



Cornell Laboratory for  
Accelerator-Based Sciences  
and Education (CLASSE)

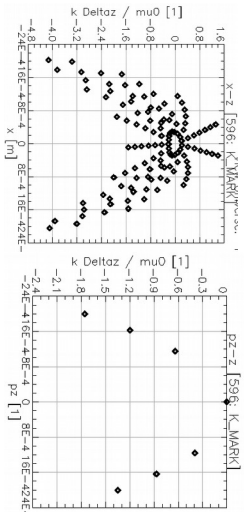
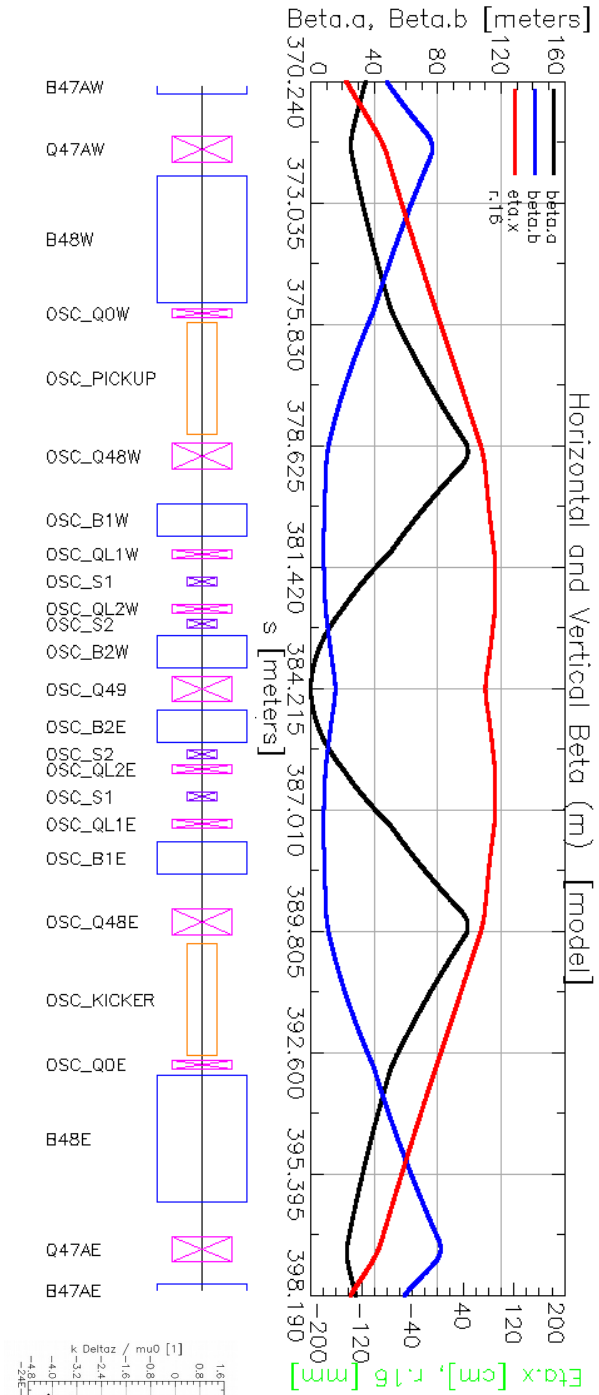
# 0.75 m Bends All

Michael Ehrlichman



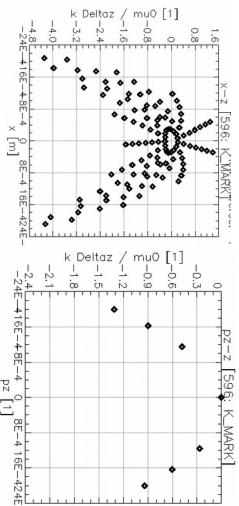
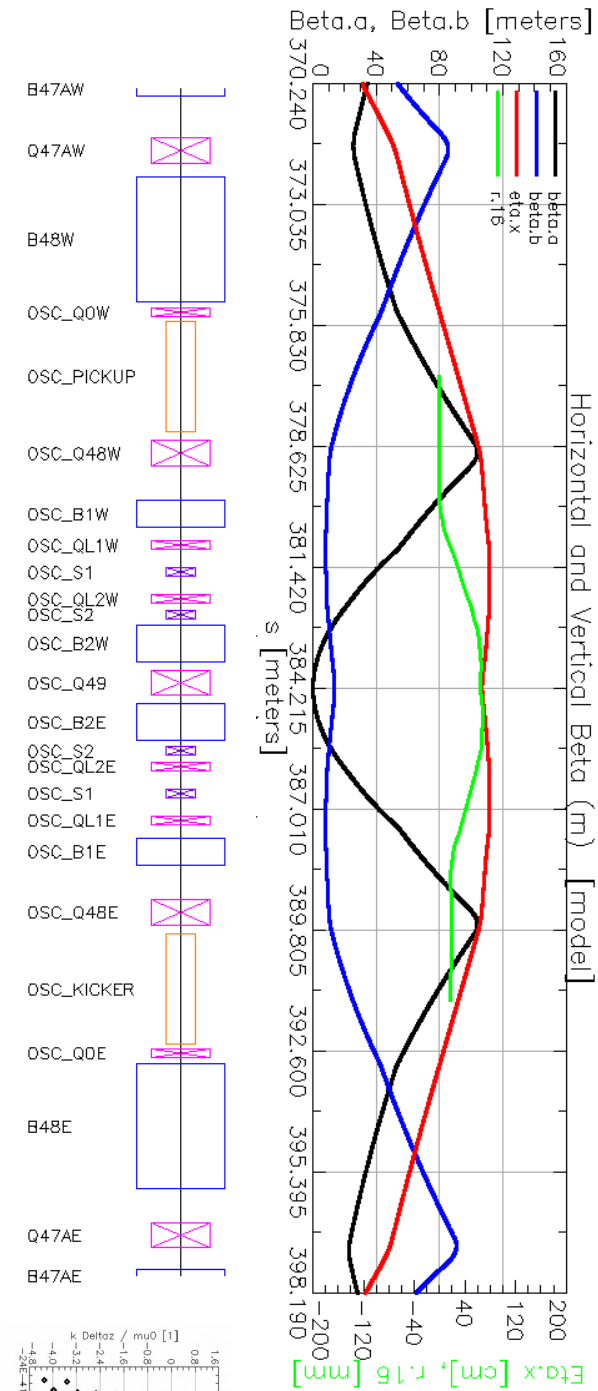
# All bends 0.75 m

