Beam interaction with a single mode wake-field

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Topics

- Problem definition
- Calculation results
- Next steps

Problem definition

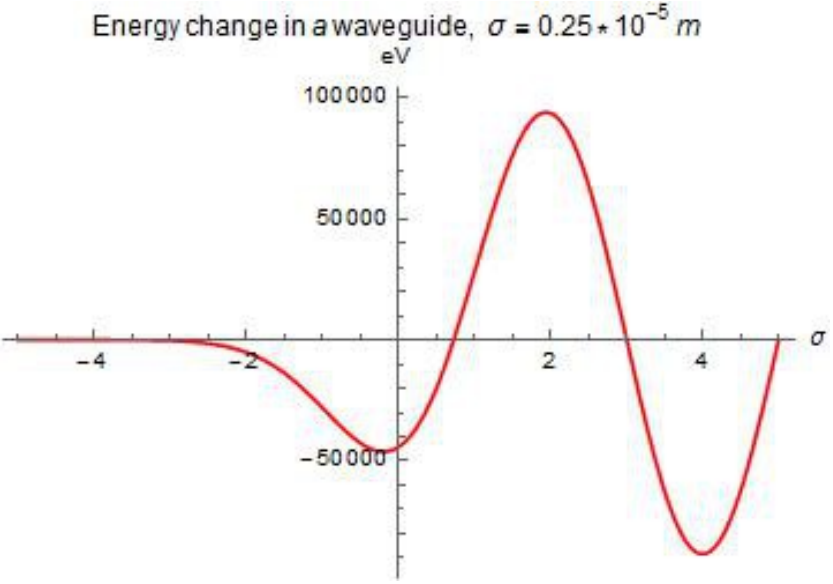
Study of micro-bunching of a beam after passing through a single mode waveguide

