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

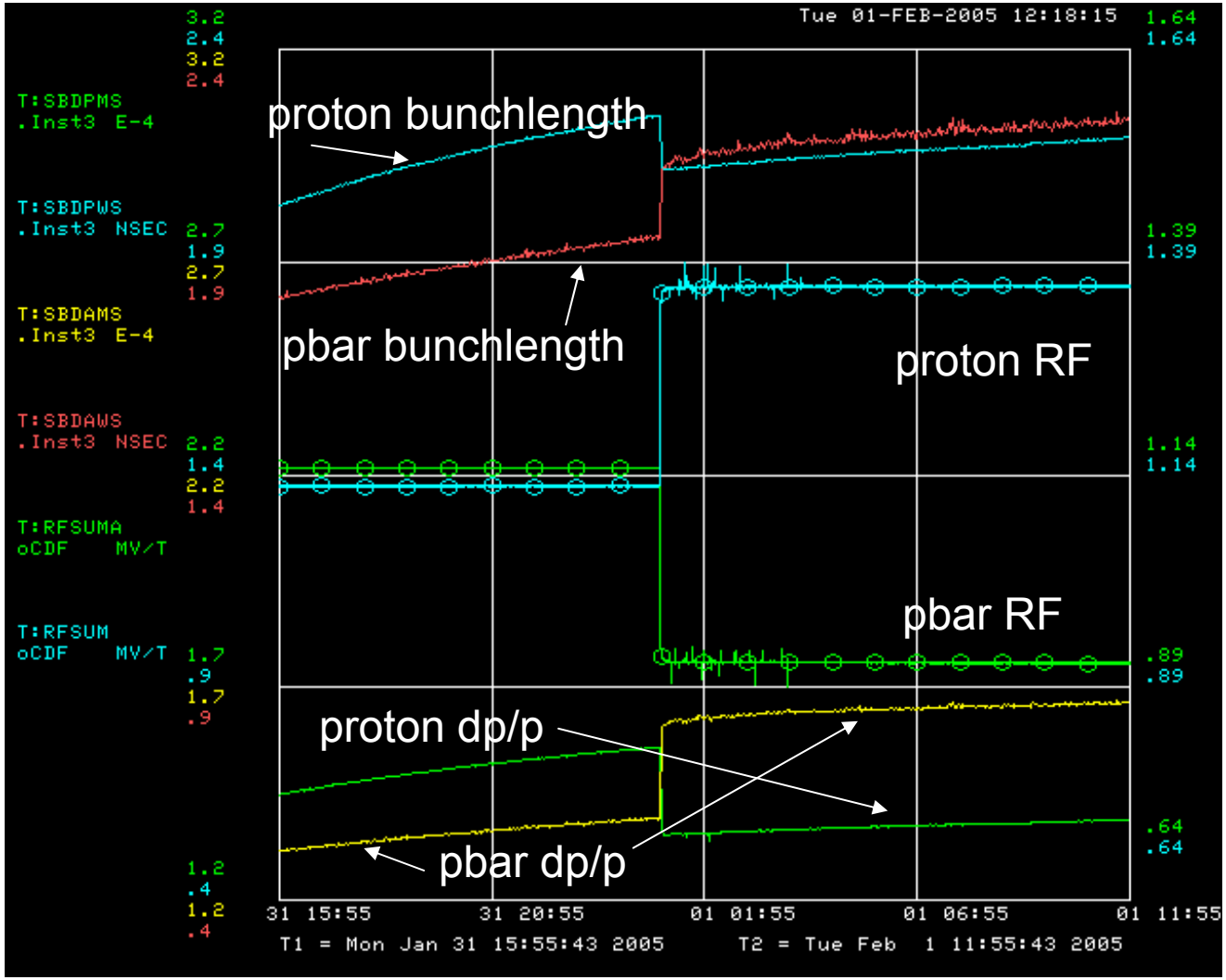
T:SBDPMS[0 - 36] - Momentum spread for protons {rms}

