

BBLR @100 GeV

R. Calaga, W. Fischer, G. Robert-Demoliaz, May 27, 2009

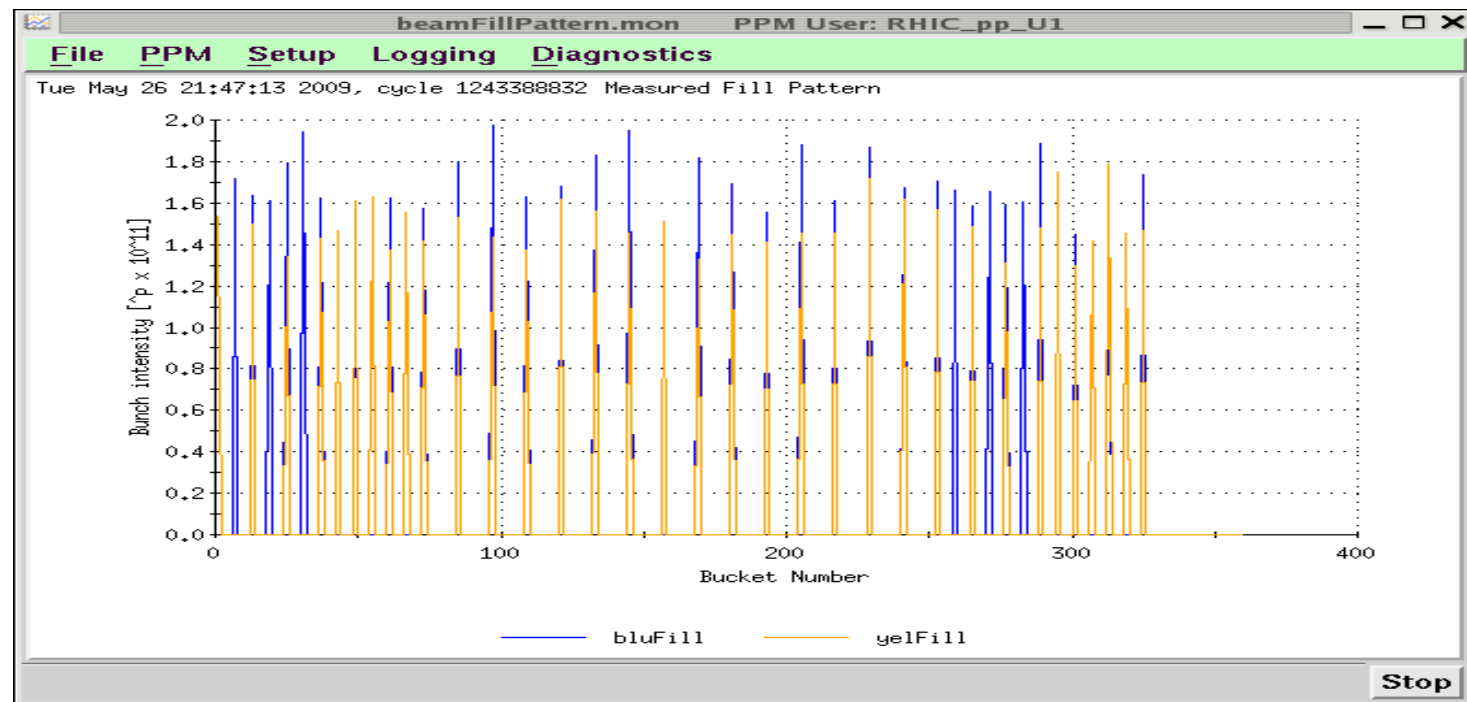
Experiments @100 GeV:

36 x 36 bunches pattern (6 non-colliding bunches, $\sim 1.7 \times 10^{11}$ p/bunch)