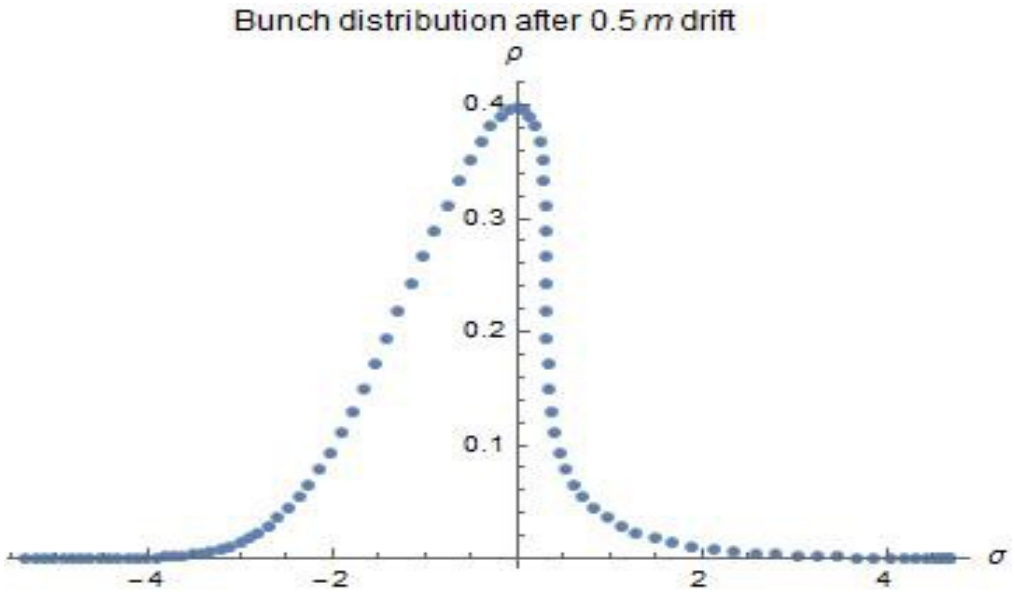
Problem definition

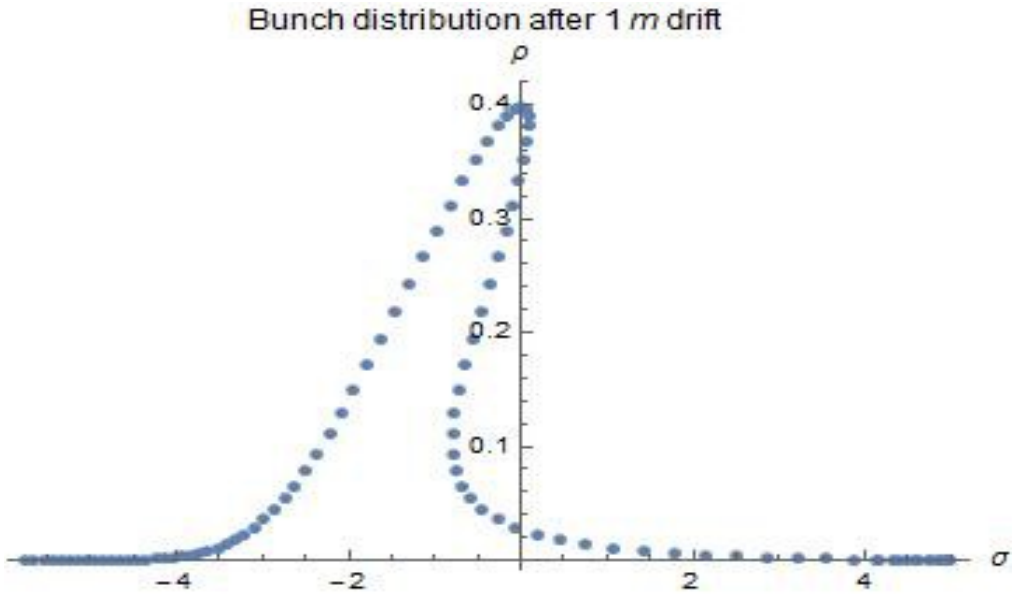
Beam energy	1 MeV
Charge	100 pC
Waveguide length	10 cm
Waveguide mode	10 μm