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

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

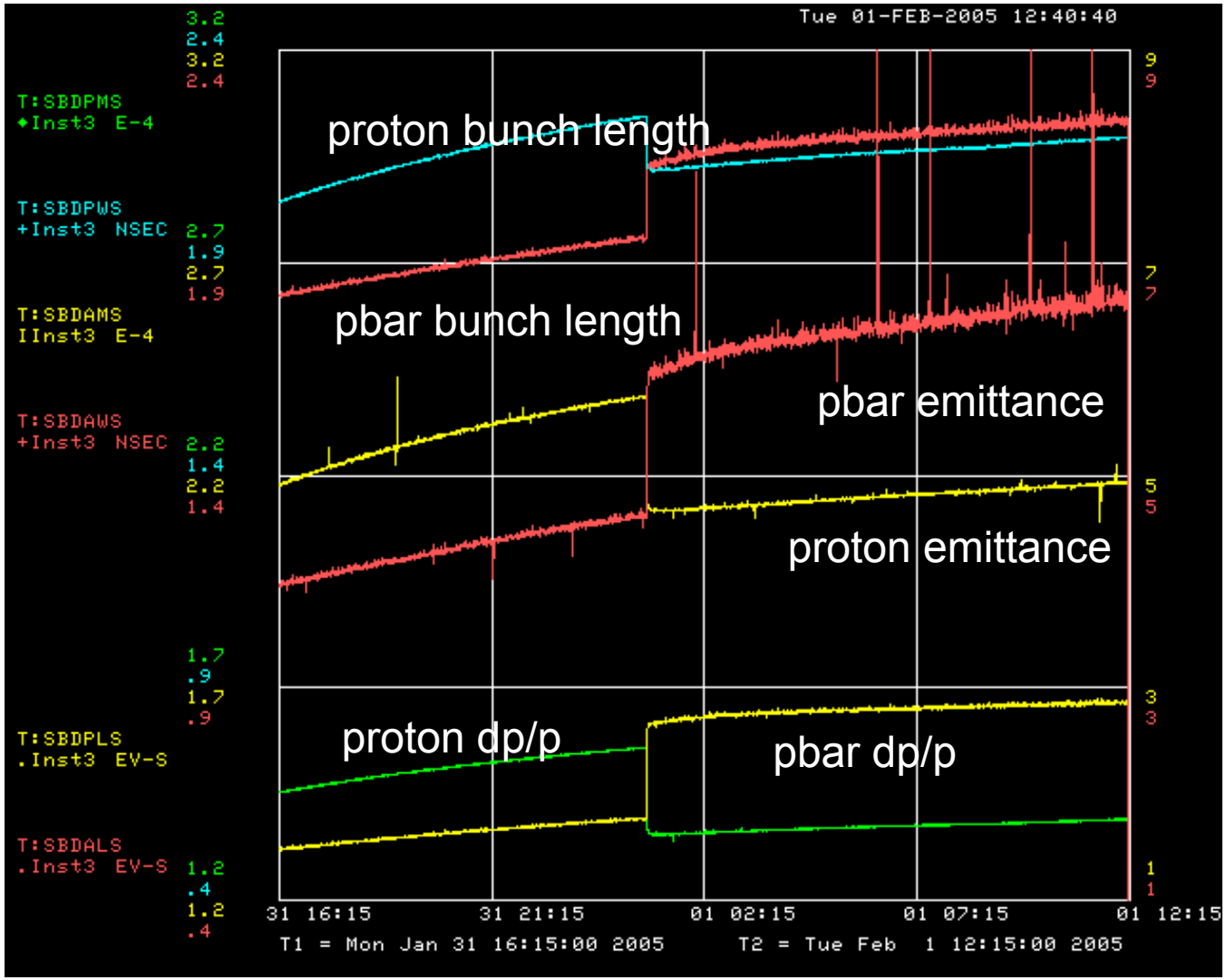
T:SBDALS [0 - 36] - Longitudinal emittance (%?) for antiprotons

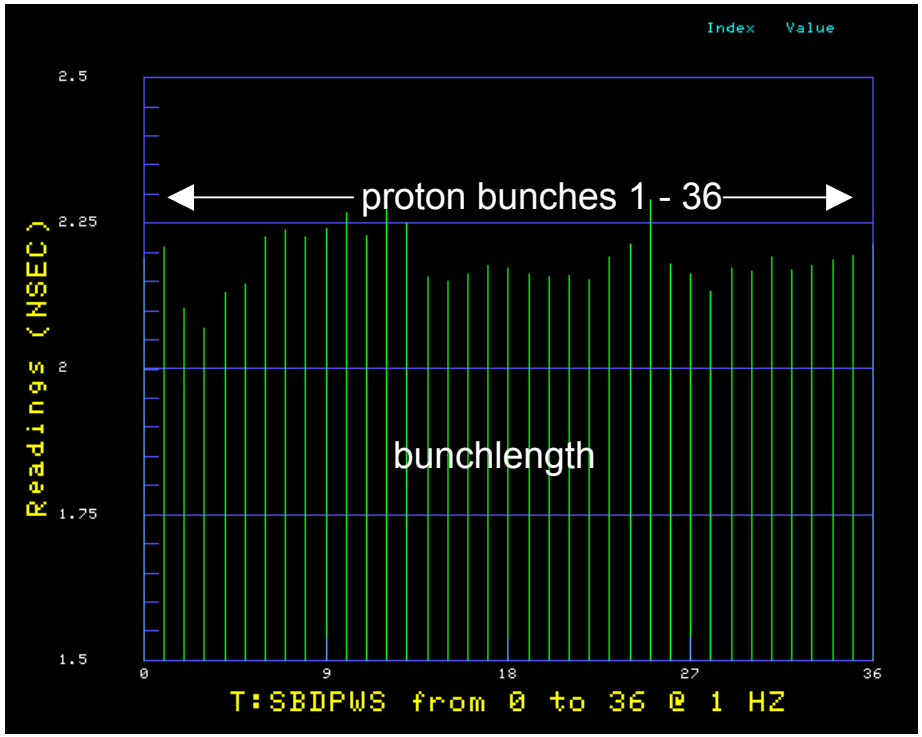
0 is the aggregate bunch; 1 - 36 are the individual bunches

