

Beam-beam simulations for FCC-ee - updates

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Acknowledgements: K. Ohmi

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Explanations

➤ To understand the anomalous growth of σ_x w/ CW in p. 18:

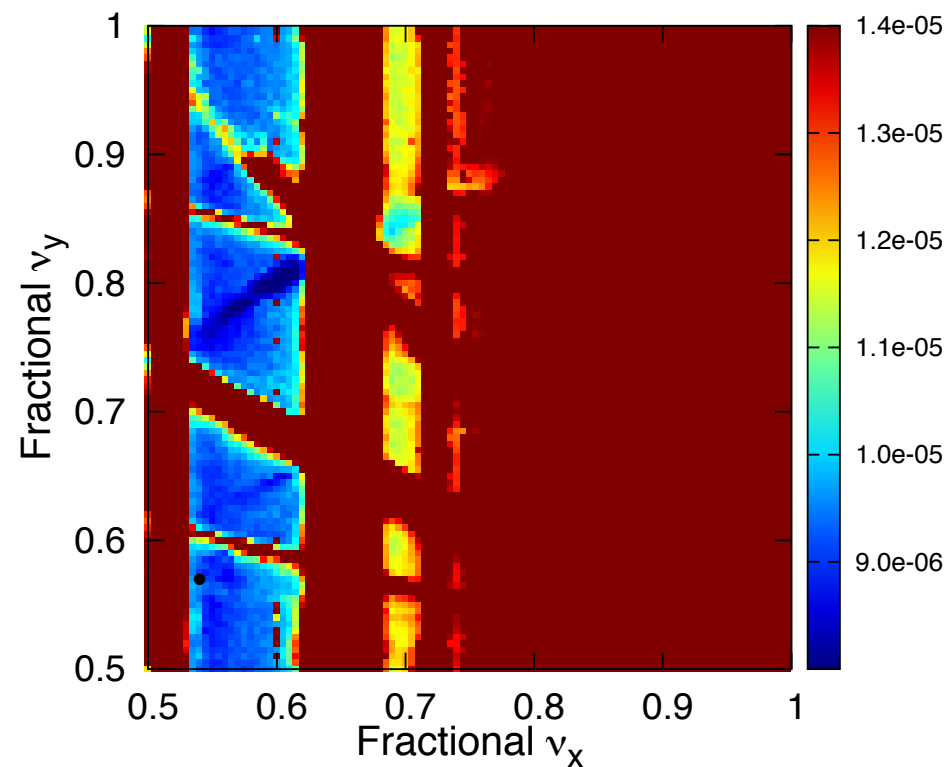
- It is irrelevant to the beamstrahlung effect
- CW transform map: $\exp[\pm i K_w x p_y^2 / 2]$
- CW is used to suppress beam-beam driven x-y resonances
- The beam-beam driven x-z resonances are not suppressed by CW
 - The main reason is the improper choice of working point [.54, .57], which is still close to the x-z resonances
 - Shifting to [.55, .57] gives more reasonable results [see page 5].