Yellow: Tunes {0.695, 0.692}, Chroms {-1.5, 1.0}, ϵ {49?, 19} μm

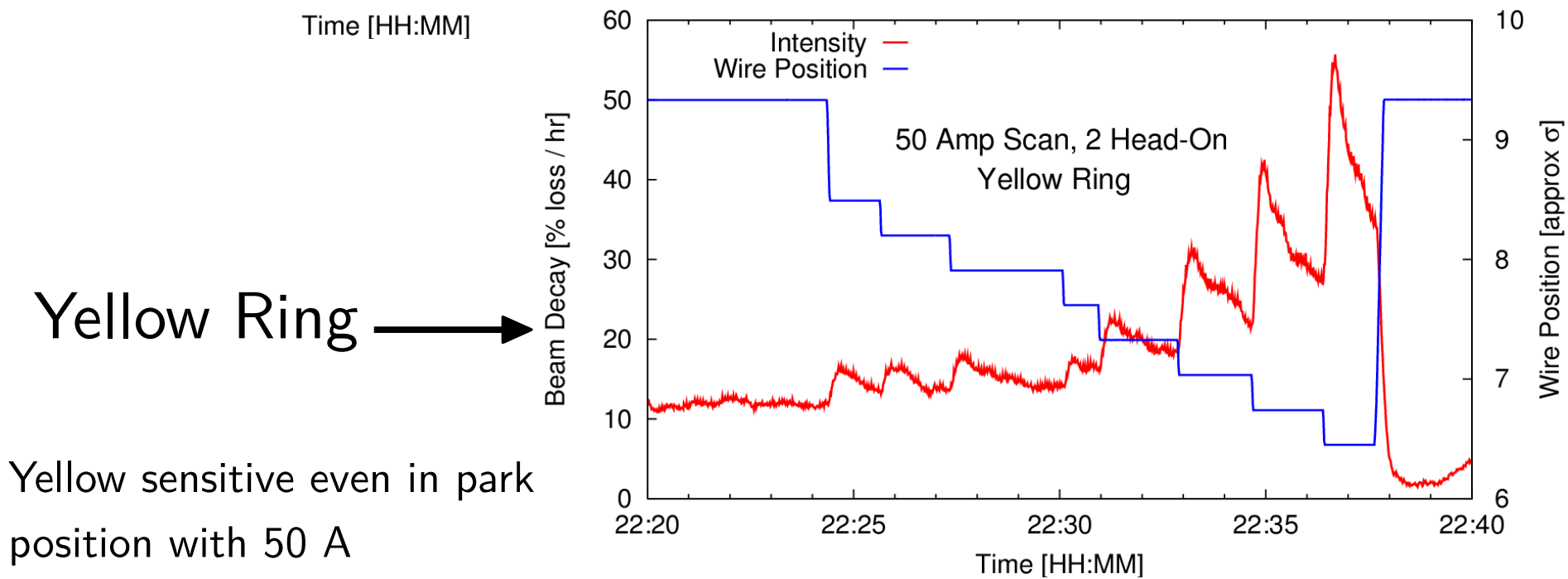
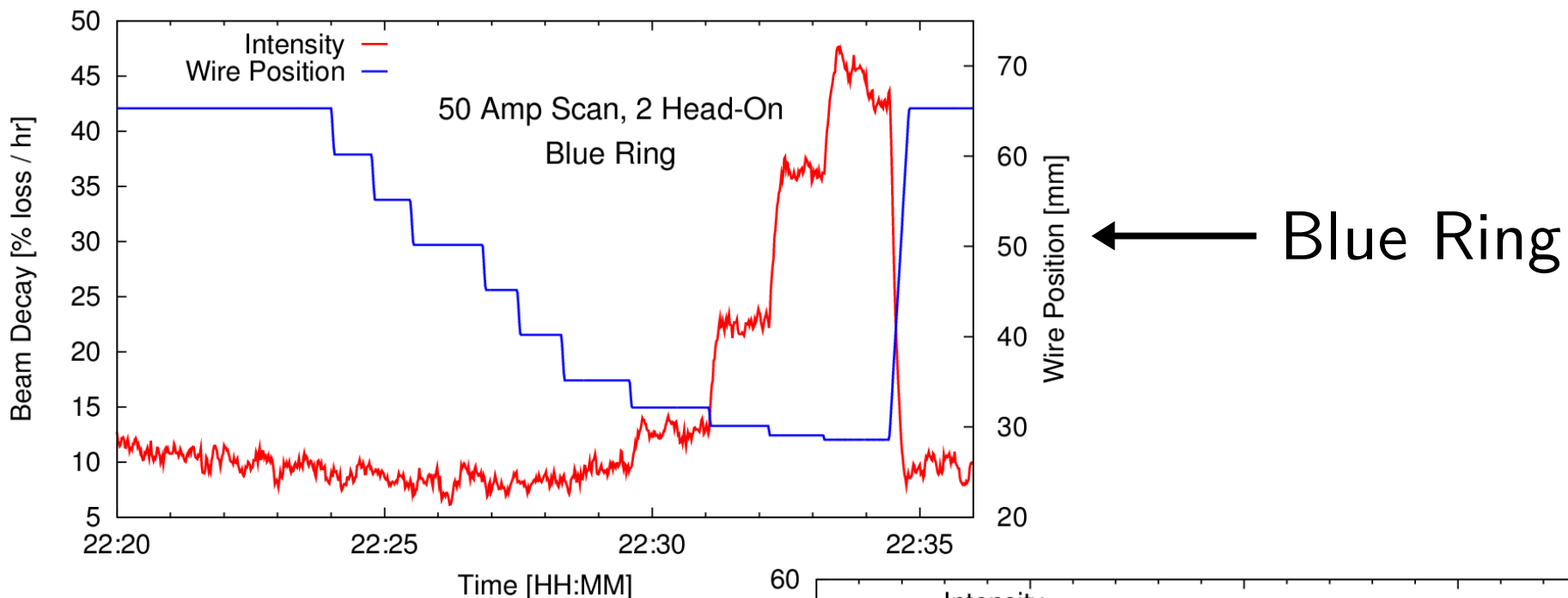
Blue: Tunes {0.691, 0.688}, Chroms {2.3, -1.4}, ϵ {?, 25} μm

