Michael Ehrlichman
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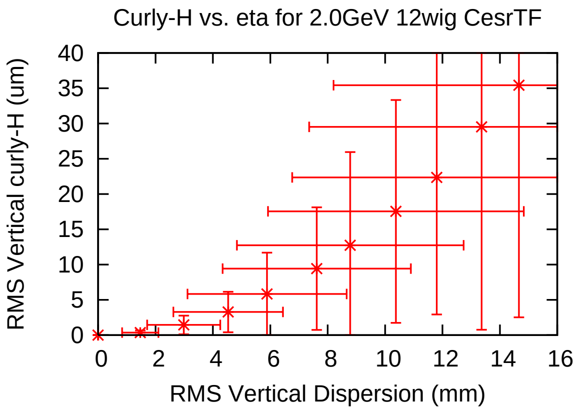
Memo for Monday weekly ILC meeting

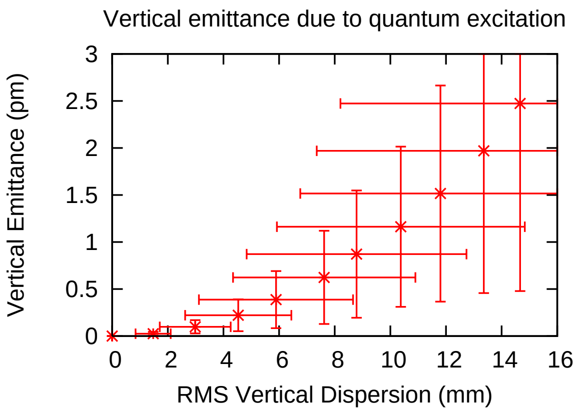
Dependance of vertical curly-H on vertical dispersion for 2.0 GeV CesrTF with random misalignments

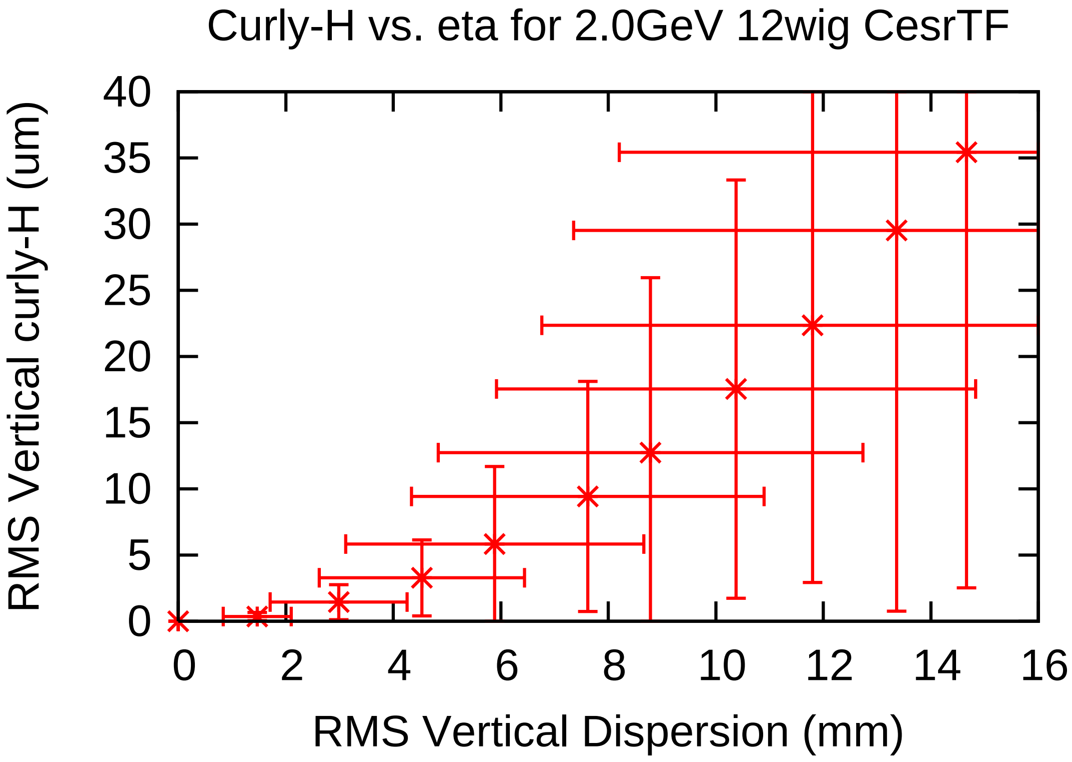
Summary: IBS growth rates are directly related to $\mathcal{H}$. In order to obtain realistic vertical $\mathcal{H}$ values we have implemented the misalignment routine in a program that computes the averages of accelerator functions. We plan on using this data to explore how equilibrium emittance after IBS effects depends on vertical misalignments.