Wake - $w_z = k_{loss} \cos(\omega\tau)$

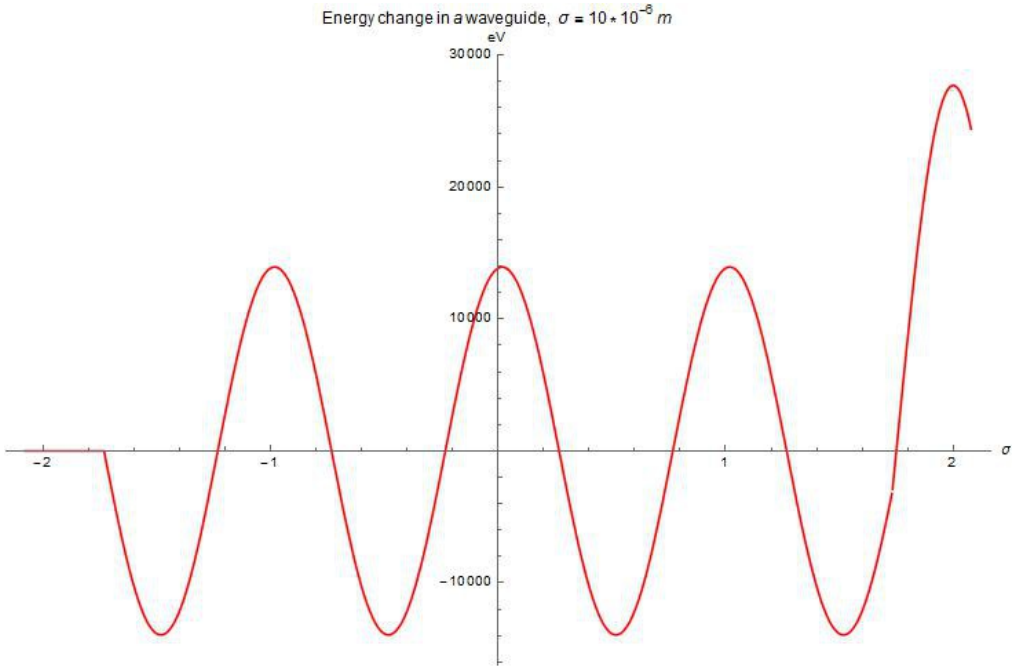
Gaussian bunch