Explanations

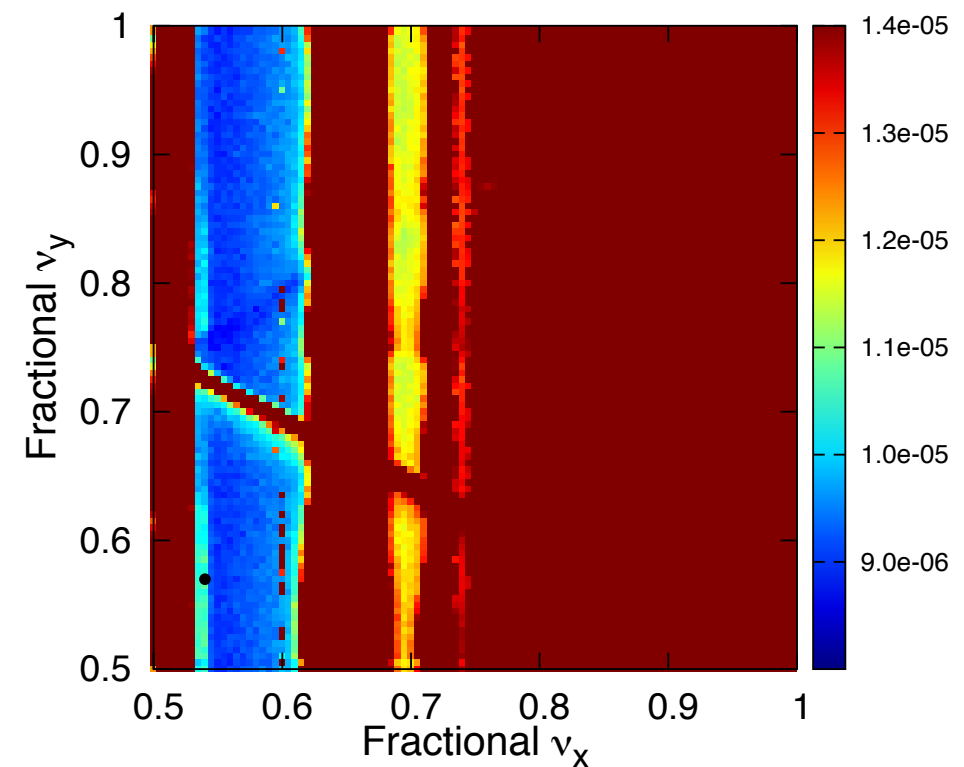
➤ To understand the anomalous growth of σ_x w/ CW in p. 18:

- Zoom the σ_x scan plots [colour scale