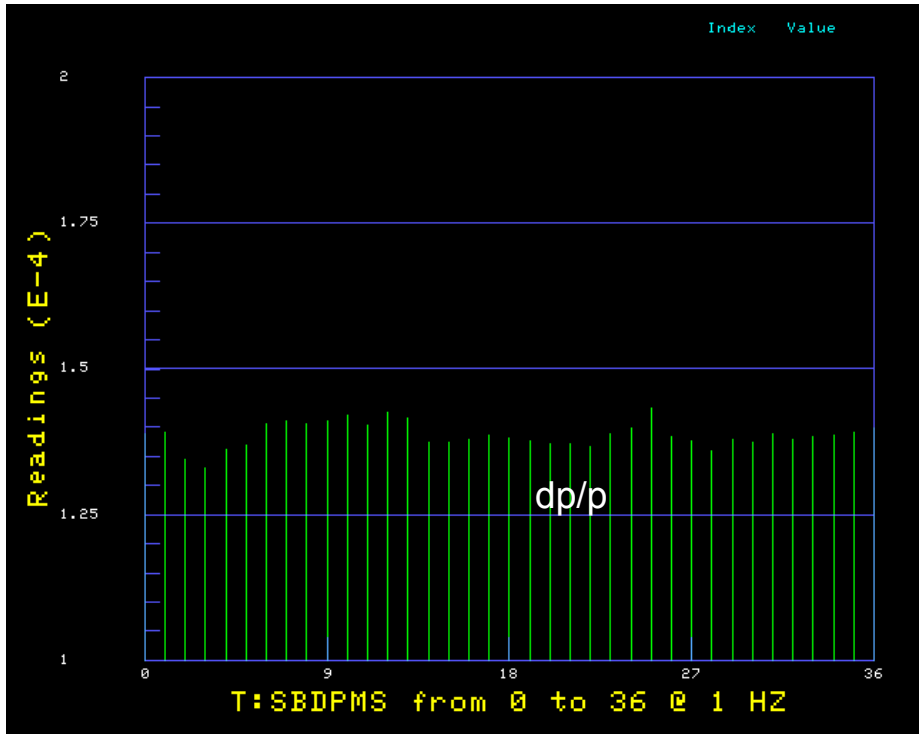


Tevatron SBD outputs for store 3953, including RF trip

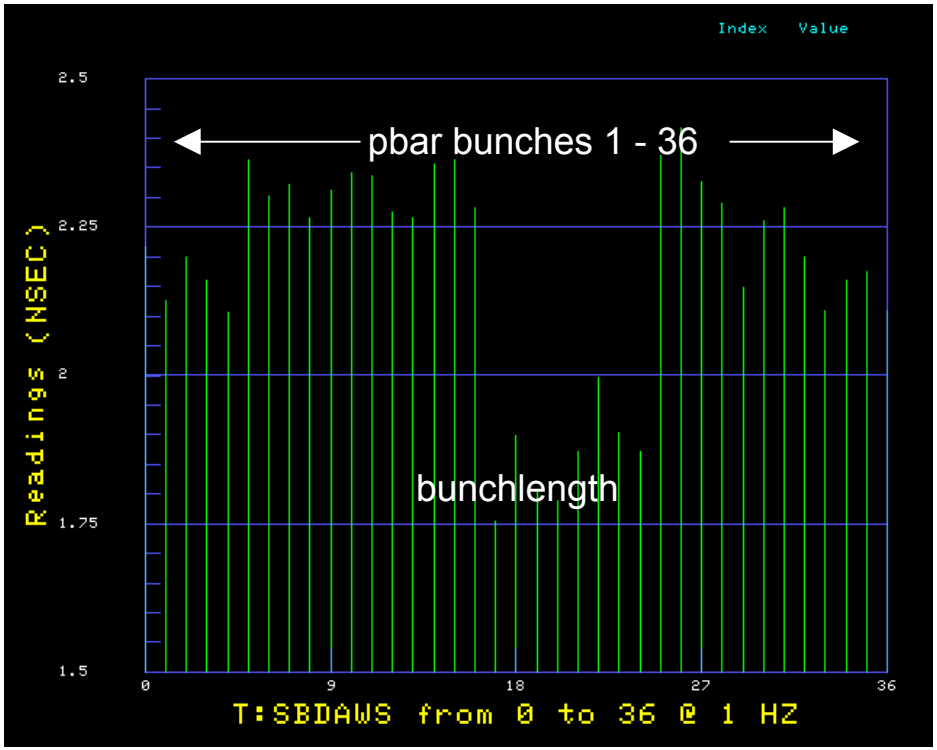
SBD parameters during store 3953