2 hrs: BBLR wire with head-on (50 A) & long-range compensation (5 A)

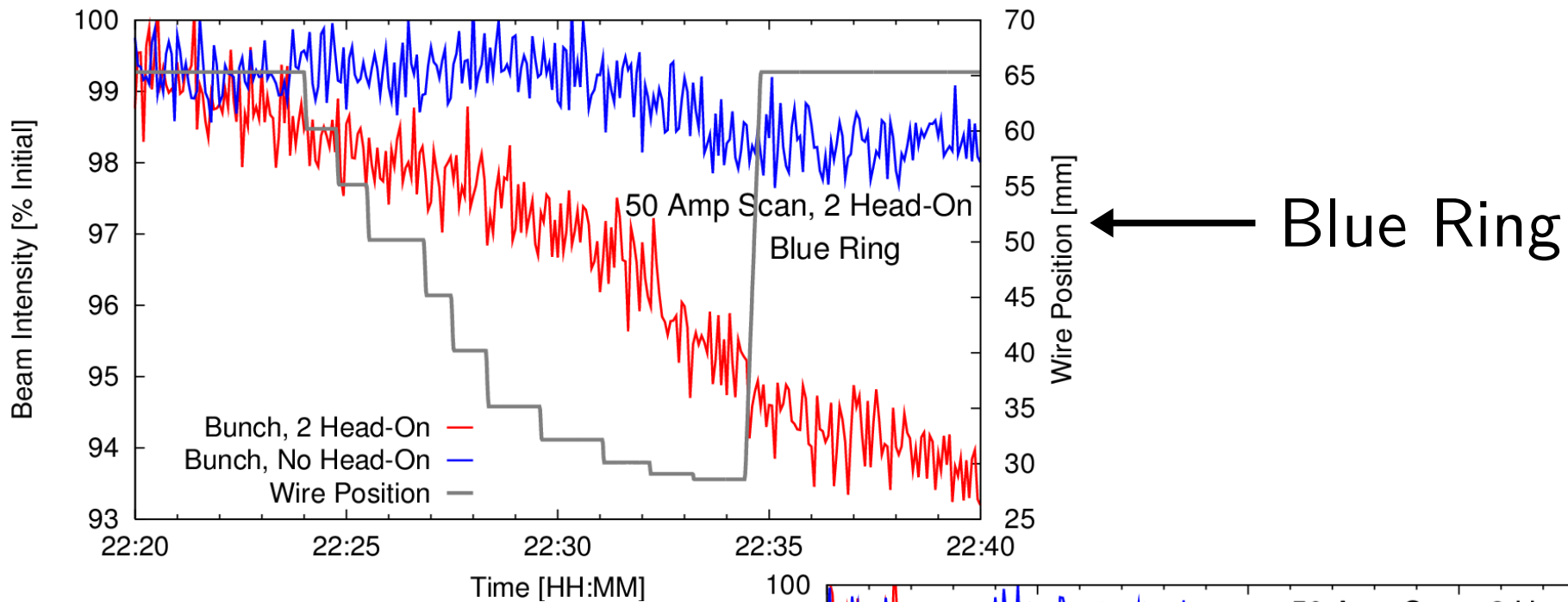


Ack: Operations

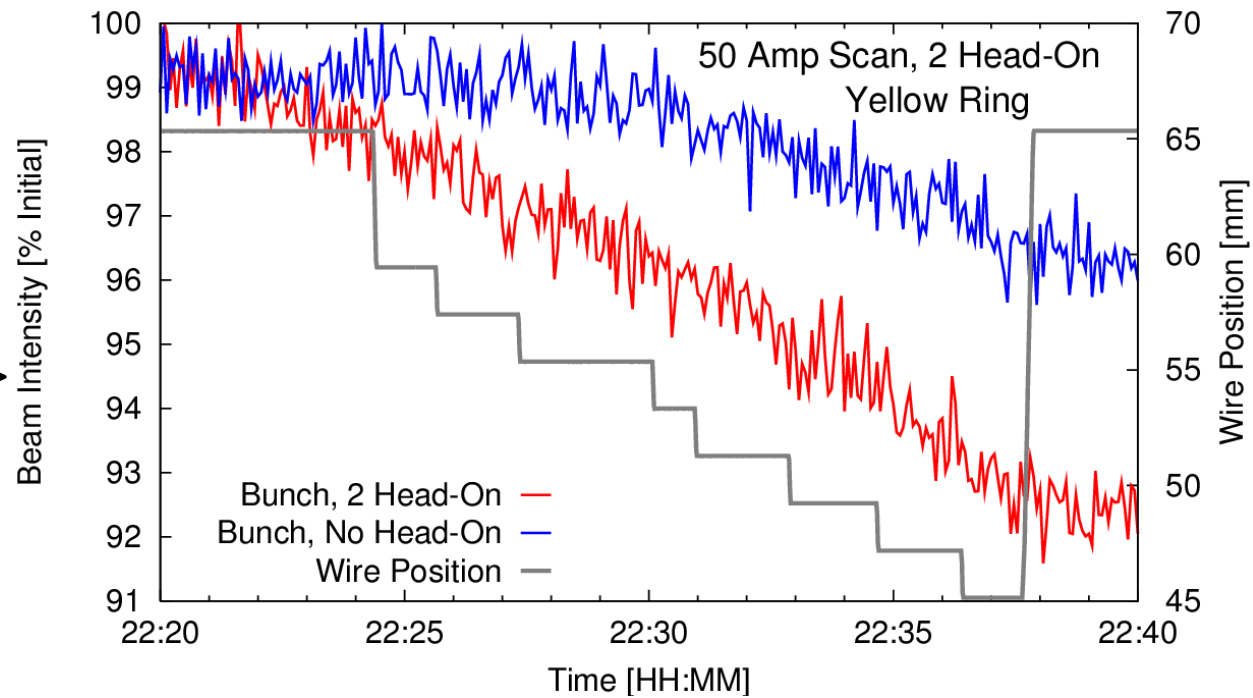