range changed to [8, 14]micron] [black dot indicates [.54, .57]]

w/o CW

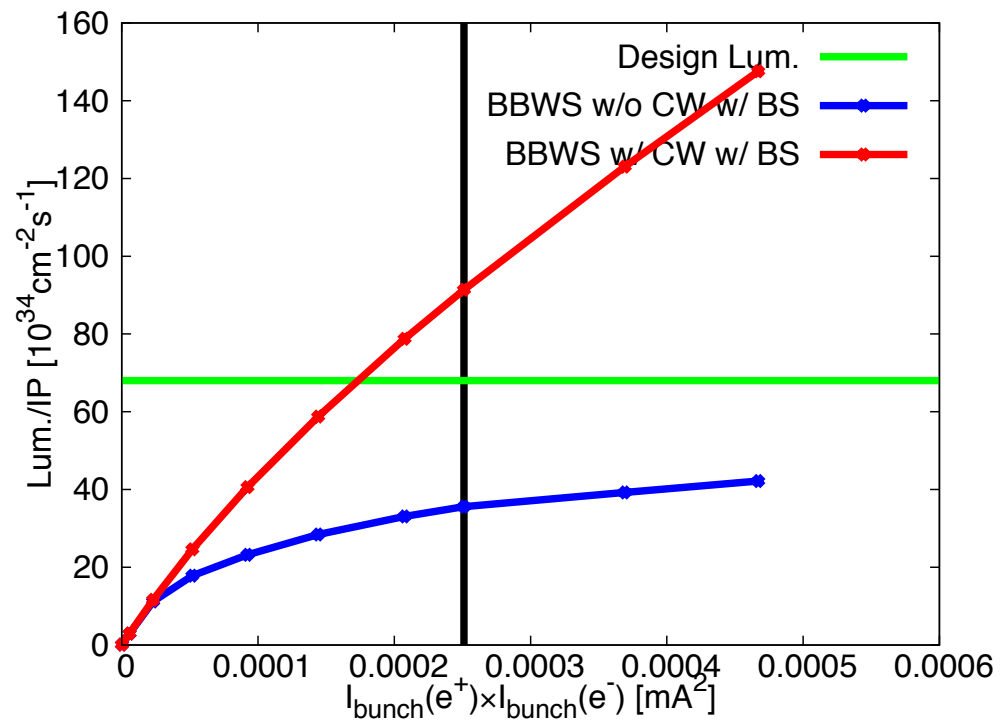
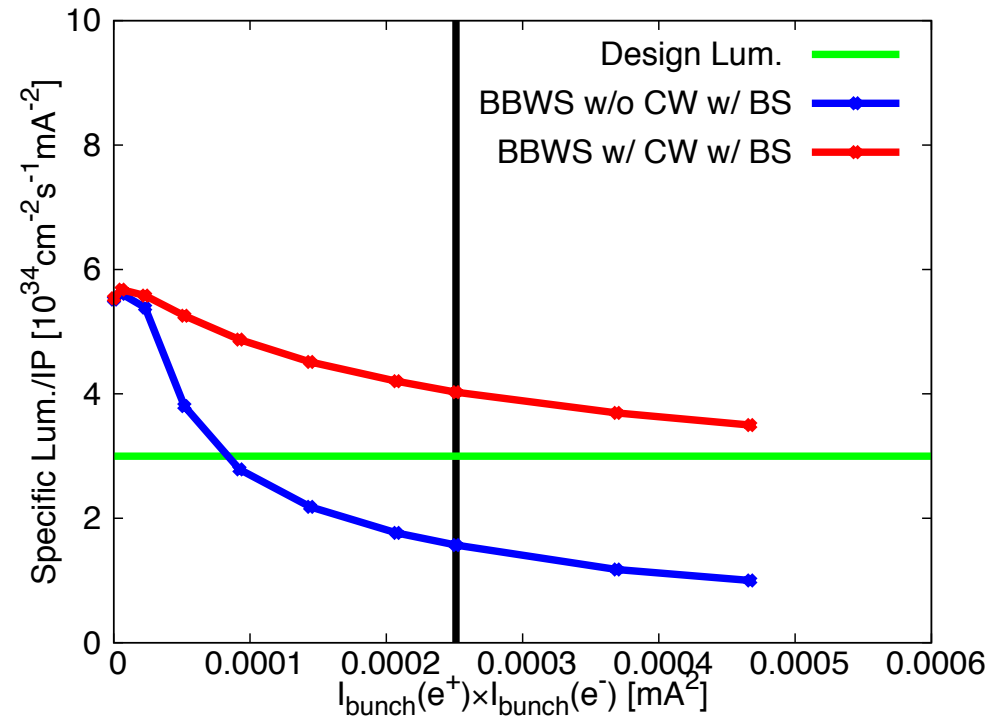


