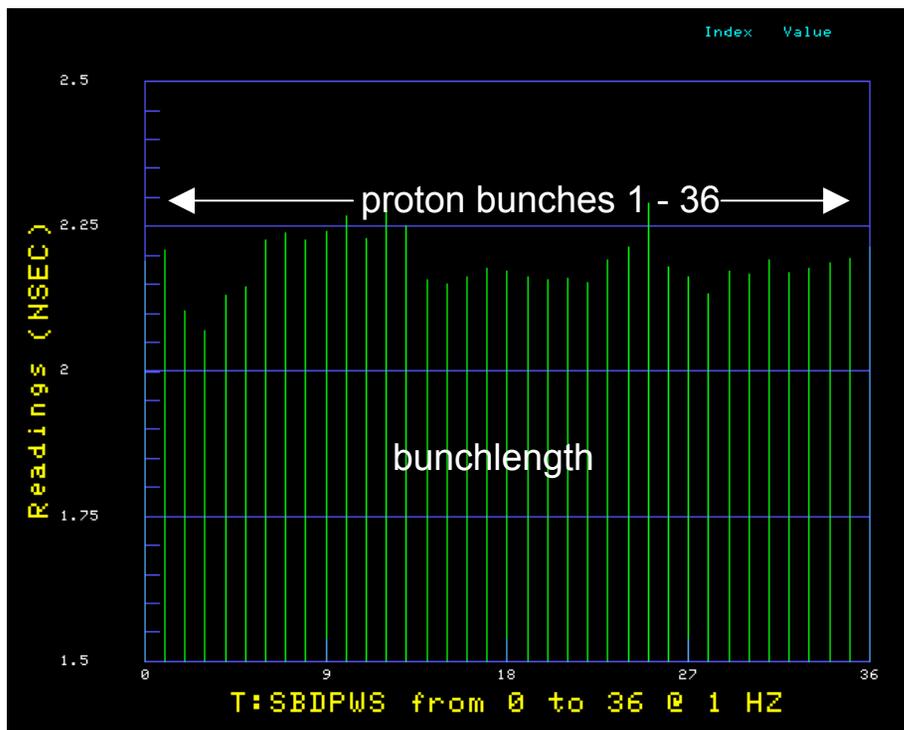


Note: AS POINTED OUT BY V. SHILTSEV, THE EMITTANCES CANNOT CHANGE AS SHOWN. THERE WAS A BUG AT THIS TIME - SEE NEXT.