50 Amp Wire Scans, 2 Head-On



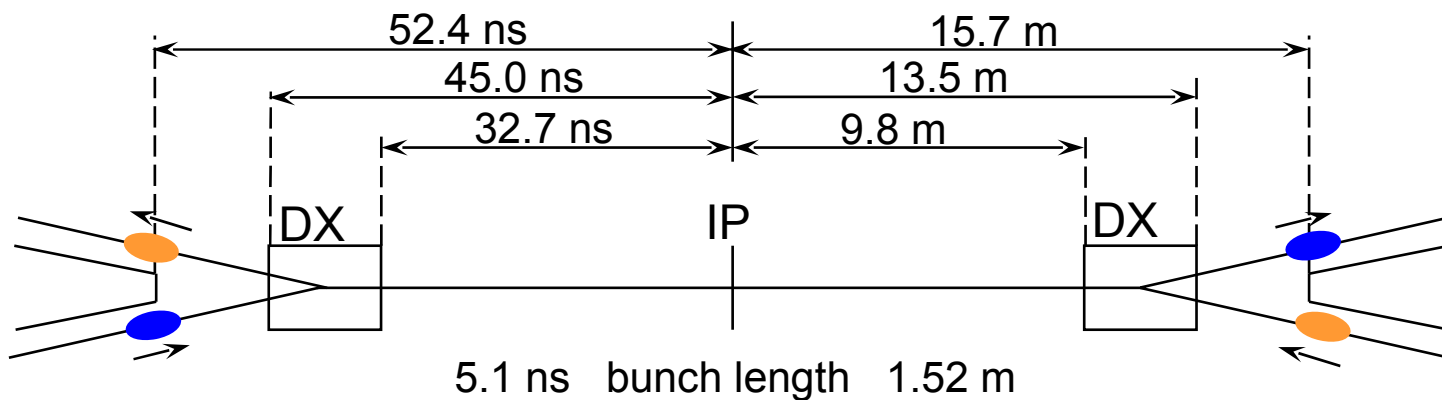
Head-On Vs. No Head-On Bunches, 50 A



Yellow Ring



Long Range "Compensation"