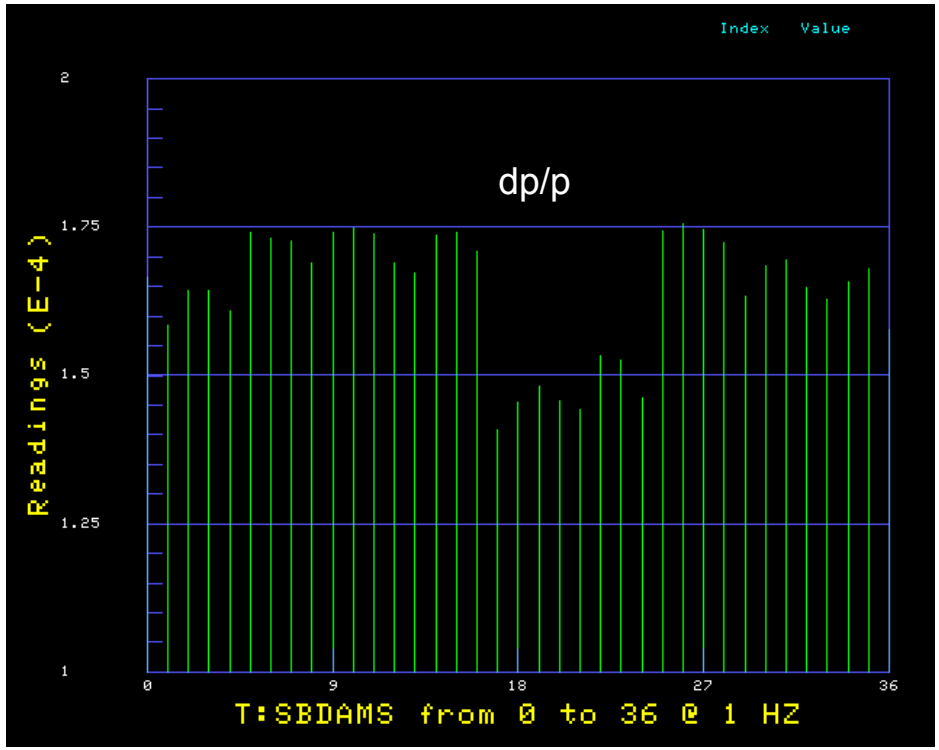






Proton bunchlength and momentum spread arrays





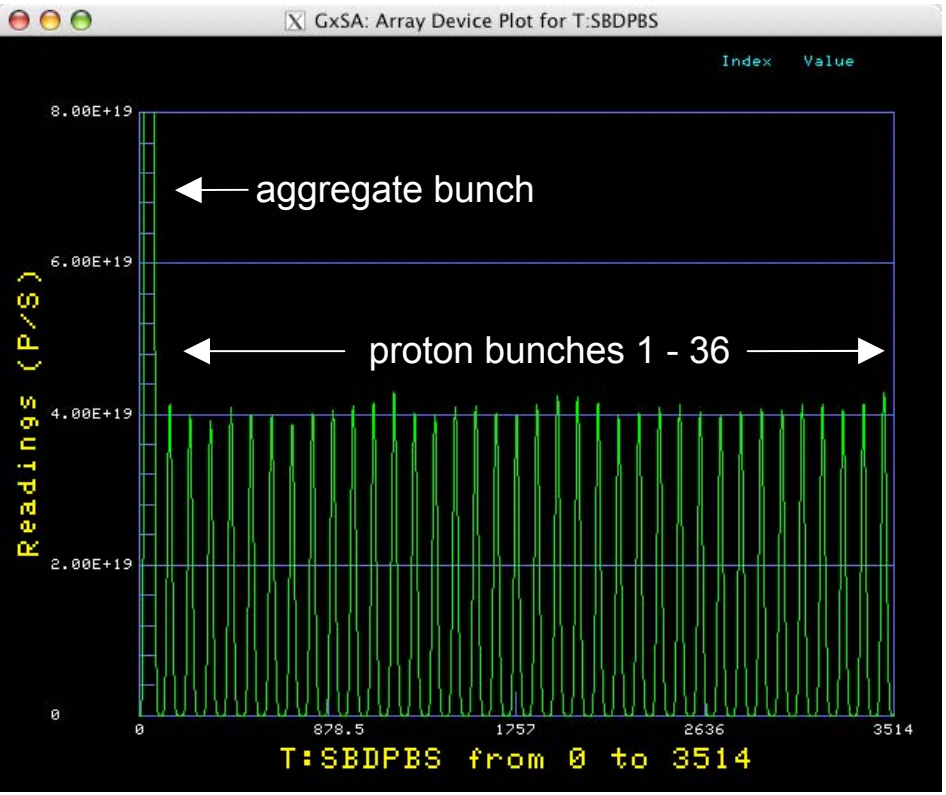
Antiproton bunchlength and momentum-spread arrays

