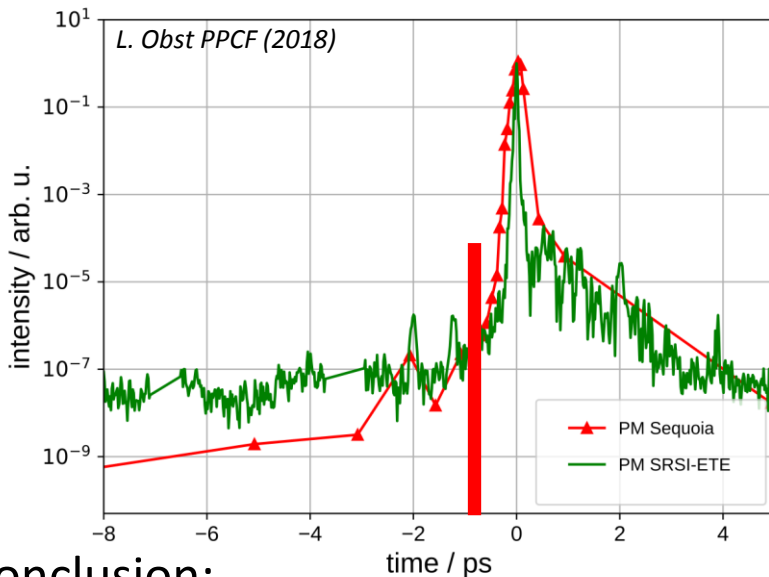


- Cylindrical \varnothing 5 μ m cryogenic hydrogen jet: $\sim 30n_c$ @ 800nm
- Synchronized stand-alone probe laser system @ 515nm



Probe beam

100 μ J, 160fs,

515nm

$\sim 10^{12}$ W/cm 2

~ 0.1 J/cm 2

Hydrogen
jet target

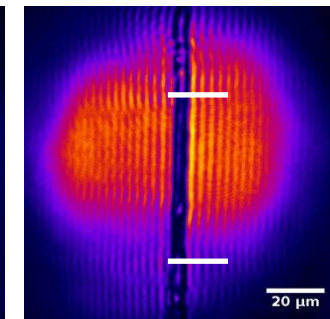
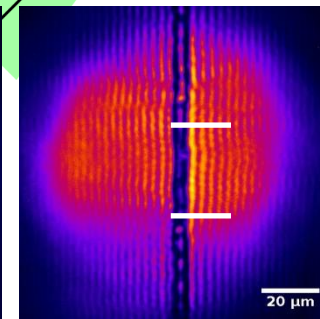
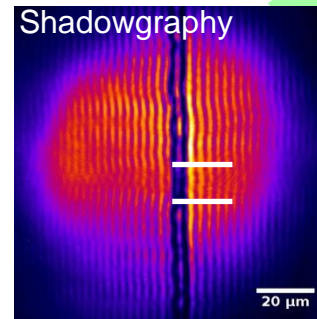
DRACO beam

16J, 30fs, 800nm

PM cleaned contrast

2.3×10^{21} W/cm 2

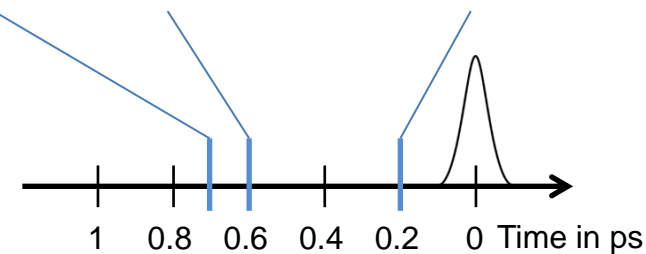
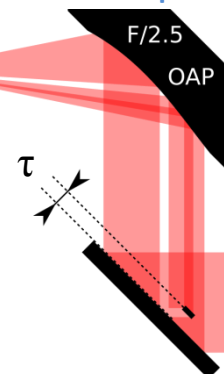
Shadowgraphy



0.7 ps

0.6 ps

0.2 ps



DRACO pulse arrival

Conclusion:

- PW-laser induced target evolution effect at **full energy** can be studied
- Target pre-expansion beneficial for proton acceleration up to **80 MeV**