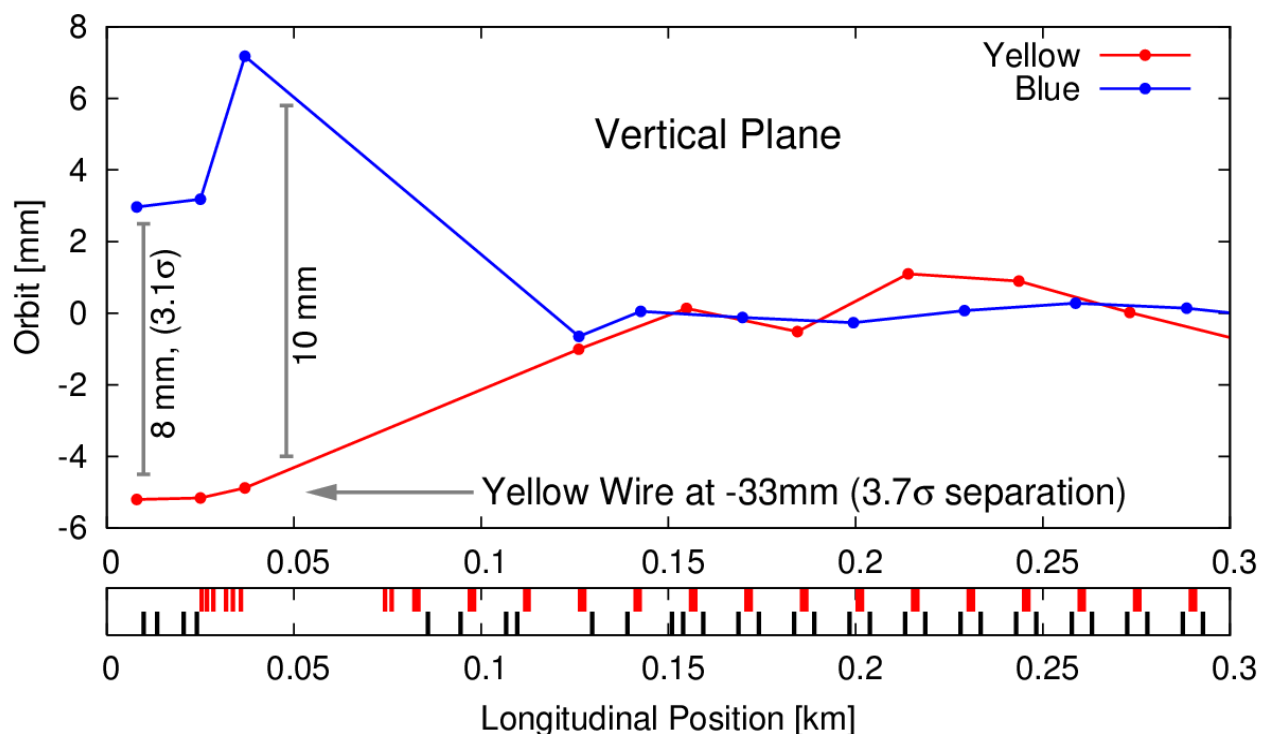
$\beta_y \sim 1.45$ km (wire position)

$\beta_y \sim 170$ m (LR position)