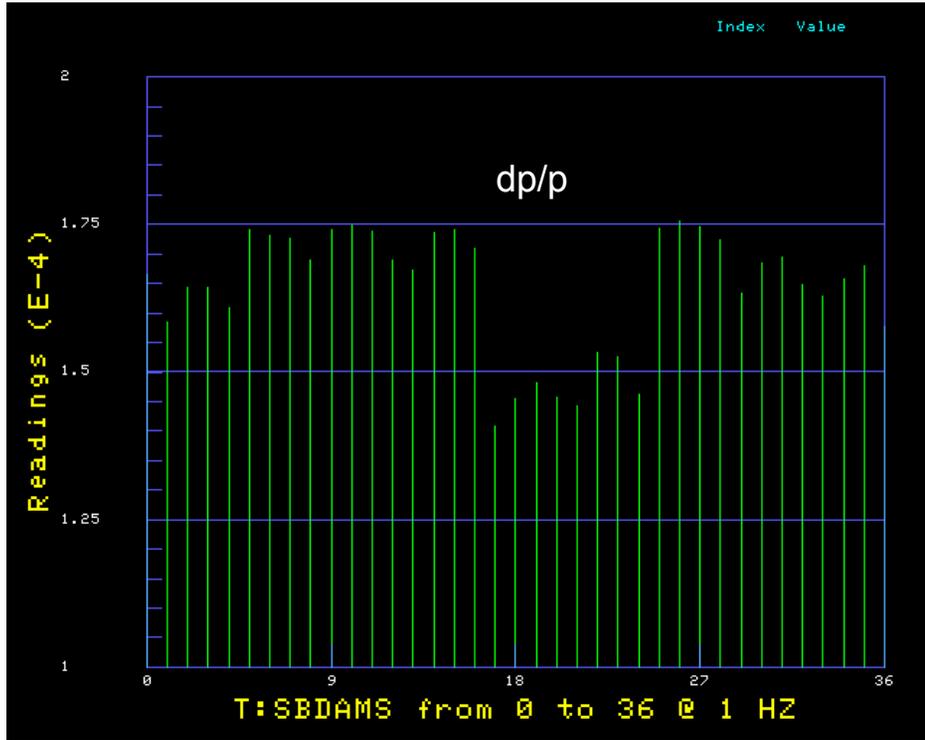
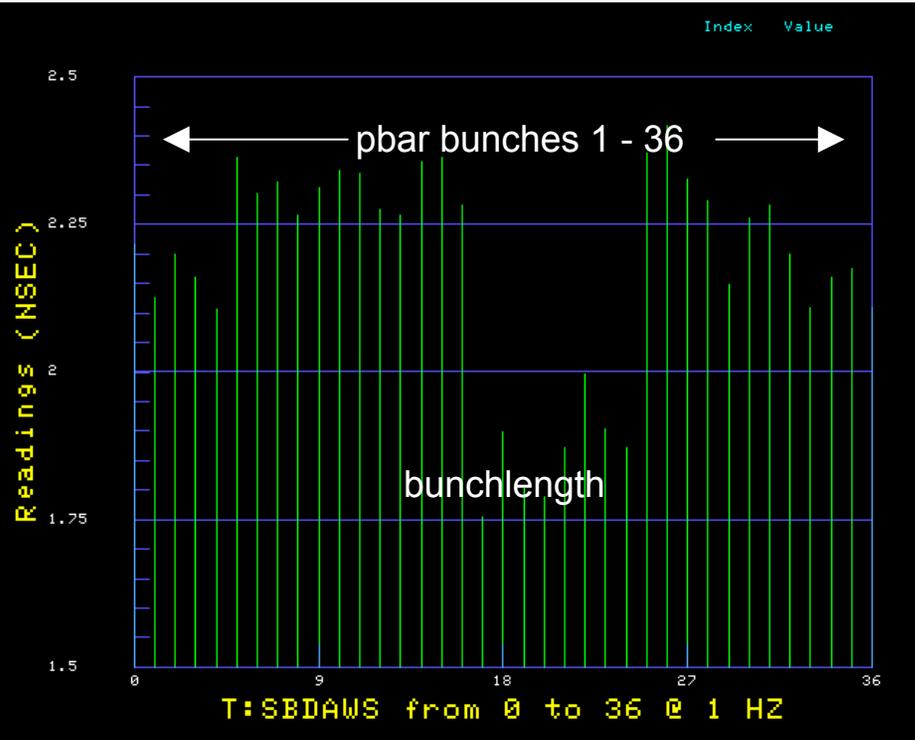


After the problem with the emittances changing when the RF tripped was pointed out, a bug was found and corrected in the code and the changes in emittance reported when another RF trip occurred have been removed. (The bug would only show up when the RF was not at the nominal value.)

ACNet Displays of bunchlength and dp/p arrays (D27)