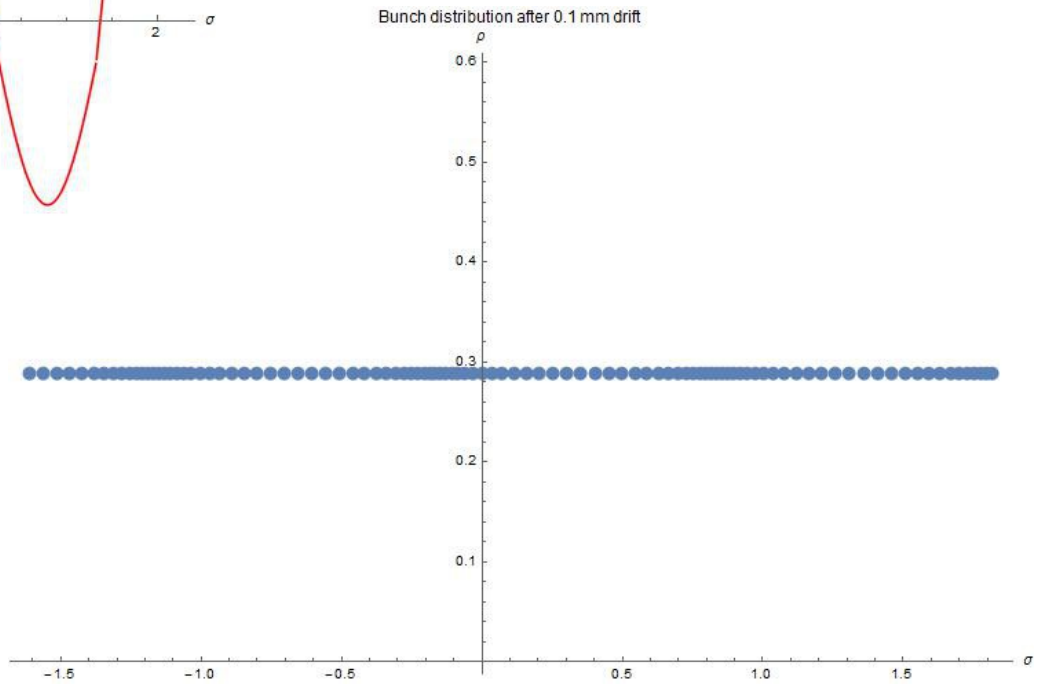




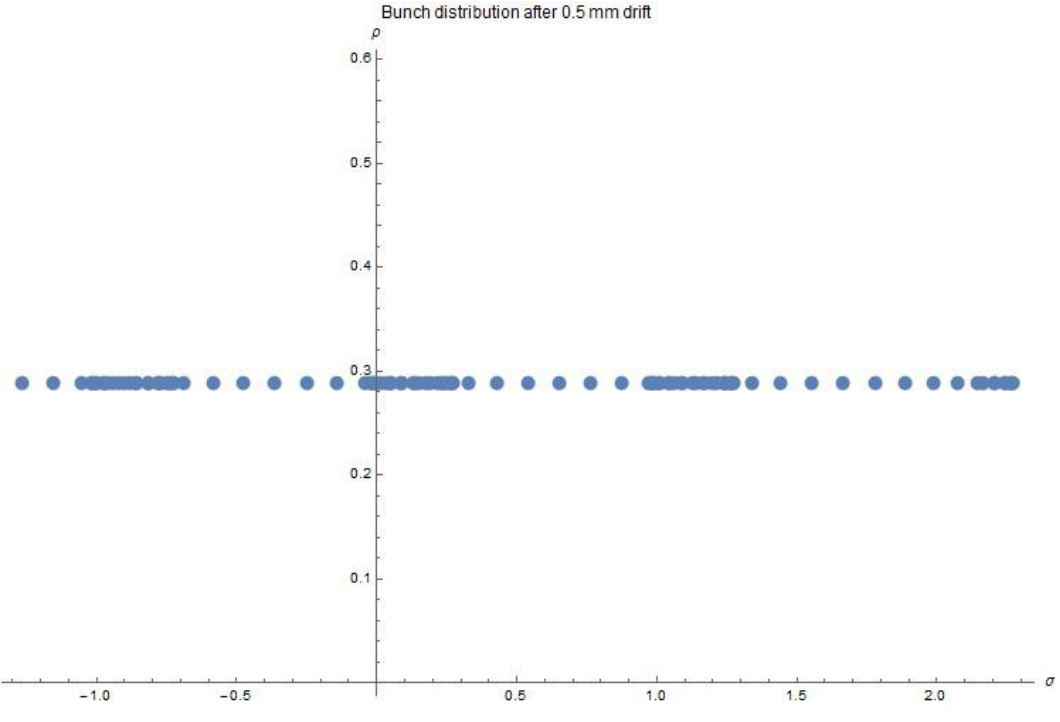


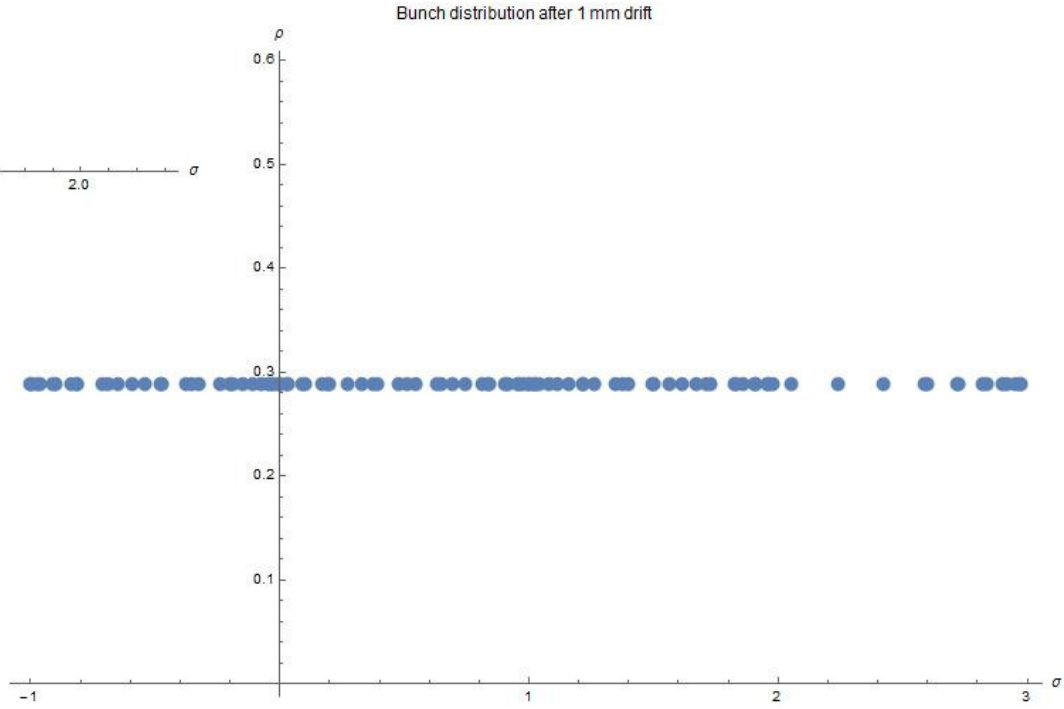