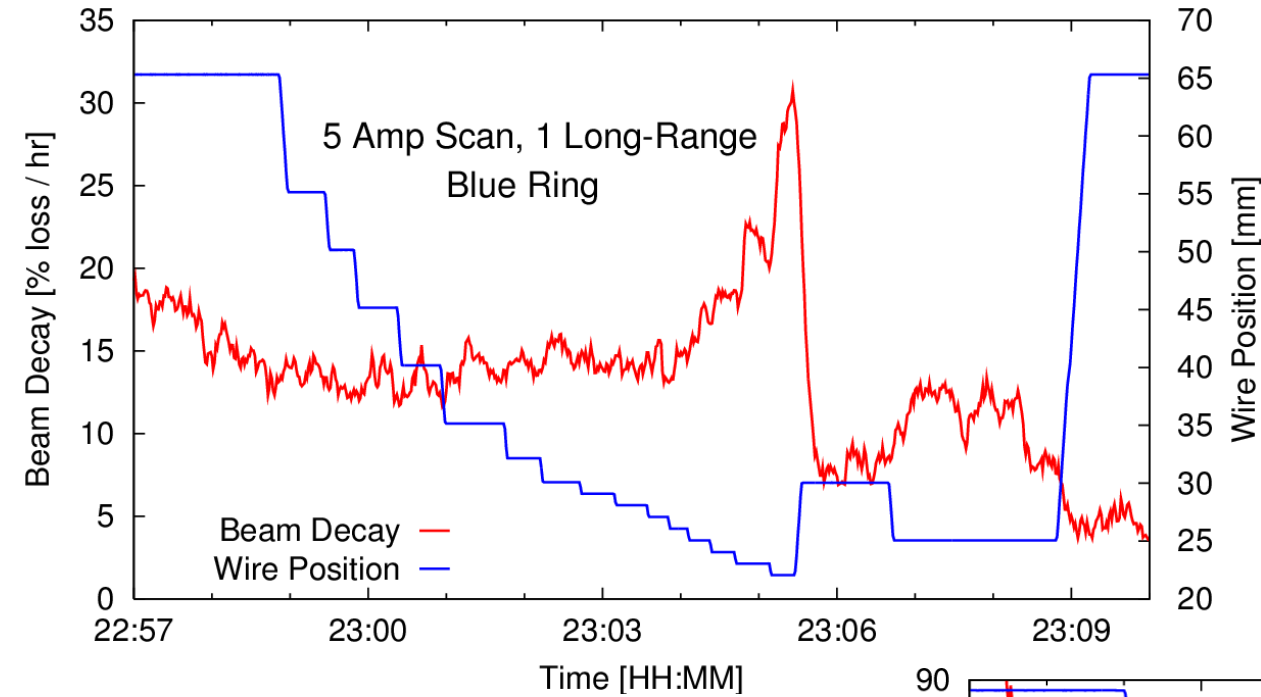
$\epsilon_y \sim 4.2$ μm

LR separation $\sim 3.1 \sigma$

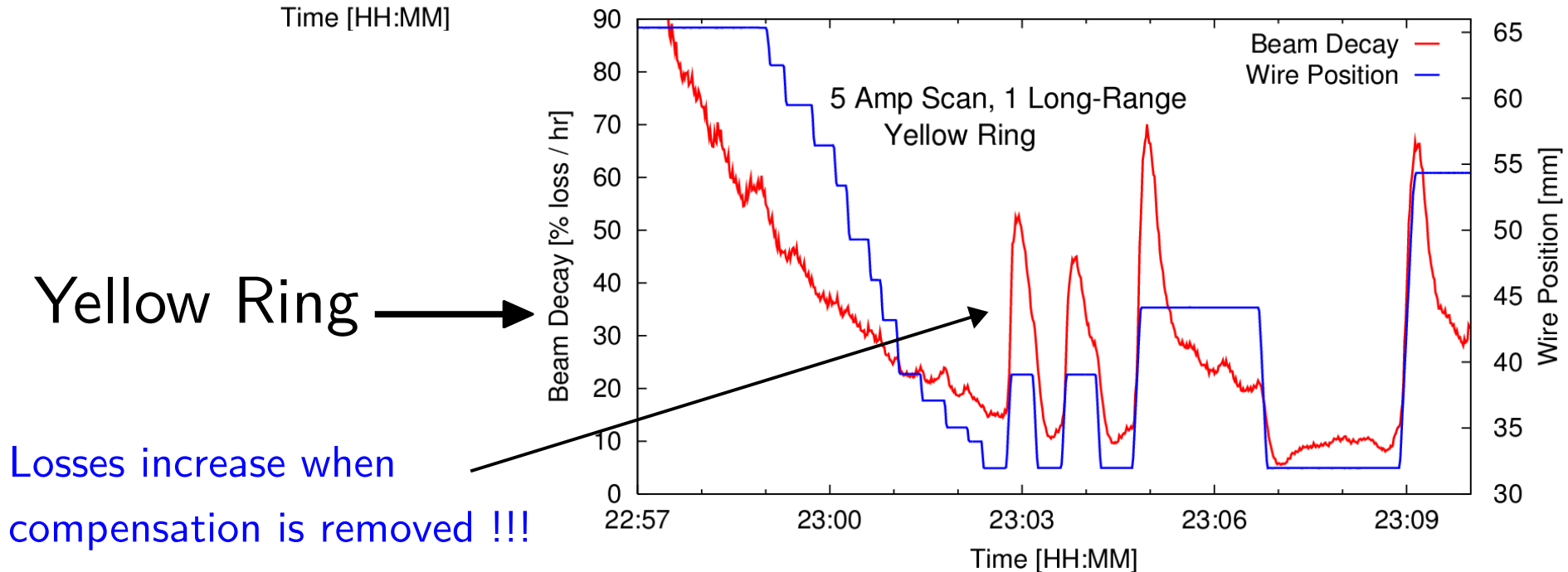
Beam \leftrightarrow wire separation $\sim 3.7 \sigma$



