(TT)OSC Bypass:
Various Bypass Delay Lenghts

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Damping distribution (TTOSC)

- Recall sample lengthening metrics:

action: $$\sigma^2_{\Delta s\epsilon} = J\left(\beta_p M_{51}^2 - 2\alpha_p M_{51}M_{52} + \gamma_p M_{52}^2\right)$$

energy: $$\sigma^2_{\Delta sp} = \left(\frac{\Delta p}{p}\right)^2 \underbrace{\left(M_{51}D_p + M_{52}D'_p + M_{56}\right)^2}_{\tilde{M}_{56}}$$

Damping times:

$$\lambda_x = \frac{k\xi_0}{2}\left(M_{56} - \tilde{M}_{56}\right)$$

$$\lambda_s = \frac{k\xi_0}{2}\tilde{M}_{56}$$

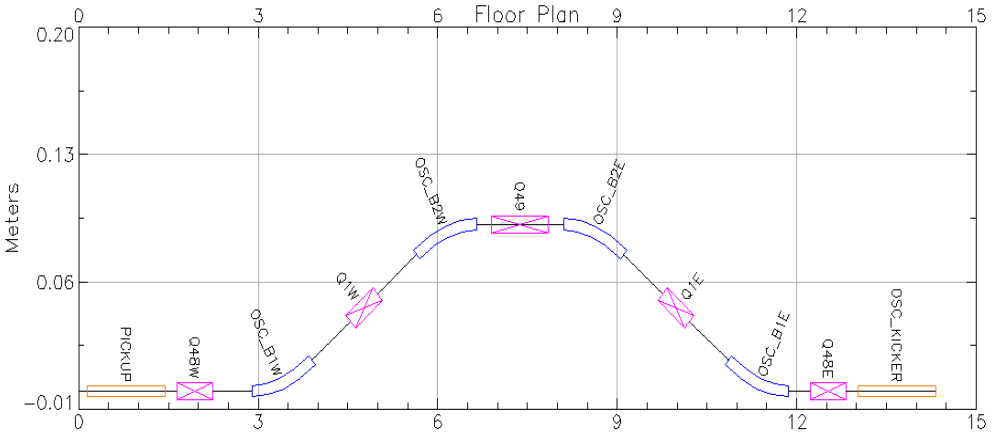
Distribution of Damping:

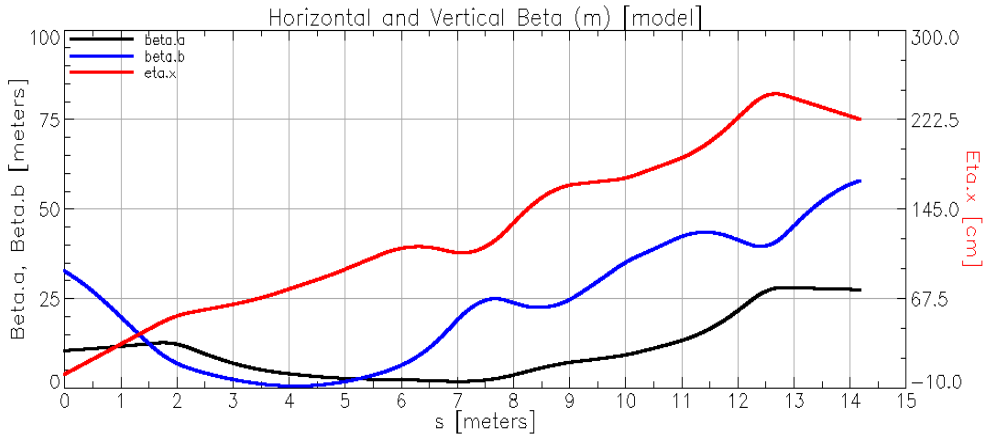
$$\frac{\lambda_x}{\lambda_s} = \frac{M_{56} - \tilde{M}_{56}}{\tilde{M}_{56}}$$