w/ CW

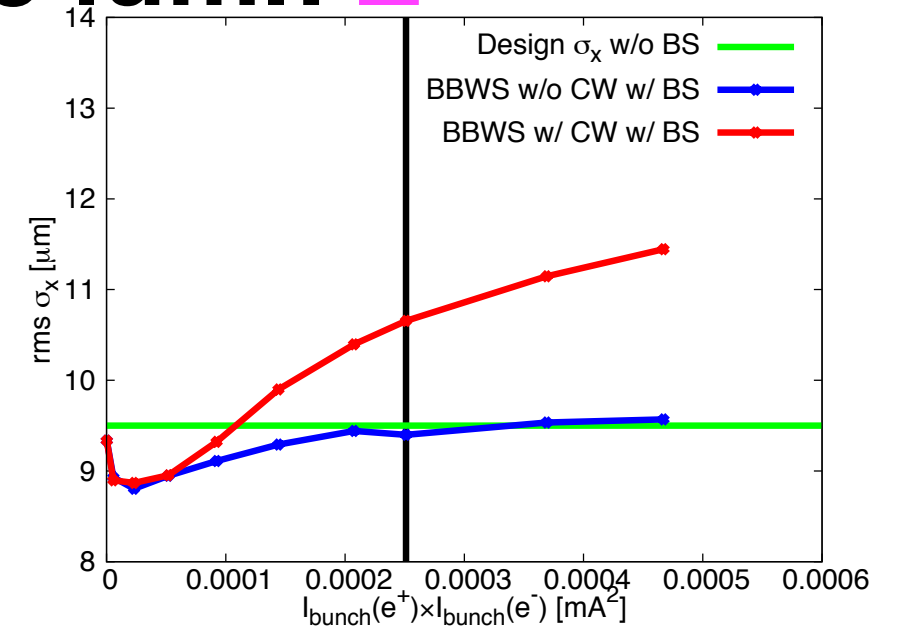


2. BBWS simulations: Specific lum.: Z

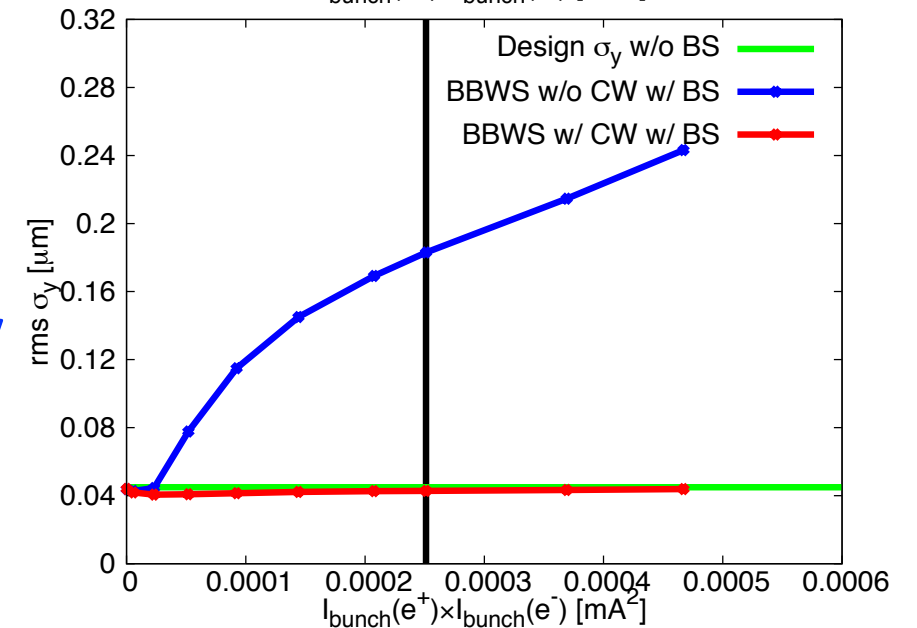
➤ [.54,.57]/IP