Long Range "Compensation" - Yellow



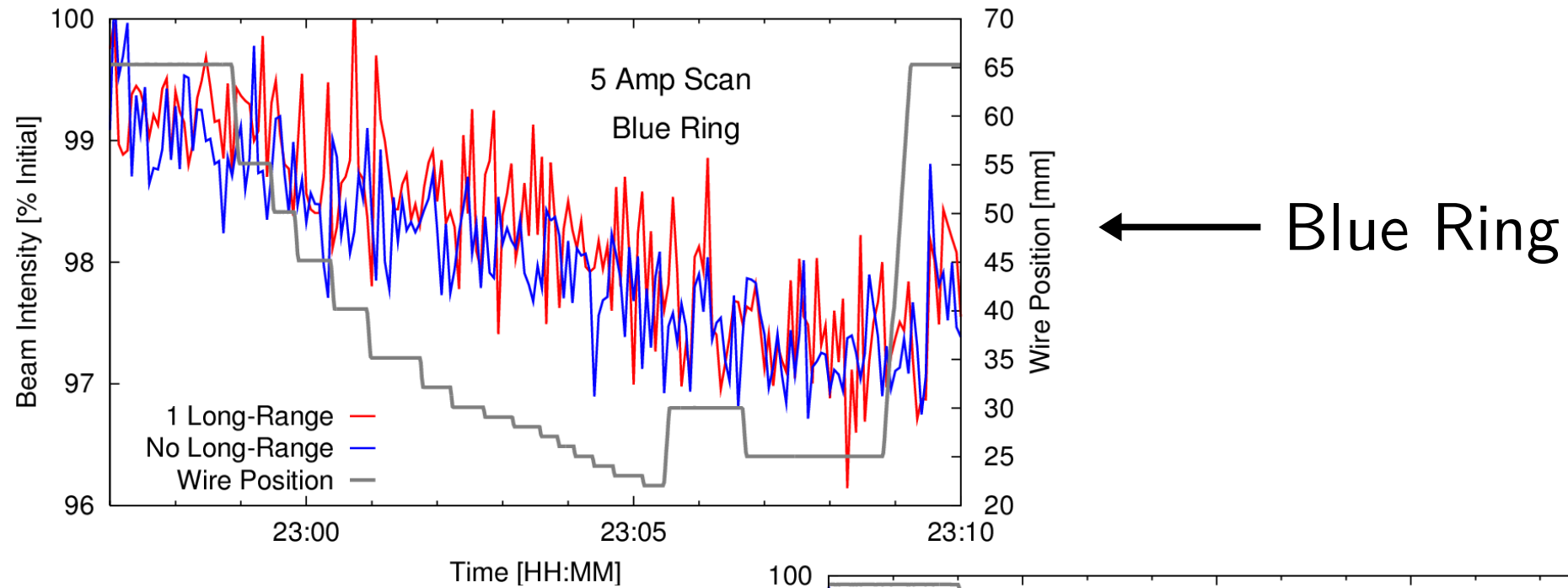
← Blue Ring
No visible effect



Yellow Ring →

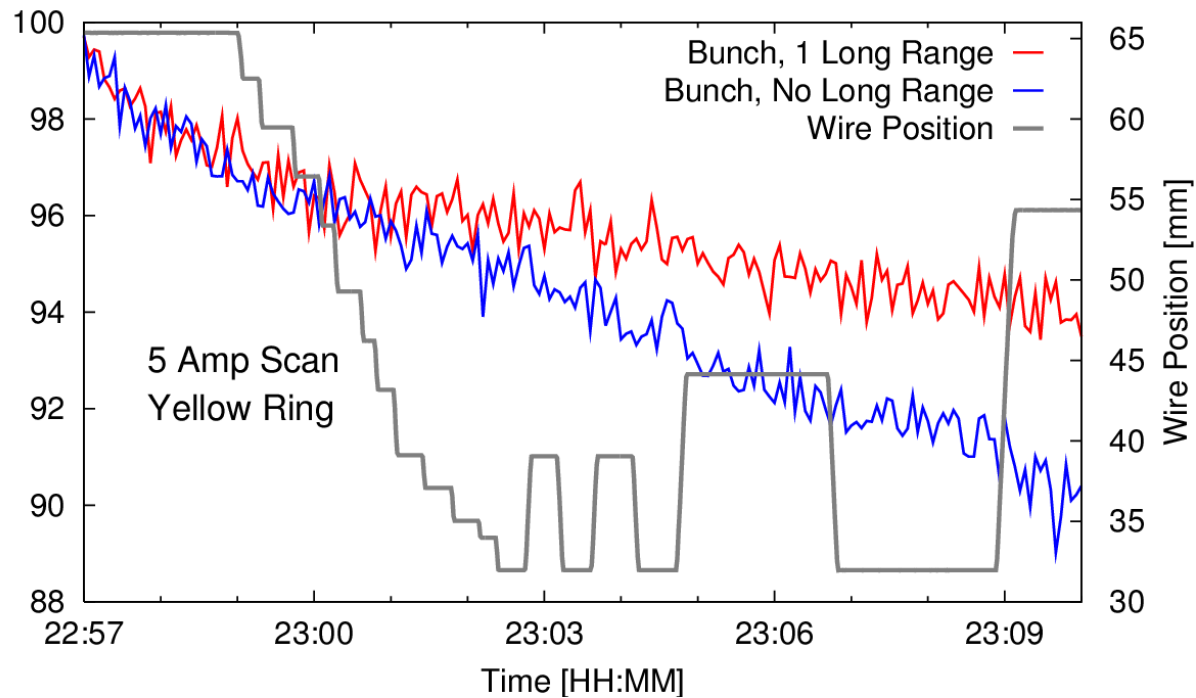
Losses increase when compensation is removed !!!