Proton bunchlength and momentum spread arrays



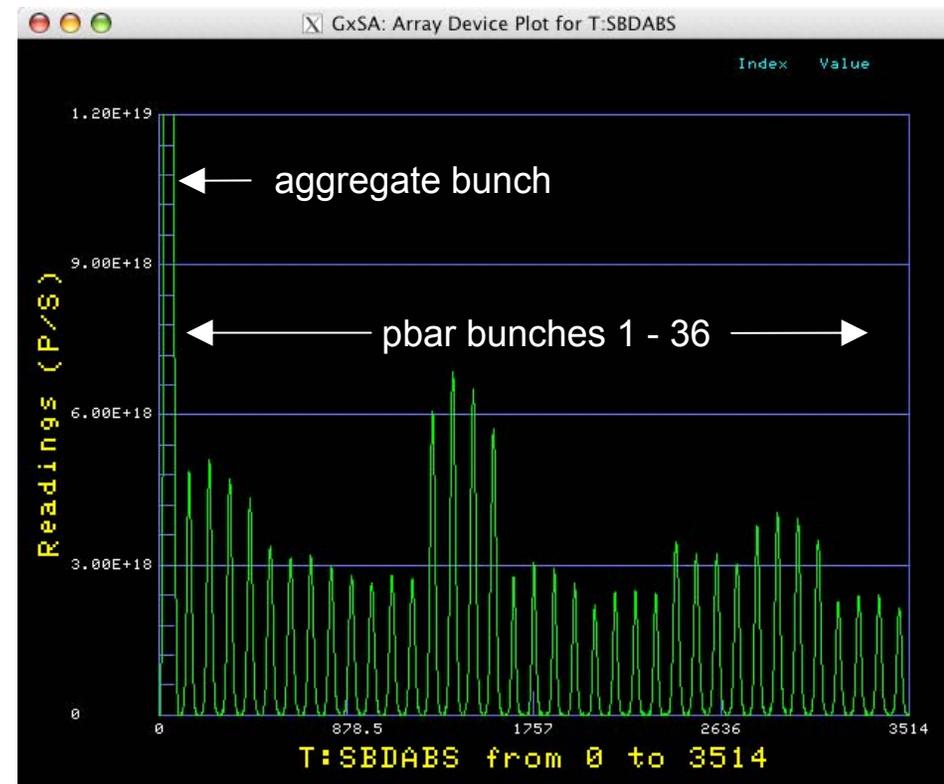
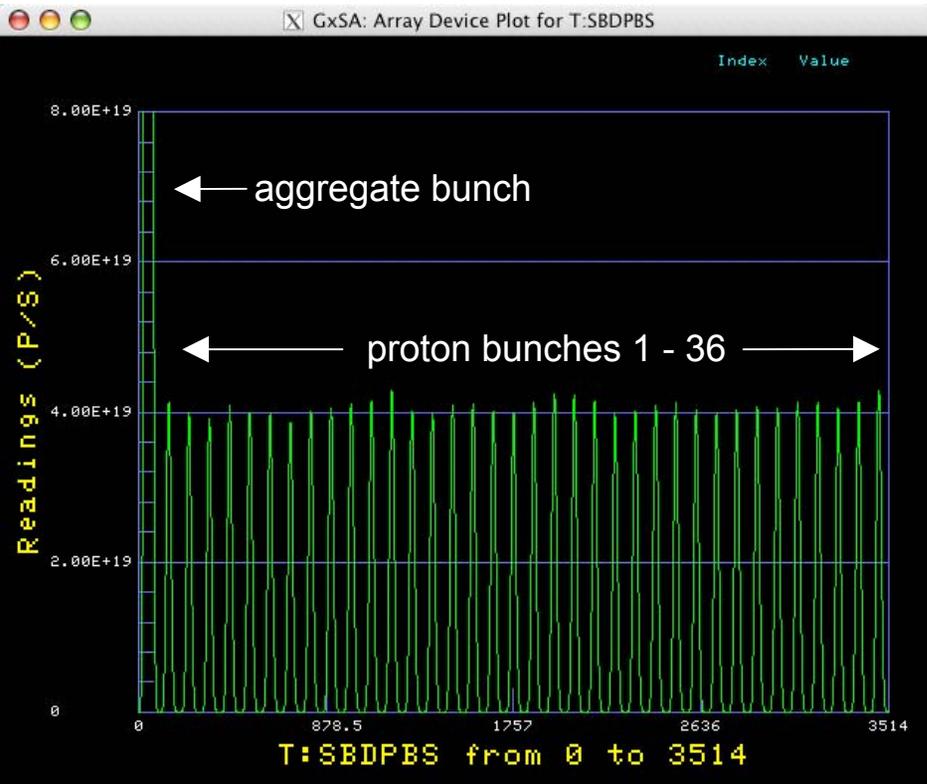
Antiproton bunchlength and momentum-spread arrays

Preparations for the OAC:

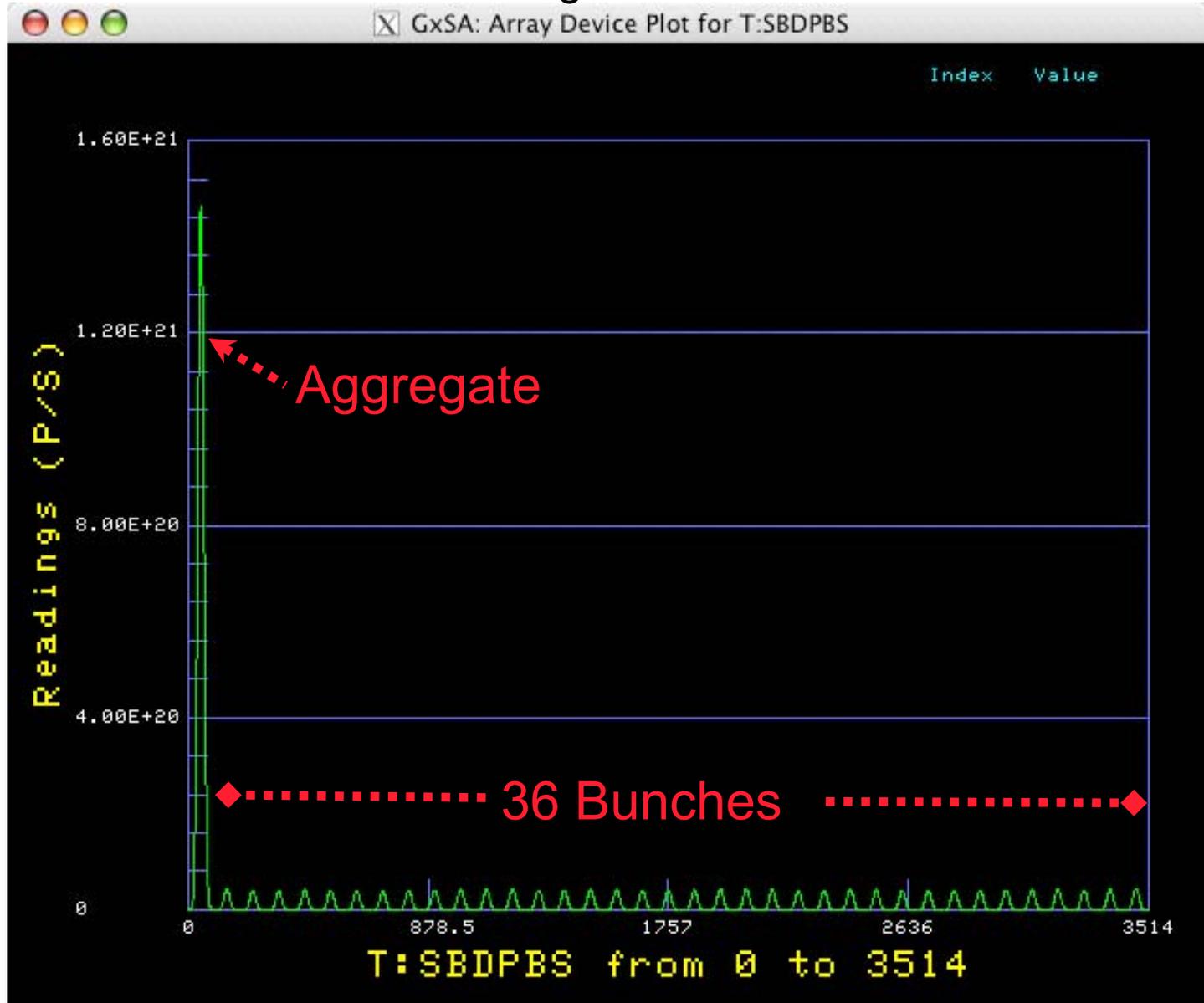
Step 1: Transfer bunch profile data from TeV SBD via ACNET