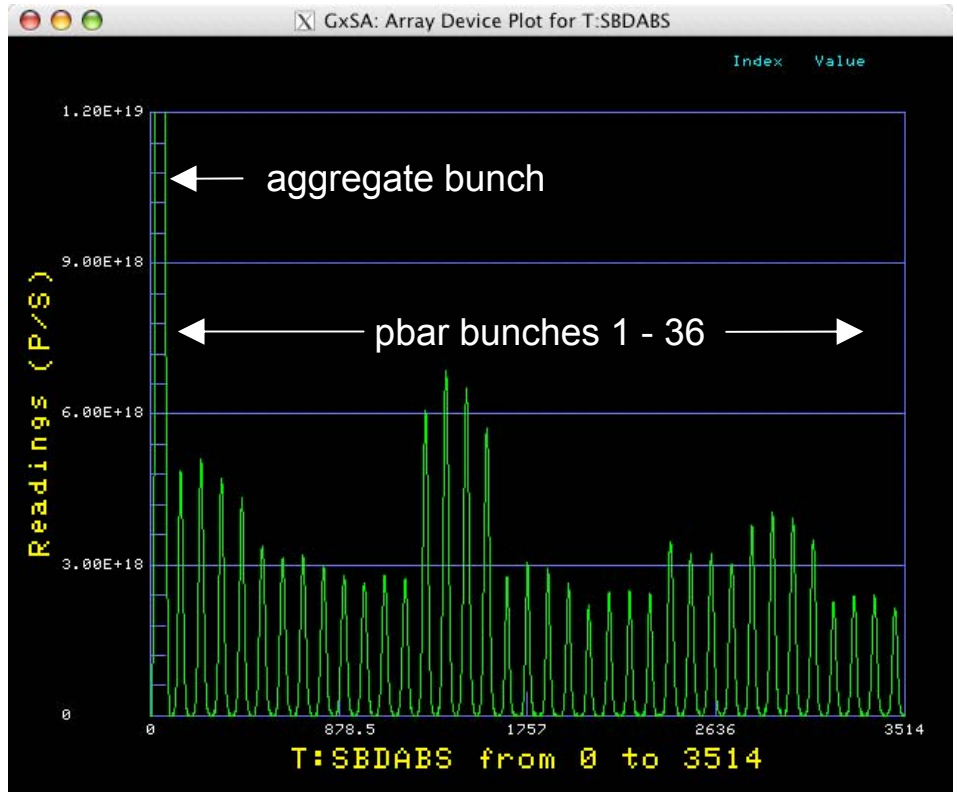
Preparations for the OAC:

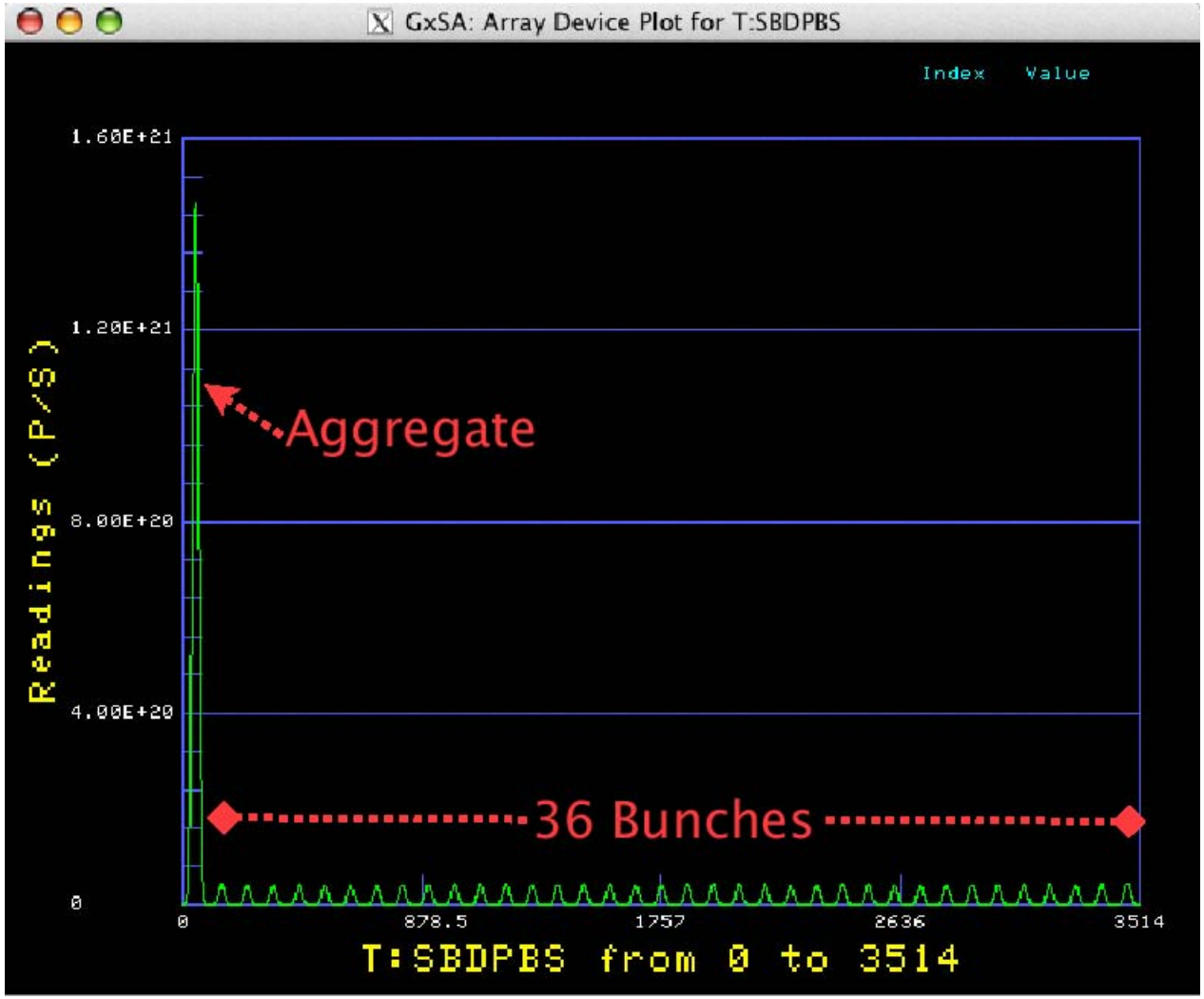
Step 1: Transfer bunch profile data from TeV SBD via ACNET