Bunches With/Without Long Range

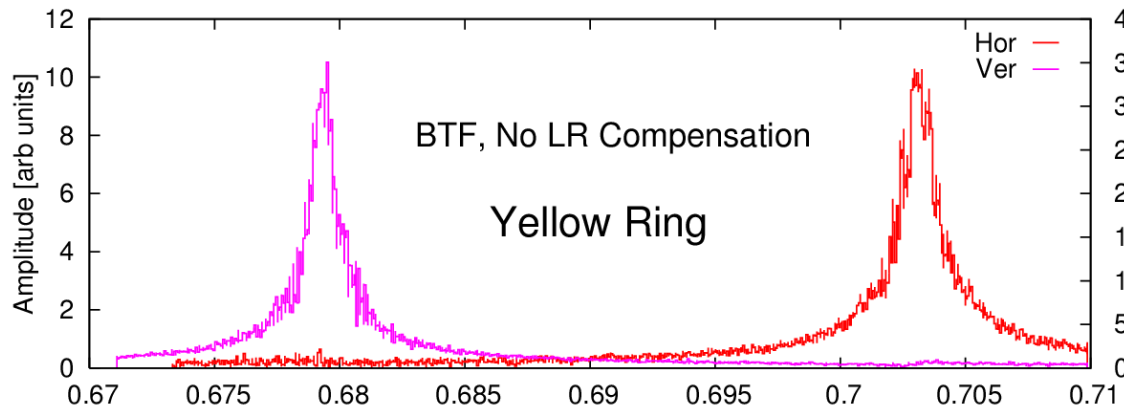


Yellow Ring →

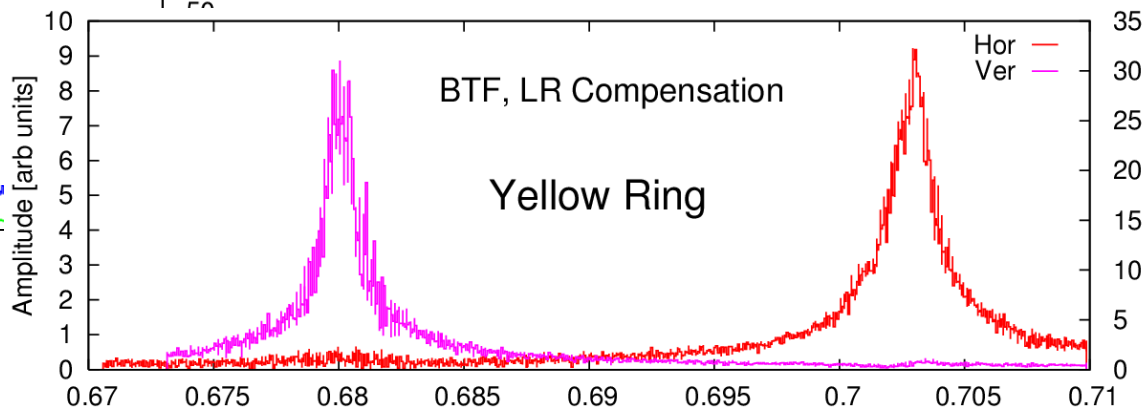
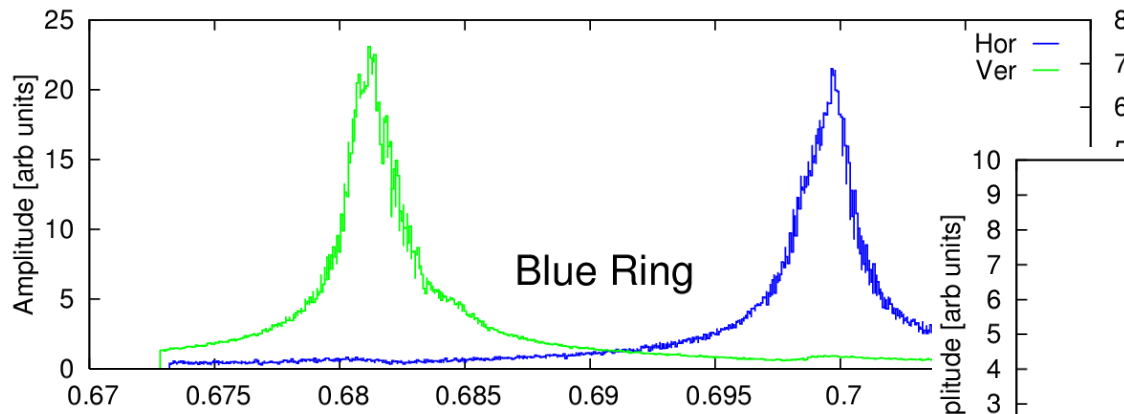
Bunches without LR suffer more losses due to the wire !!!



Tunes, With/Without Compensation



← No Compensation



Wire Compensation →

No observable tune changes in Yellow Ring.