## All 0.75 m bends



$$\begin{aligned} \epsilon_x &= 2.6 \text{ nm} \\ \sigma_p &= 4.0 \cdot 10^{-4} \\ \sigma_{osc,\epsilon x} &= 25 \text{ nm} \\ \sigma_{osc,\sigma p} &= 0.010 \end{aligned}$$

## 0.65 & 0.85 m bends

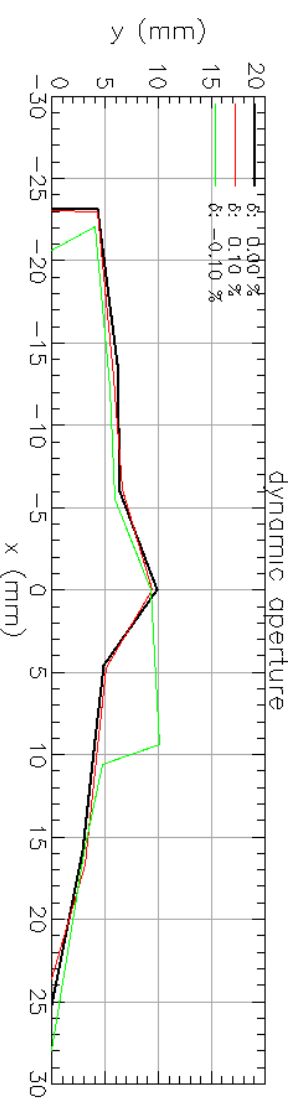
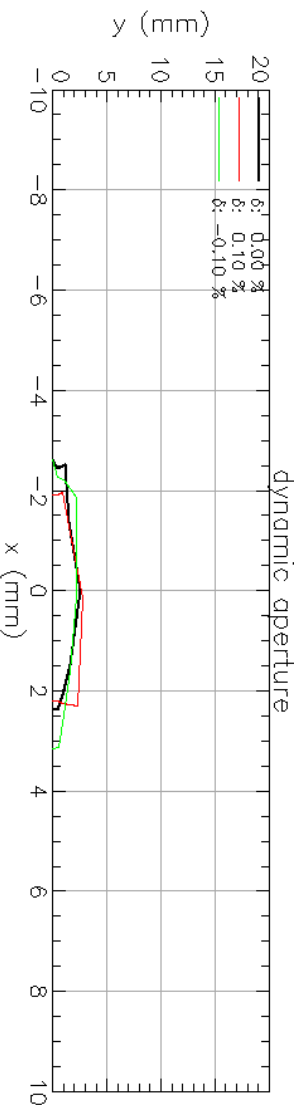


$$\begin{aligned} \epsilon_x &= 2.9 \text{ nm} \\ \sigma_p &= 4.0 \cdot 10^{-4} \\ \sigma_{osc,\epsilon x} &= 25 \text{ nm} \\ \sigma_{osc,\sigma p} &= 0.011 \end{aligned}$$



# Dynamic Aperture

- CRM for chrom +1/+1, then minimization of 1<sup>st</sup> & 2<sup>nd</sup> order RDTs using global & local minimizers.
- With OSC sextupoles on
  - 10.2 m<sup>-2</sup>, 6 m<sup>-2</sup>



- With OSC sextupoles off



# Conclusions

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- OSC bypass with all 0.75 m bends performs as well as 0.65/0.85 m bend design.
- DA with correcting OSC sextupoles is not feasible.
- DA without OSC sextupoles is no problem.