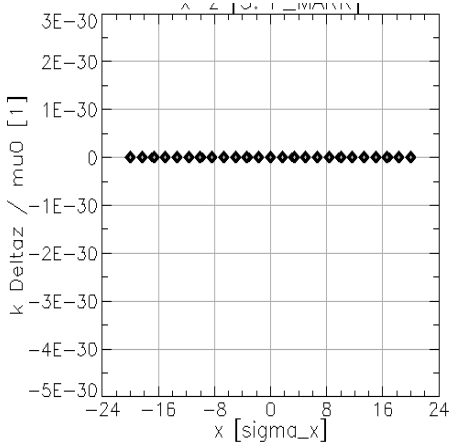
2.68 mm Bypass

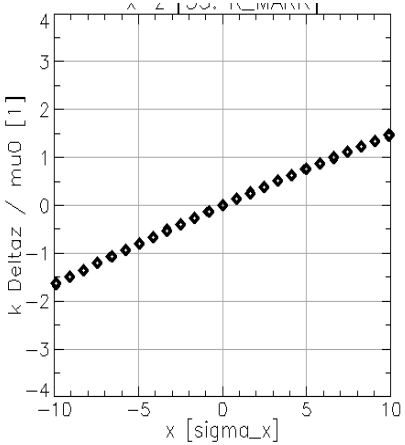
- Emphasize pz dependence of sample lengthening
  - distortion in z-p_z is nonlinear, sextupole would be beneficial
- λ_x / λ_s = 5662.4 ...

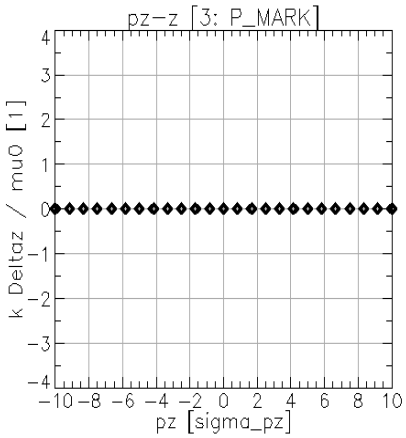
σ_x metric	4.95 10^{-5}
σ_p metric	1.05 10^{-6}

