

Bachelors defense

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DLWFA

Flying focus lasers in PIConGPU

Testing the flying focus laser

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References

Plan

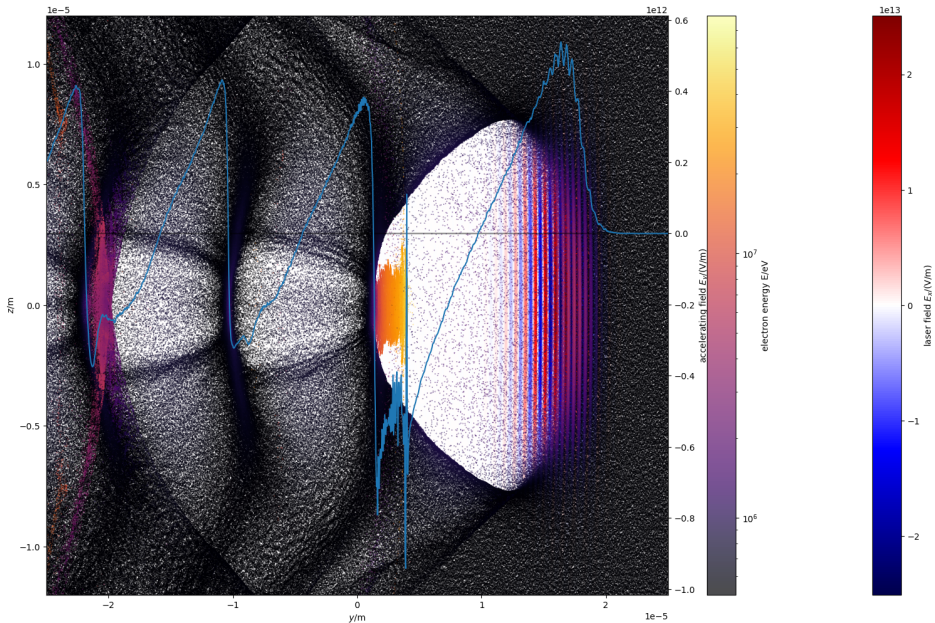
My idea

- ▶ Motivation LWFA
- ▶ Flying focus as solution?
- ▶ programs
- ▶ Lasy lasers in PIConGPU
- ▶ flying focus laser simulations
- ▶ Summary
- ▶ What now?

With Jessicas help

- ▶ Why? DLWFA
- ▶ Flying focus in PIConGPU
- ▶ Lasy + implementation
- ▶ Flying focus doesnt work - why?
 - ▶ tests
 - ▶ tests
- ▶ Conclusion
 - ▶ why doesnt it work
 - ▶ Now Lasy lasers available in PIConGPU
 - ▶ back to LWFA

LWFA



Flying focus lasers

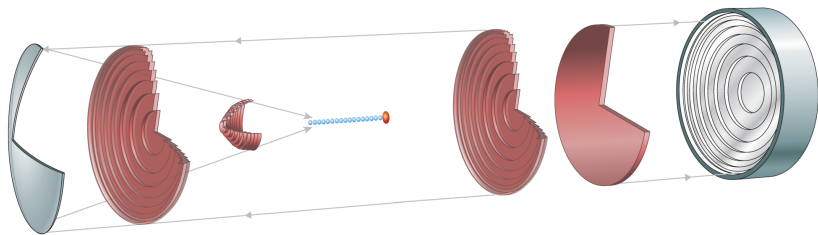


Image taken from Palastro et al [1]

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- ▶ g
- ▶ ...
- ▶ ..
- ▶ .

Lasz

Implementing the flying focus

Importing to PIconGPU

Test 1

Test 2

Possible reasons for failure

Now Lasy lasers available in PIconGPU

Back to LWFA?

References



J. P. Palastro, J. L. Shaw, P. Franke, D. Ramsey, T. T. Simpson, and D. H. Froula.

Dephasingless laser wakefield acceleration.

Phys. Rev. Letters, 124, 2020.