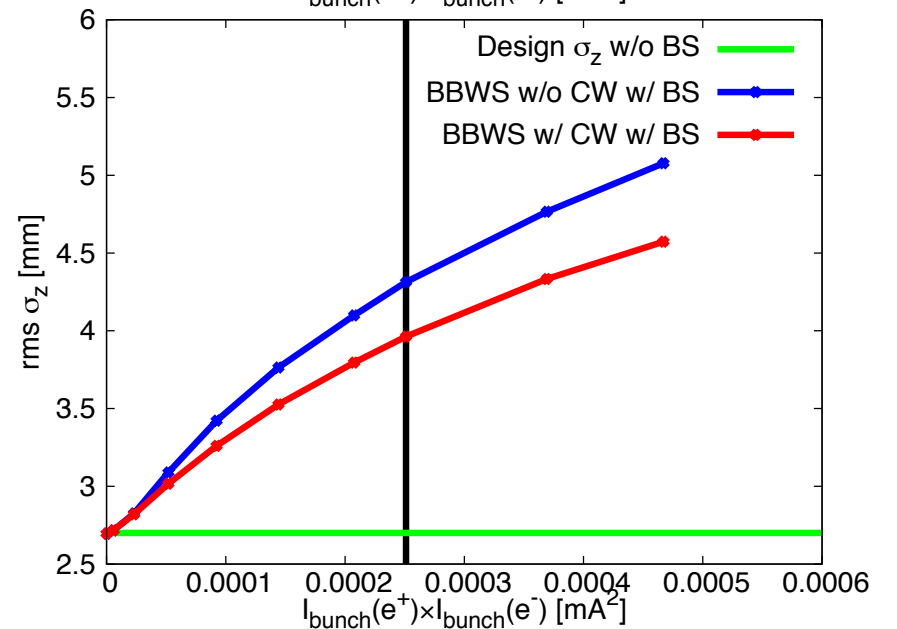
σ_x



σ_y

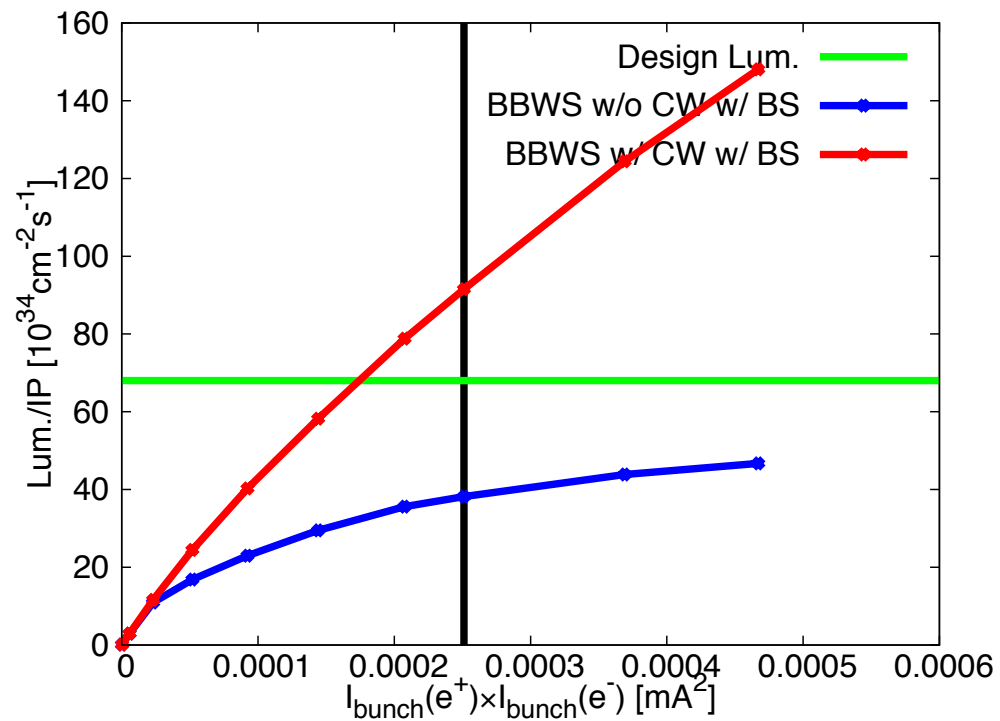
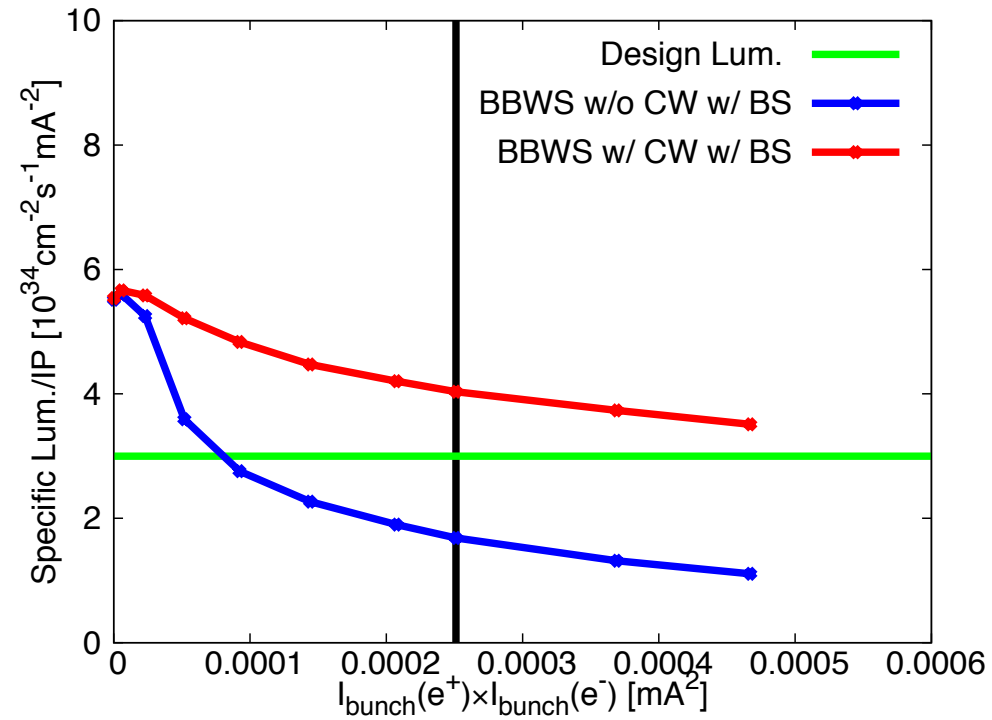


