

Bachelors defense

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DLWFA

Flying focus lasers in PICoGPU

Testing the flying focus laser

Conclusion

References

Plan

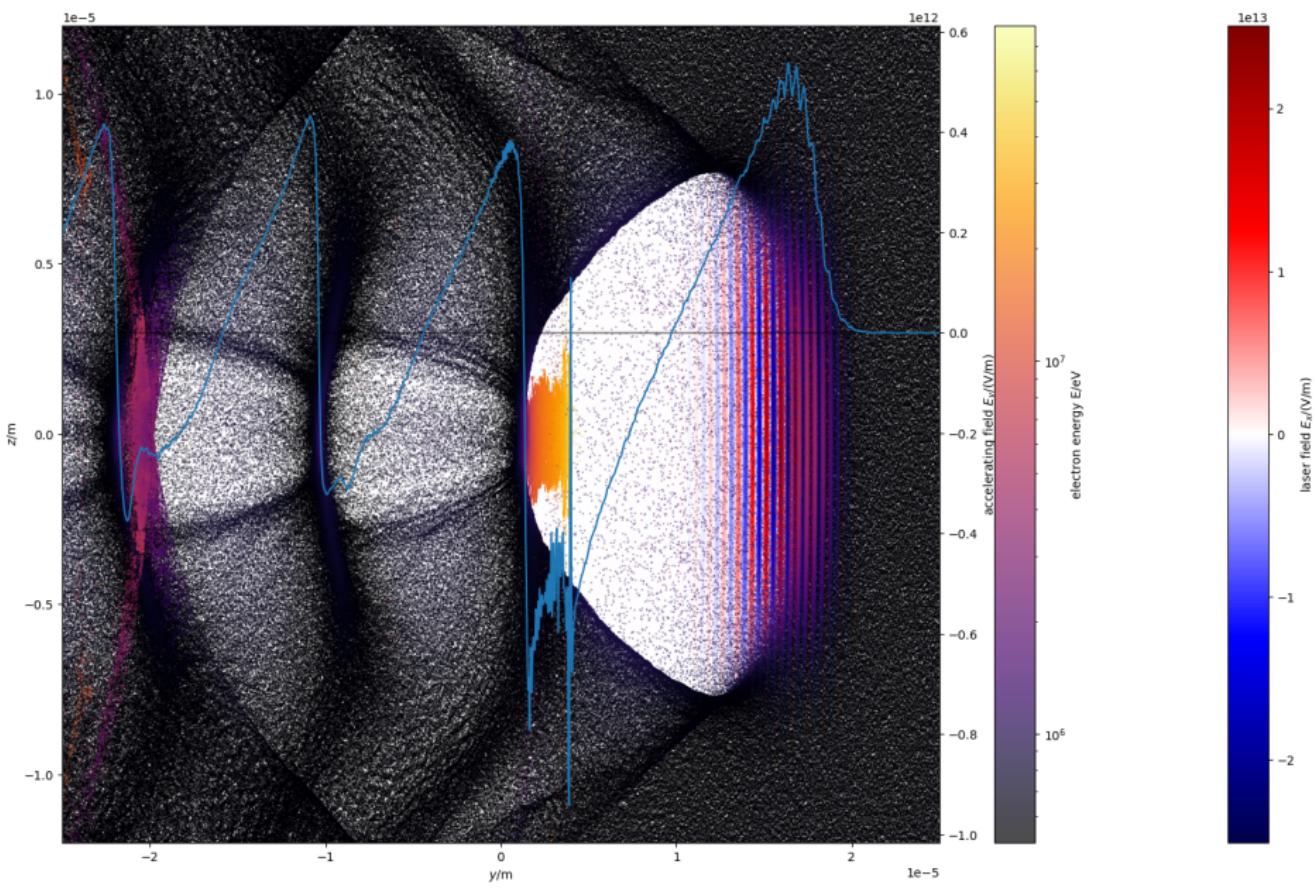
My idea

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

With Jessicas help

- ▶ Why? DLWFA
- ▶ Flying focus in PICoGPU
- ▶ Lasy + implementation
- ▶ Flying focus doesn't work - why?
 - ▶ tests
 - ▶ tests
- ▶ Conclusion
 - ▶ why doesn't it work
 - ▶ Now Lasy lasers available in PICoGPU
 - ▶ back to LWFA

LWFA



Flying focus lasers

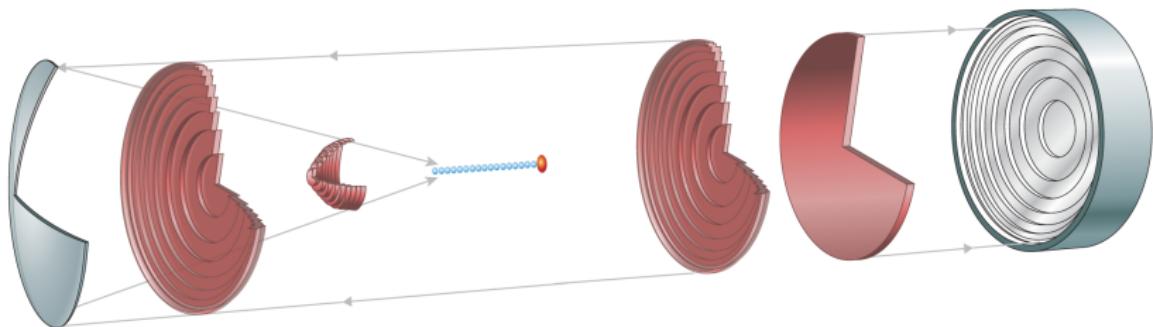


Image taken from Palastro et al [1]

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- ▶ g
- ▶ ...
- ▶ ..
- ▶ .

Lasy

Implementing the flying focus

Importing to PICoNGPU

Test 1

Test 2

Possible reasons for failure

Now Lasy lasers available in PICoGPU

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.