

Capture Section Optimization

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WP6 Meeting

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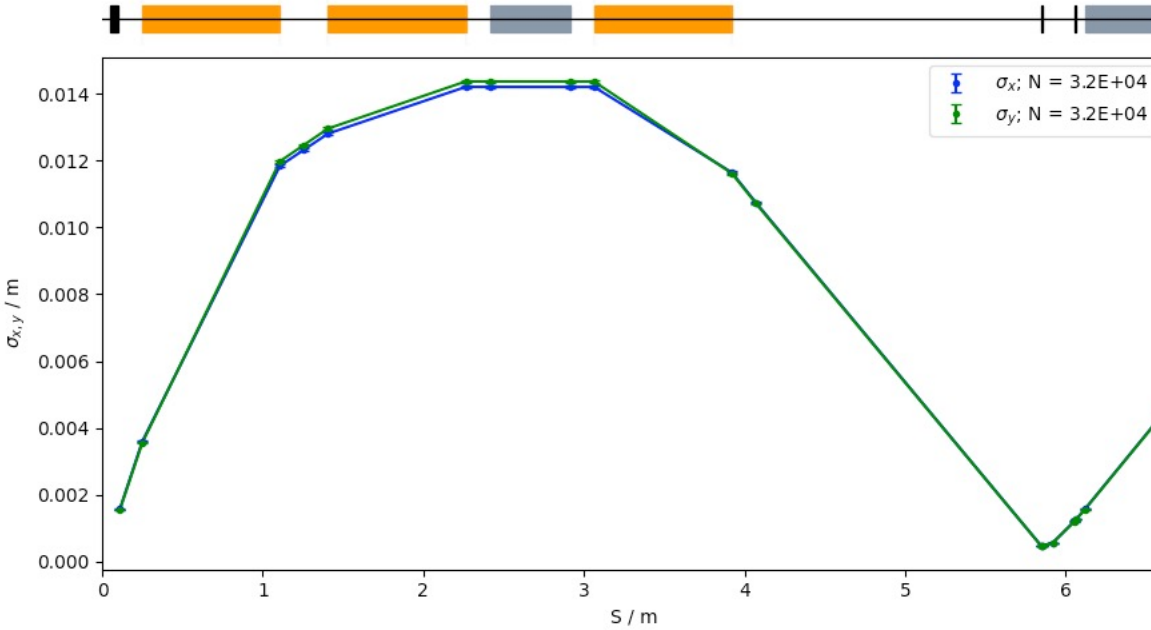


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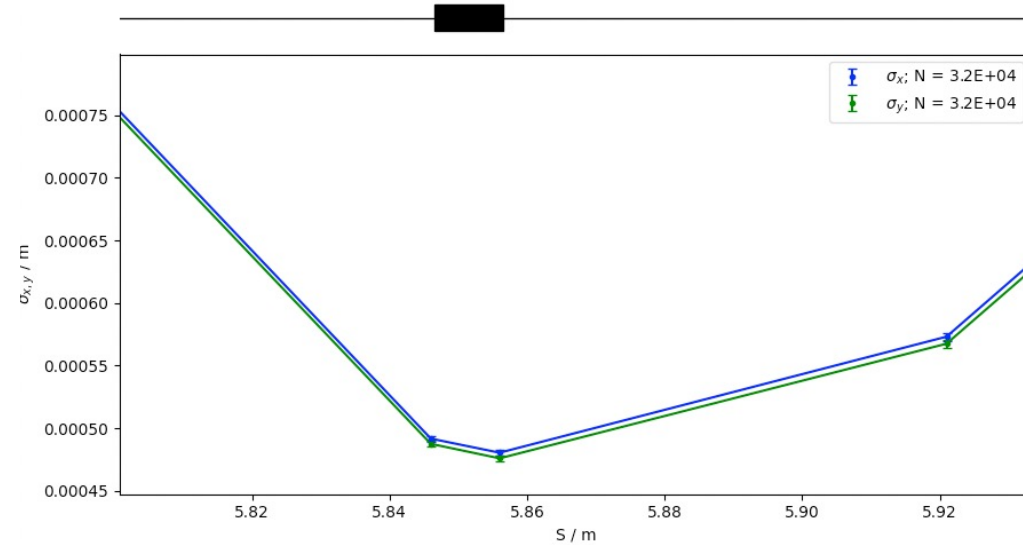
- GDFSolve working!
- Cannot find solution for $GL1 < 1.4$ T with original beam size
 - Beam must be larger in straight section than nominal design
- No perfectly parallel beam yet with $GL1$ fixed at 1.4T
 - Twiss constrains ($\alpha = 0$), no beam size constraints – no solution
 - Constrain beam size – manually iterate (next slide).
- Split model with different GDFSolve objectives
 - 1: Start to end of straight section
 - Parallel beam (less constrained beam size)
 - 2: Start of $GL3$ up to start of $GL4$
 - Beam waist at the collimator
- To consider:
 - $GL3$ strength for stage 2 operation

Solenoid Strength Optimisation



- Beam size: 1.419 cm
- Alpha in straight section: ~ 0.2 – 0.8
- Beam size change on the order of microns
- GL1: ~ 1.389T
- GL2: ~ 0.598T

- Minimum spot size slightly beyond the stage 1 collimator
- GL3 strength to be optimised



- Tested executable on:
 - Windows 7 (+ compatibility mode)
 - Windows XP VM (VirtualBox)

- No success – white screen.

- Making model manually an option
 - Unfamiliar with the code
 - Non-Gaussian beam

- Done:
 - Recheck GPT optimisation scripts
 - Not sent as now working
 - Found a solution that provides a parallel beam
- Ongoing:
 - Continued capture section optimization (GL3)
- Todo:
 - Update models with JP modifications
 - Develop OPAL model of FFA – need JP input.