Uniform bunch



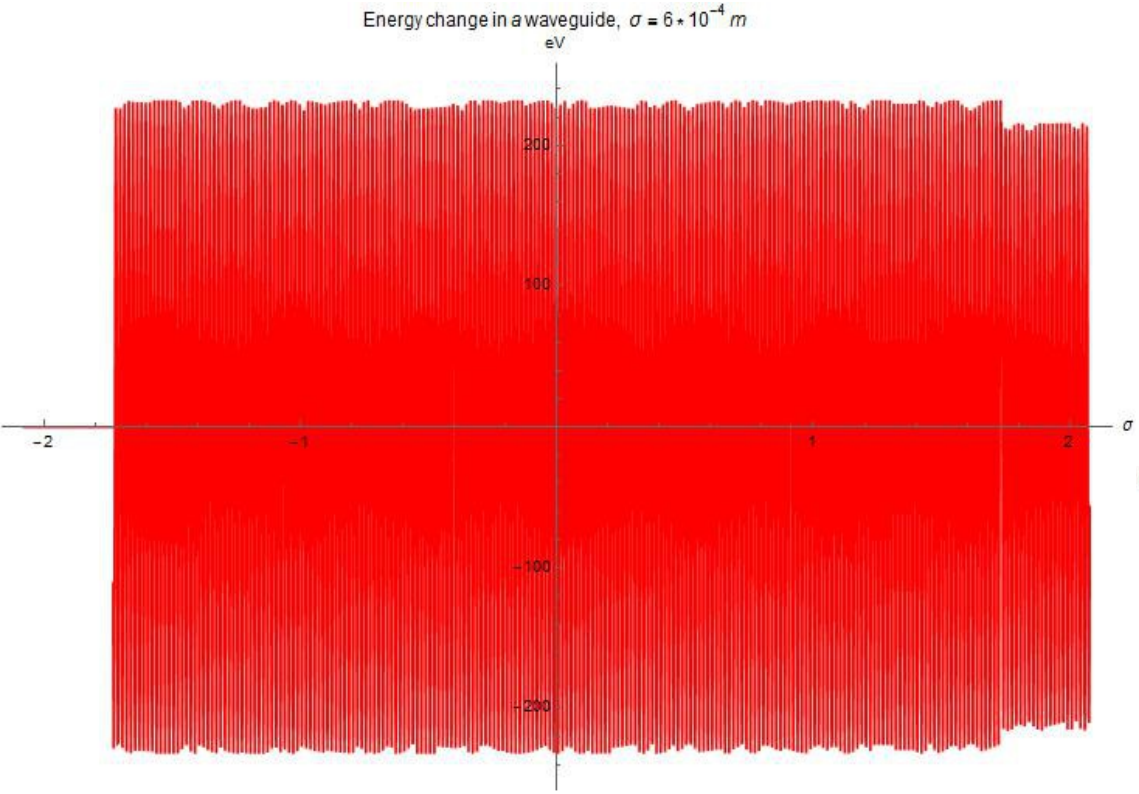


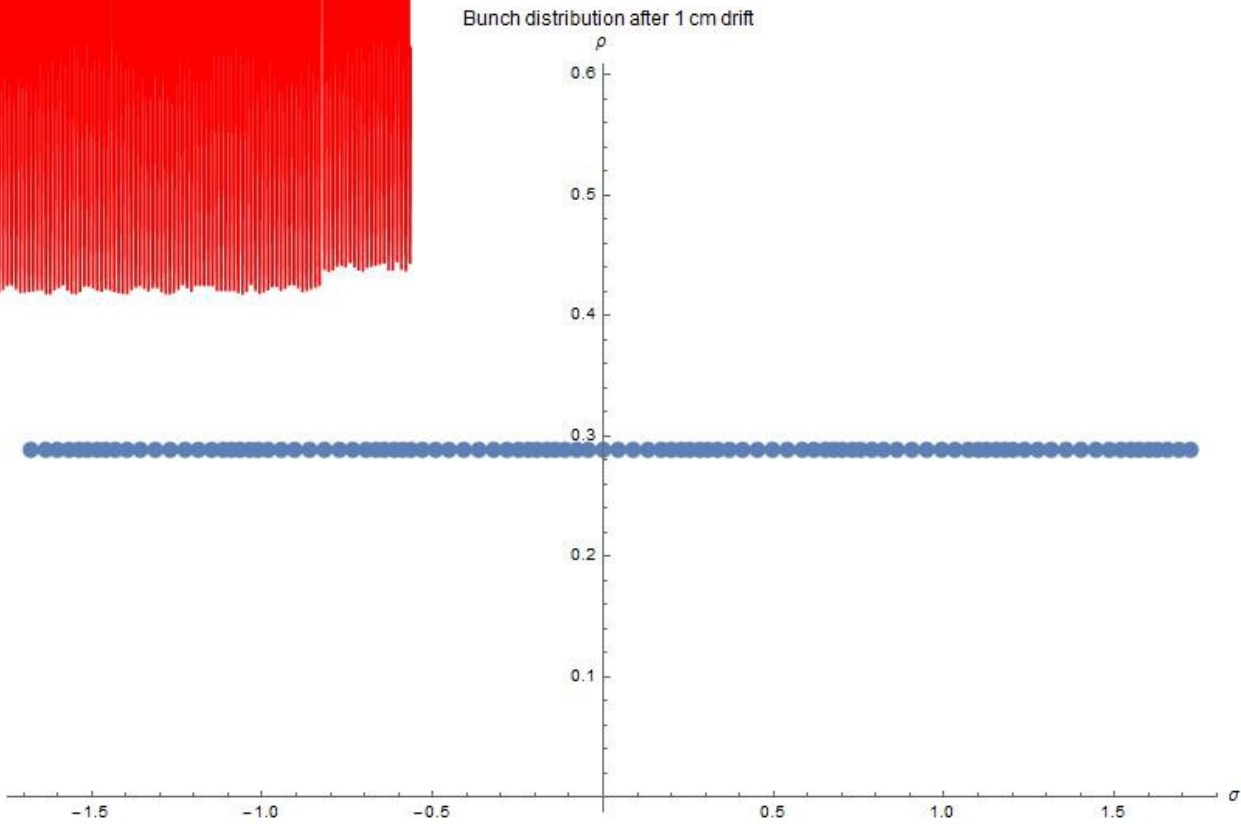