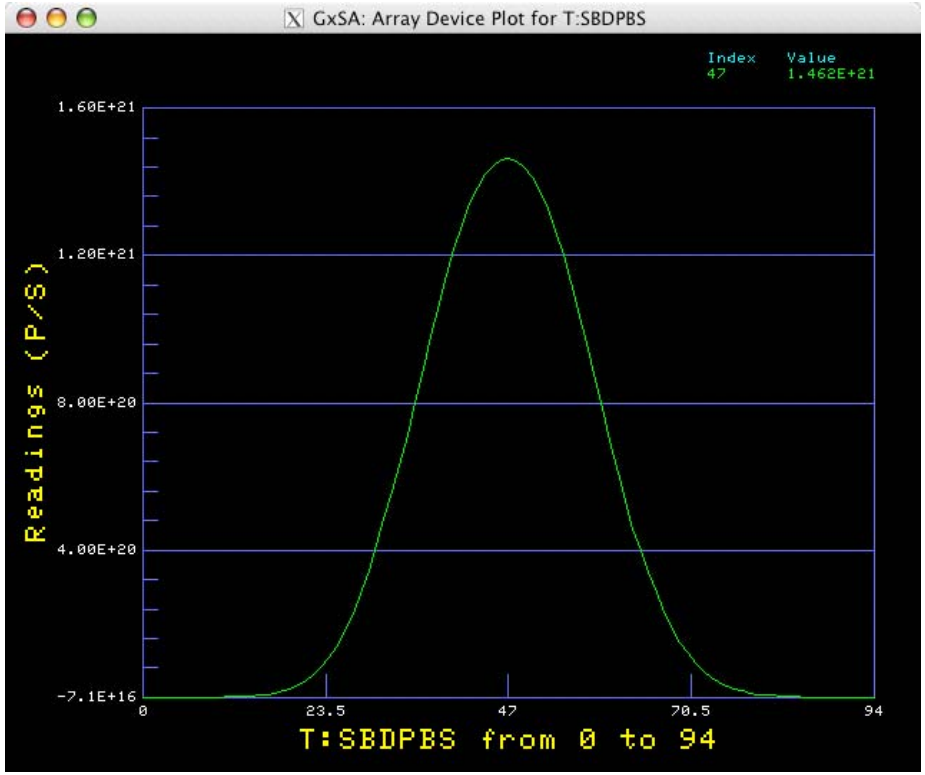
T:SBDPBS[0 - 3514] is array of 95 5 GHz samples for 37 proton bunches

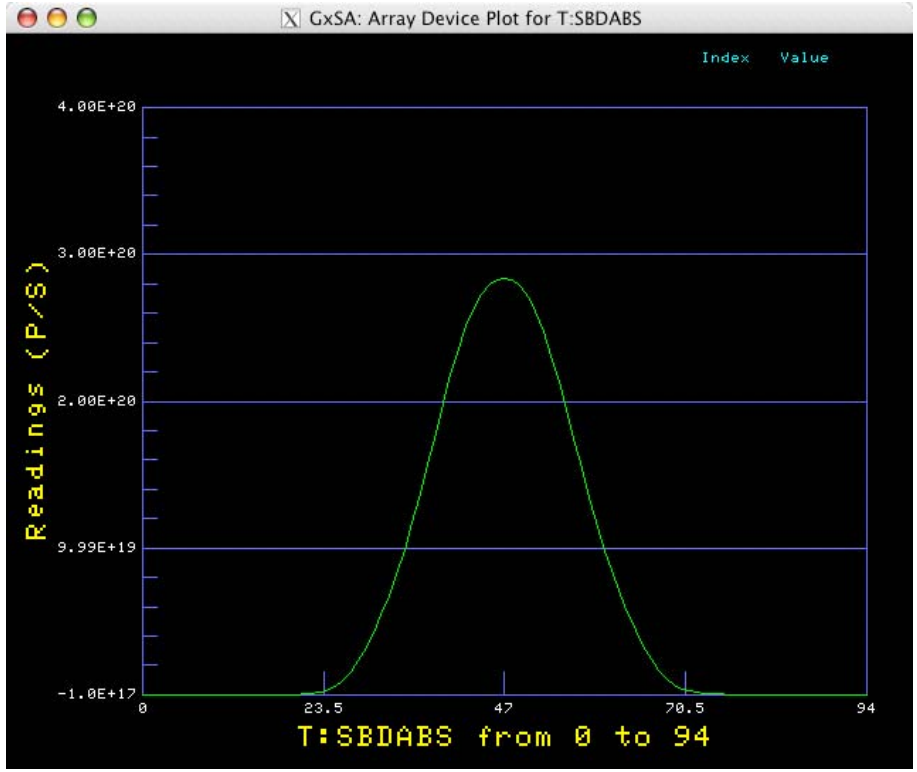
T:SBDABS[0 - 3514] is array of 95 5 GHz samples for 37 antiproton bunches