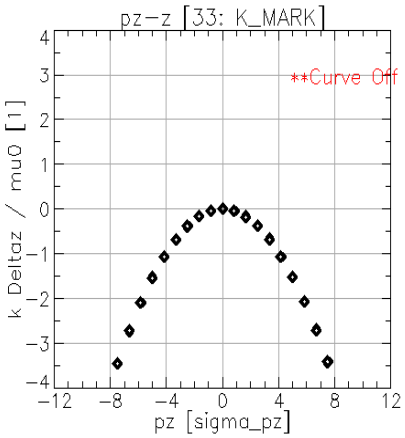








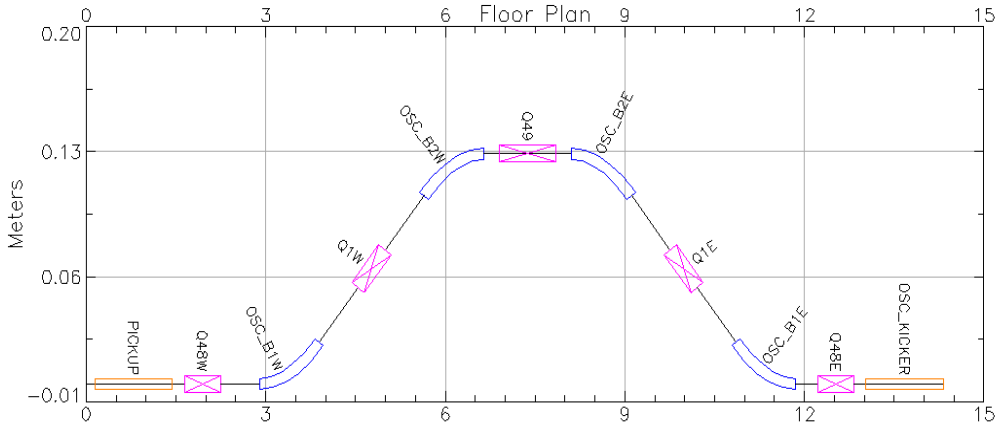


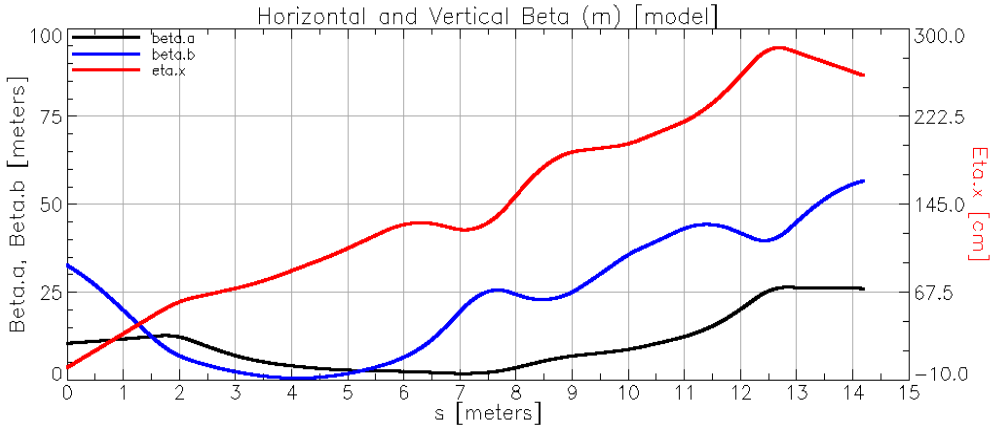


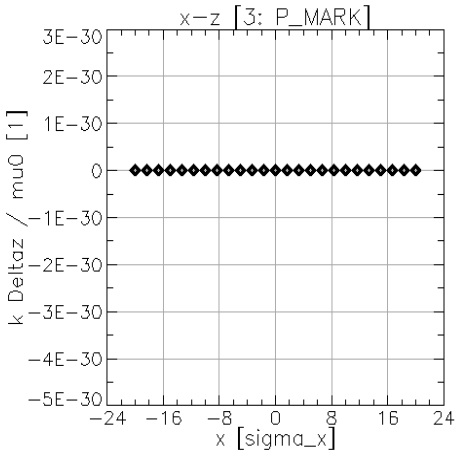
5.3 mm bypass

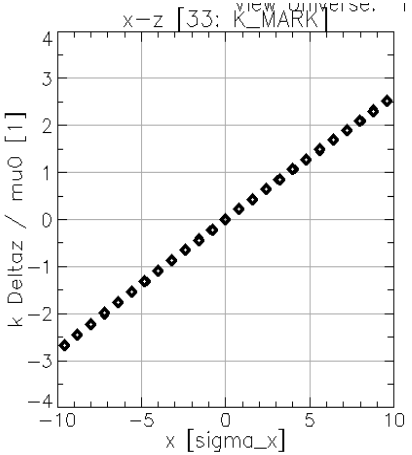
- 5.3 mm beam/photons path length delta
- λ_x / λ_s = 196720.0 ...

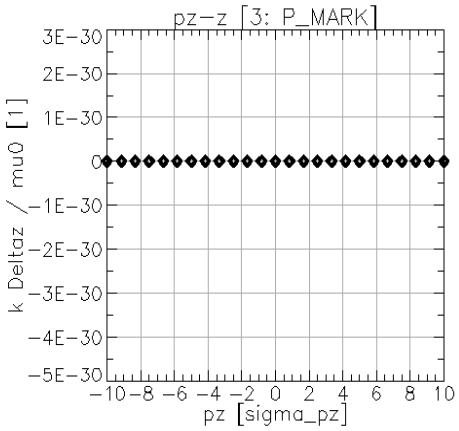
σ_x metric	1.49 10^{-4}
σ_p metric	6.10 10^{-8}

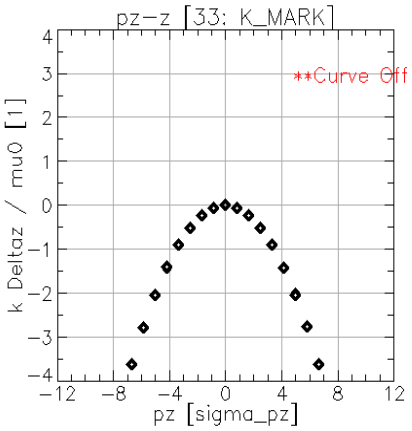












10.0 mm bypass

- 10 mm beam/photons path length delta
- λ_x / λ_s = 999999.0...

σ_x metric	1.99 10^{-4}
σ_p metric	2.18 10^{-8}