T:SBDPBS[0 - 3514] is array of 95 samples (@ 5 GHz) for 37 proton bunches

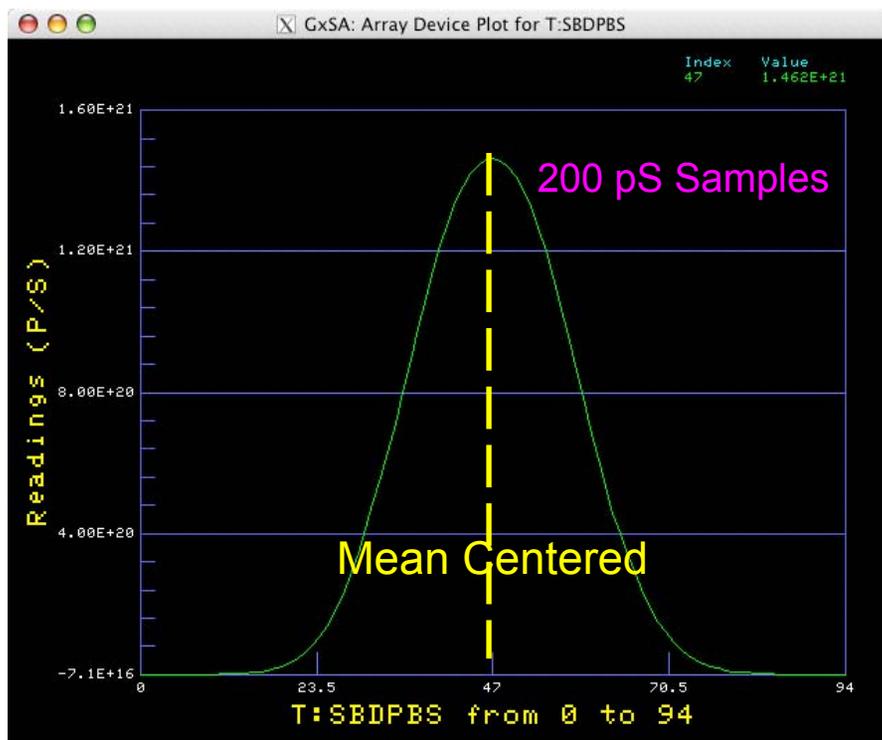
T:SBDABS[0 - 3514] is array of 95 samples (@ 5 GHz) for 37 antiproton bunches