Uniform bunch



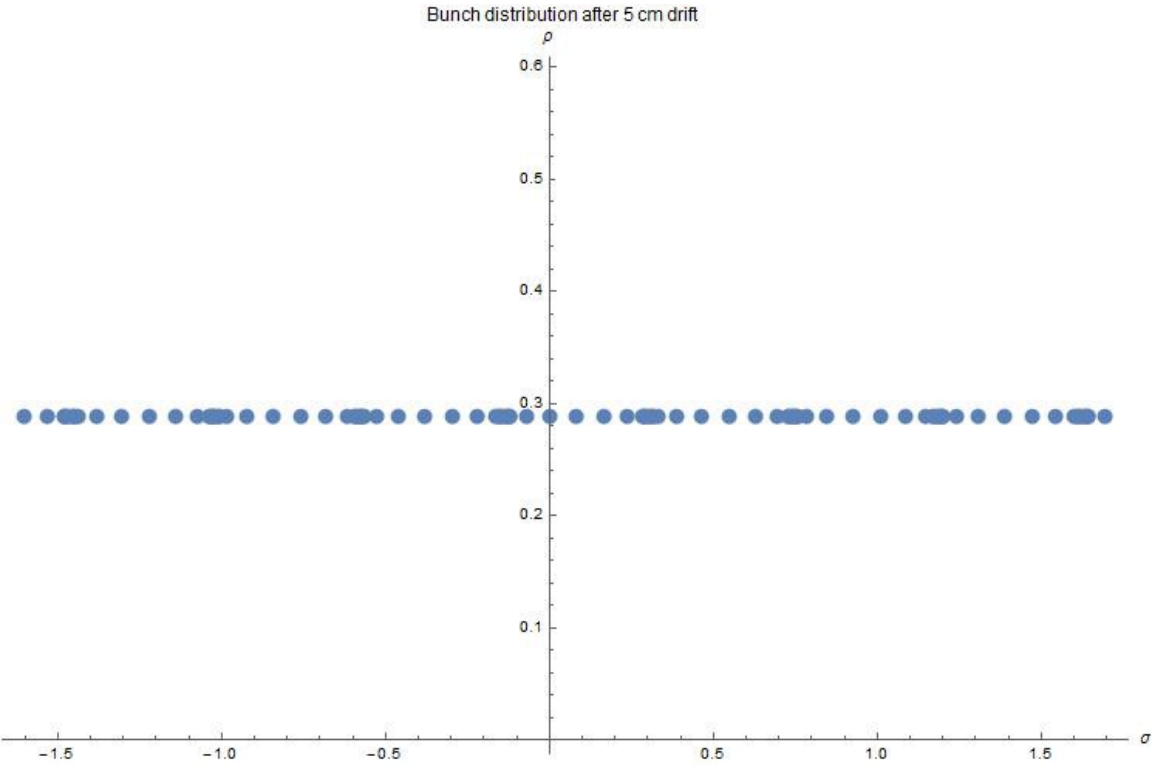


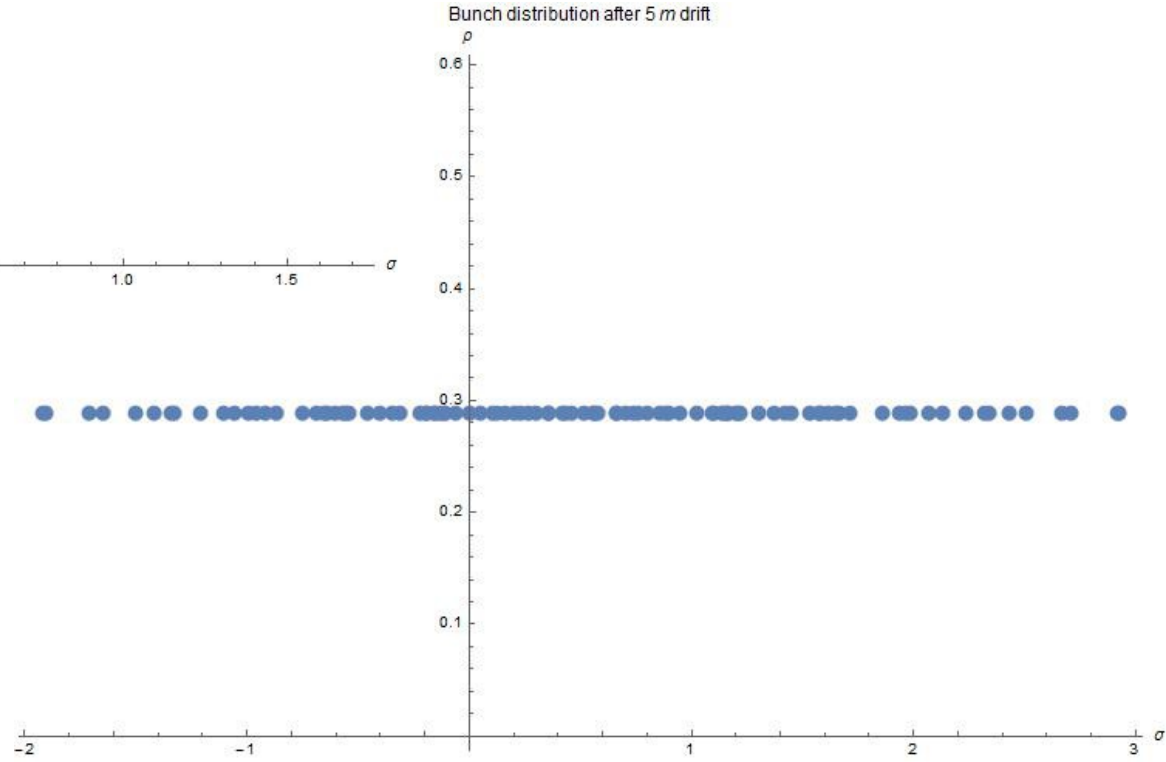
Uniform bunch





Uniform bunch





Next step

- **Bunch shape change in the waveguide**

Thank you