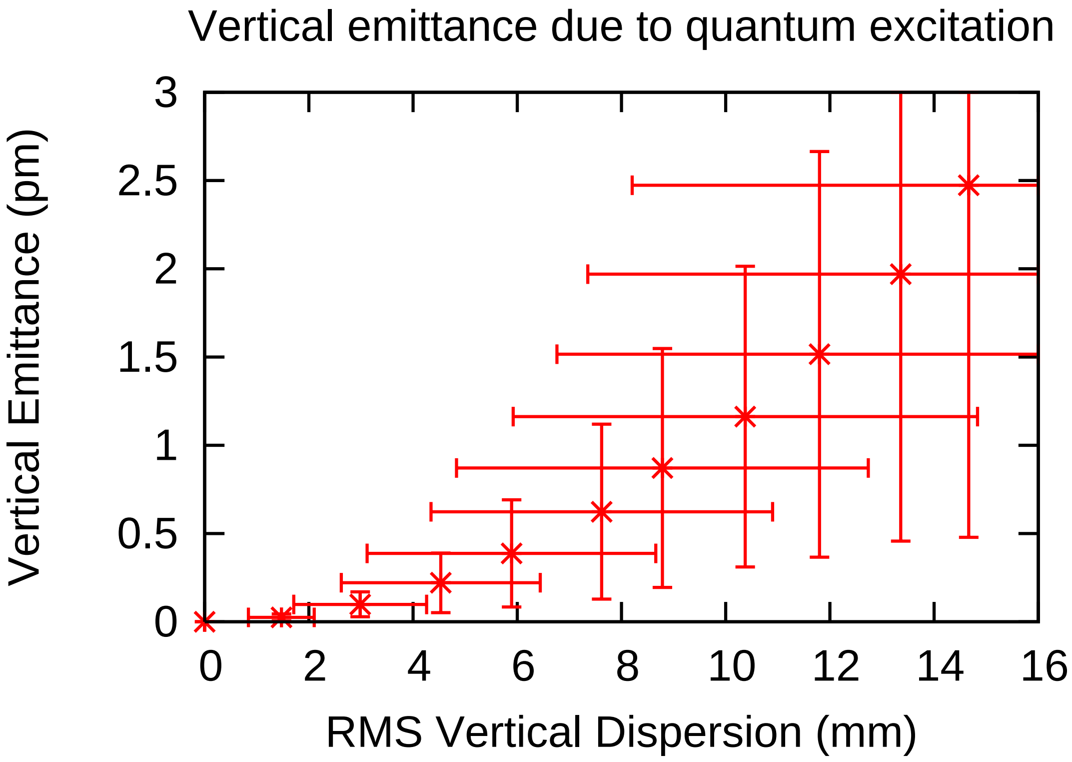
We are not using correcting magnets. Our method consists of adjusting the vertical quadrupole misalignment amplitude to give average vertical emittances on the order of a few pm, then computing RMS dispersion and $\mathcal{H}$.

Each data point represents 500 seeds. Error bars are the standard deviation.






Curly-H vs. eta for 2.0GeV 12wig CesrTF
RMS Vertical curly-H (um)
RMS Vertical Dispersion (mm)
0
5
10
15
20
25
30
35
40
0
2
4
6
8
10
12
14
16


Vertical emittance due to quantum excitation
Vertical Emittance (pm)
RMS Vertical Dispersion (mm)
0
0.5
1
1.5
2
2.5
3
0
2
4
6
8
10
12
14
16