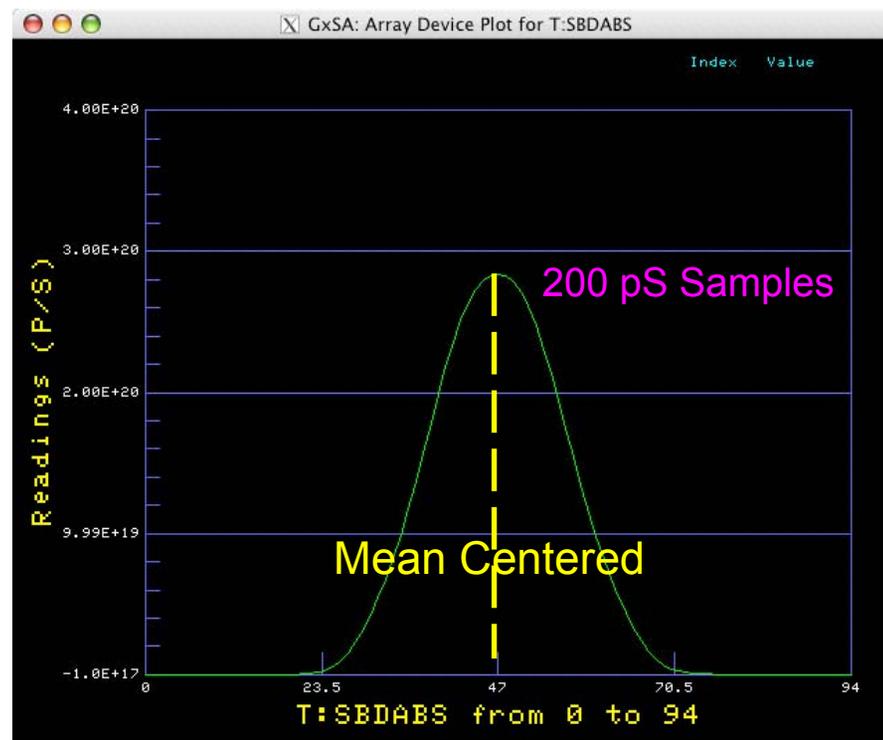
TeV SBD Bunch Signal Data for OAC

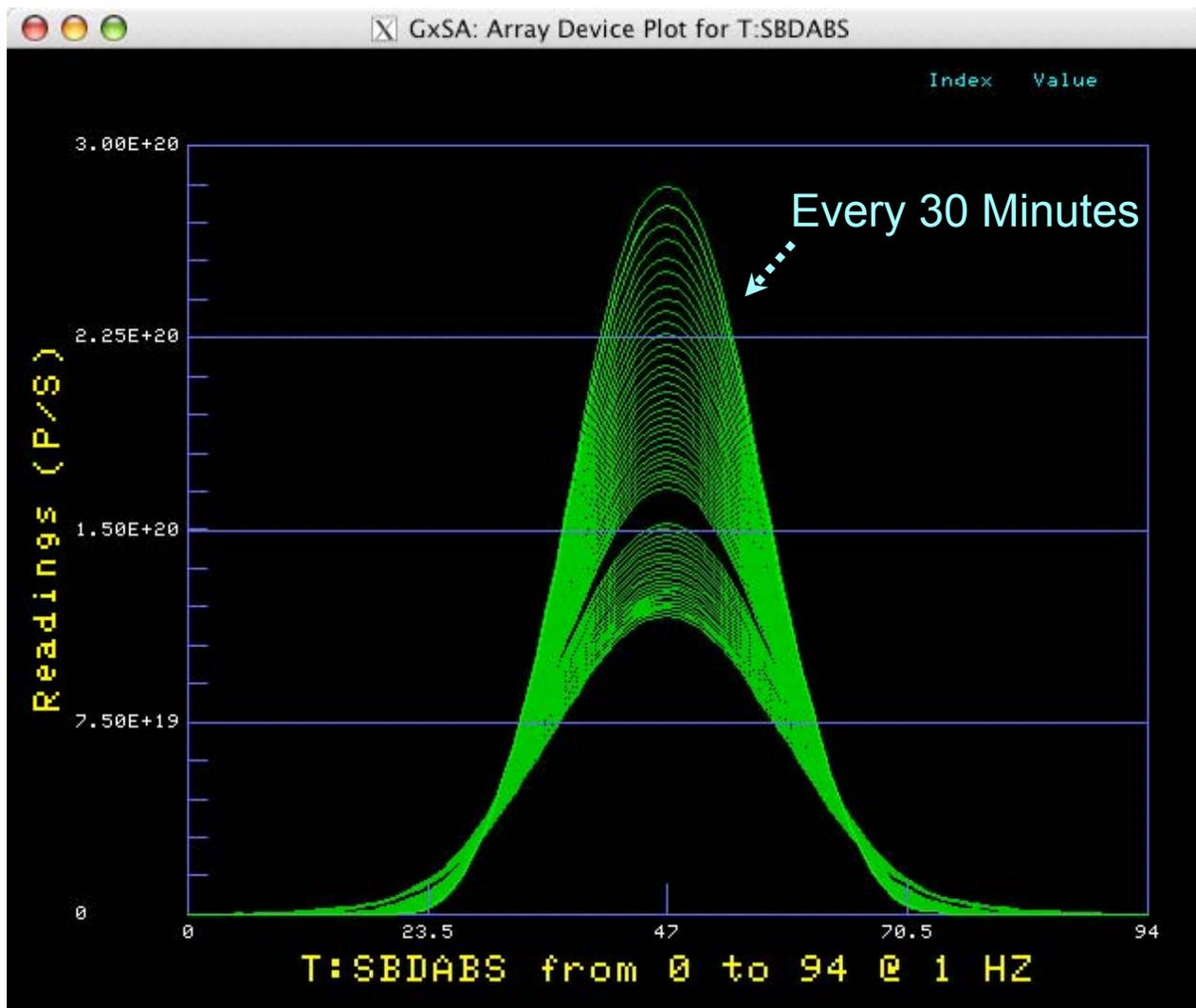


Proton Aggregate Bunch Signal Data



pbar Aggregate Bunch Signal Data





Successive (each 30 minutes) antiproton aggregates;
The hole is when the RF tripped and the bunchlength jumped