σ_z

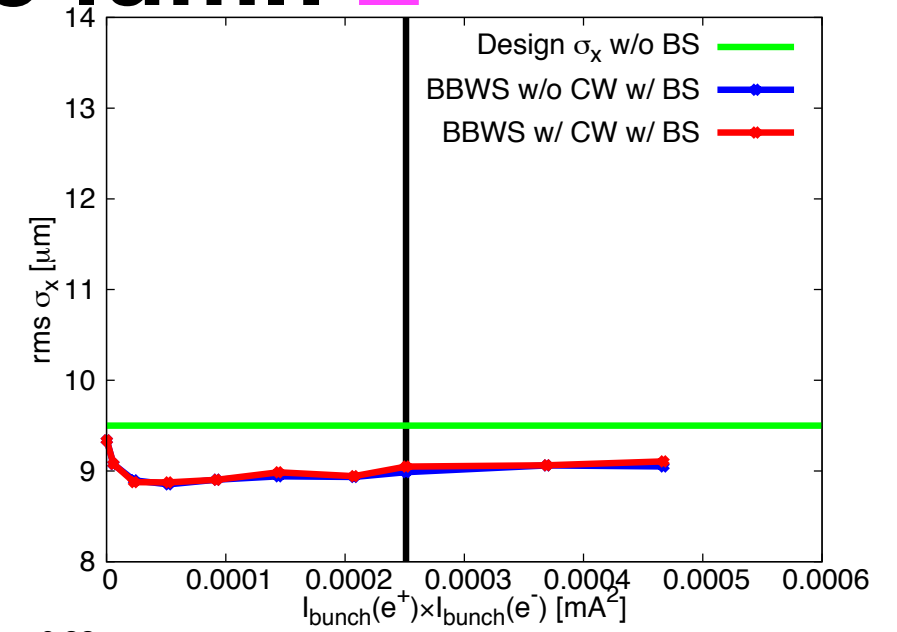


2. BBWS simulations: Specific lum.: Z

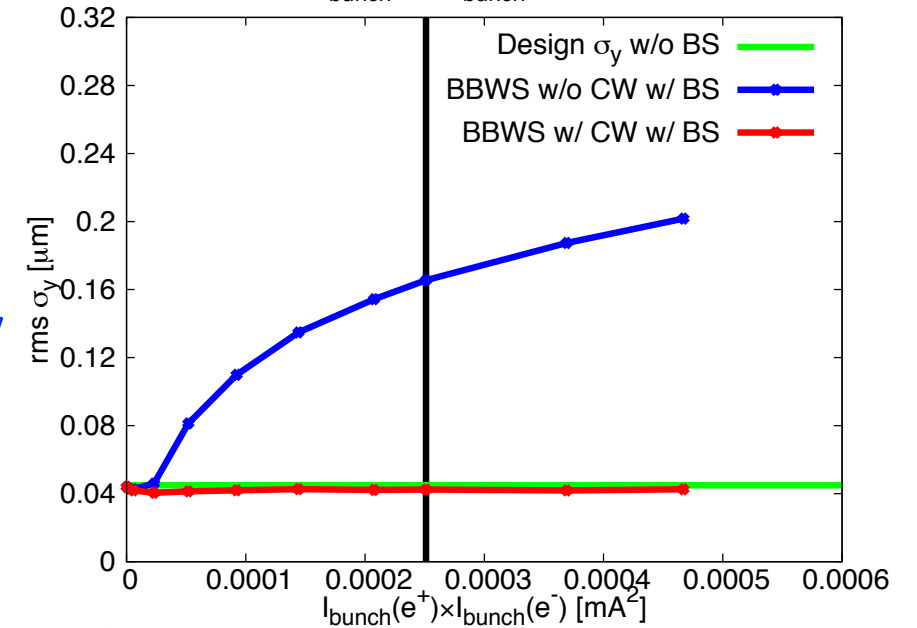
➤ [.55,.57]/IP



σ_x



σ_y



σ_z