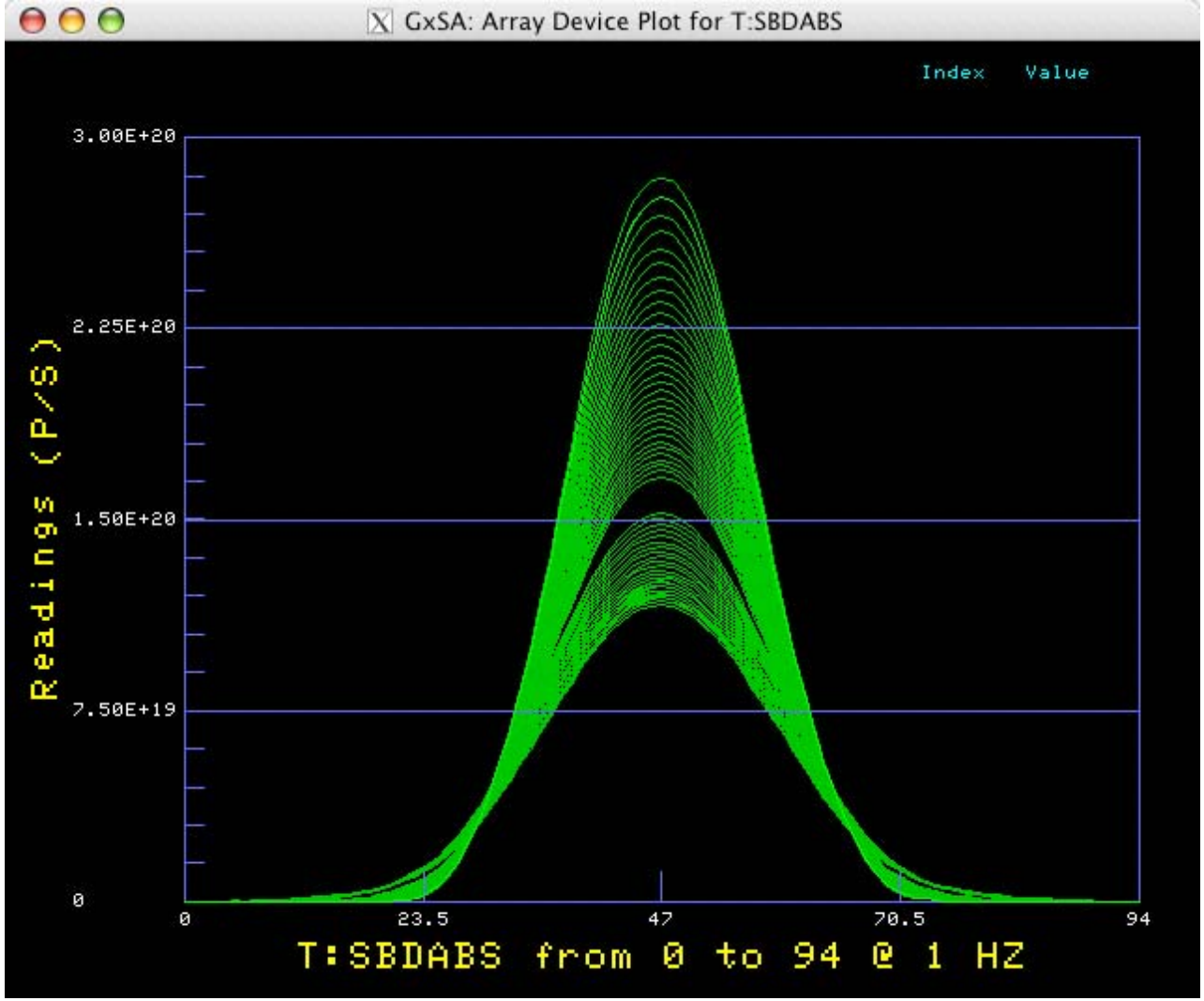

GxSA: Array Device Plot for T:SBDPBS
Index
Value
1.60E+21
1.20E+21
8.00E+20
4.00E+20
0
Readings (P/S)
Aggregate
36 Bunches
0
878.5
1757
2636
3514
T:SBDPBS from 0 to 3514



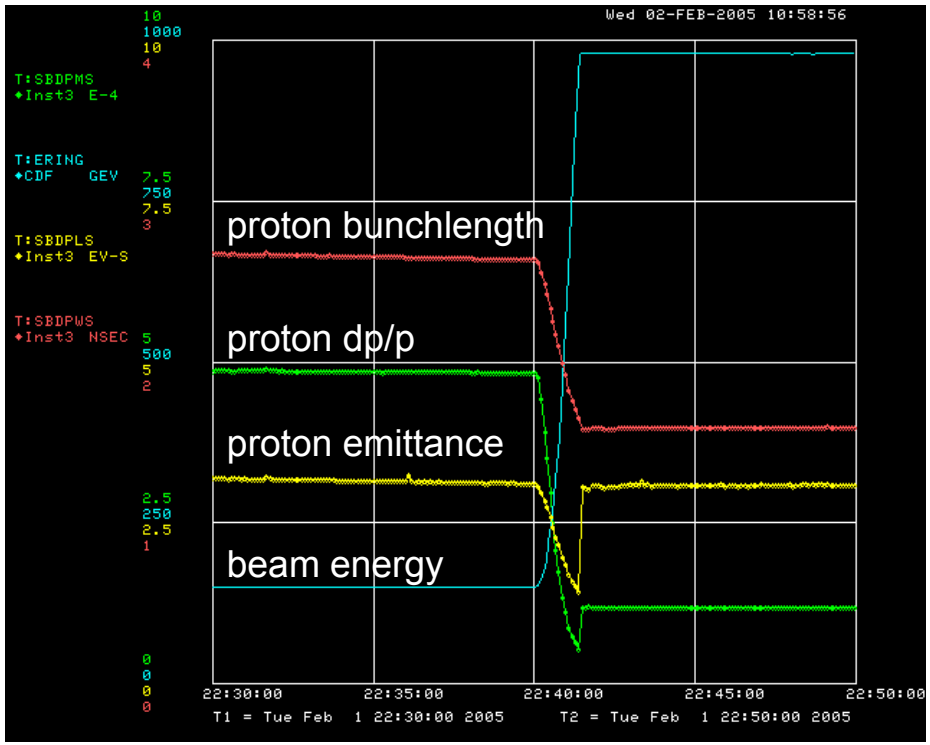


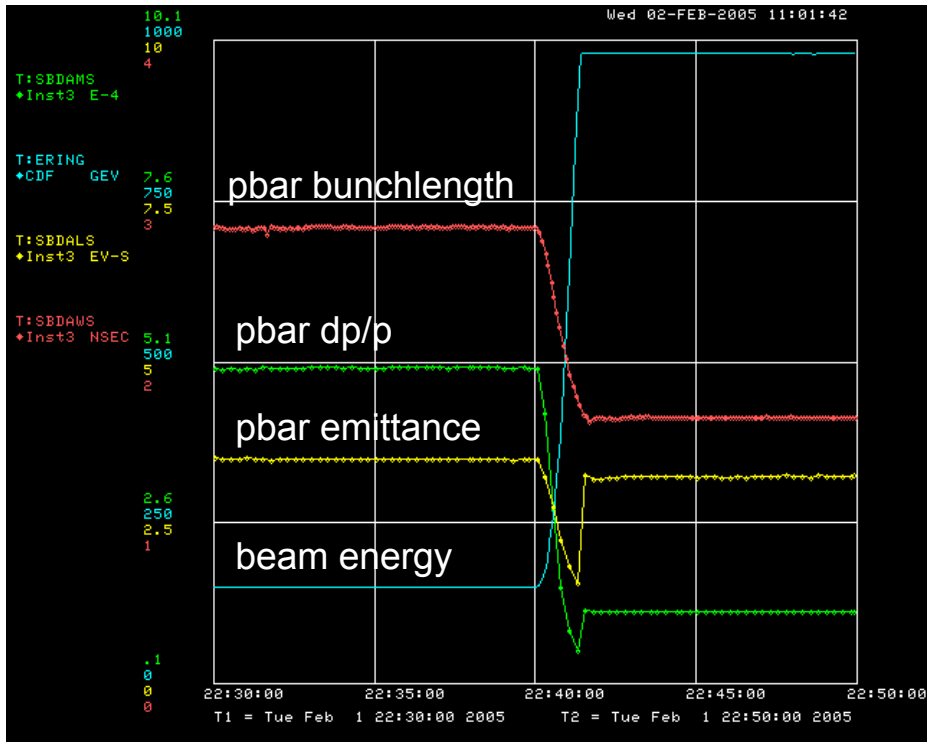
Proton aggregate bunch

Antiproton aggregate bunch



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





Plots of emittance and momentum spread before and after ramp