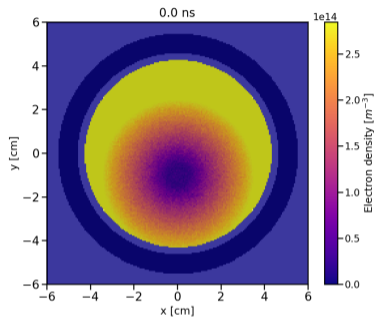


Updates on simulation of the "IC" lens

Titus Dascalu

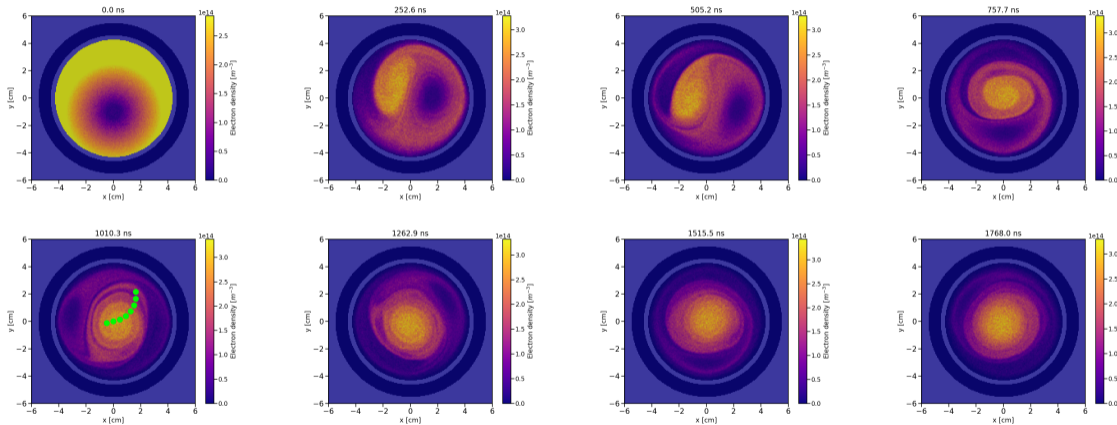
September 24, 2020

Electron cloud initial distribution

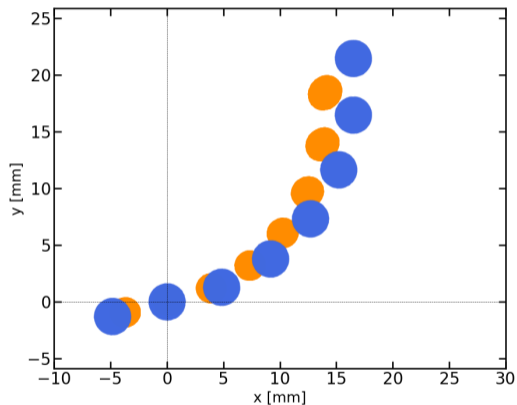


- ▶ Beam enters the lens after $1\mu s$
- ▶ Reduce the radial electron density gradient to keep initial plasma dynamics for longer + add offset and rotation of the centroid of the plasma column

Evolution of the electron cloud

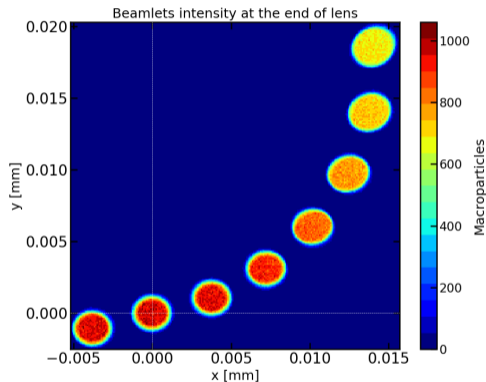


Beamlets position



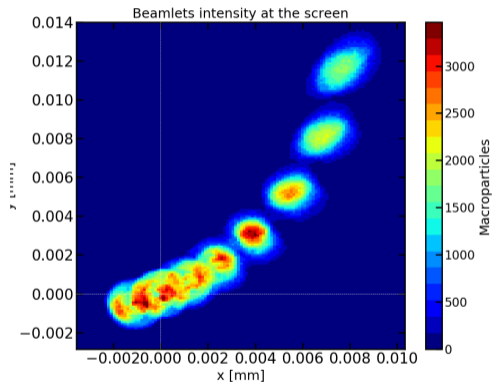
Macroparticles at: blue - entry plane, orange - exit plane (of lens); $N \sim 2 \times 10^8$ macroparticles

Beamlets profile



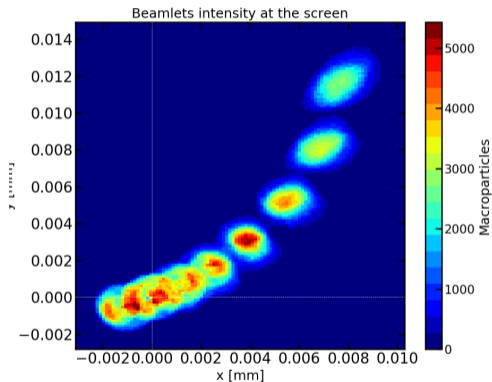
Exit plane of lens

$N = 4 \times 10^6$ macroparticles (downsampled)



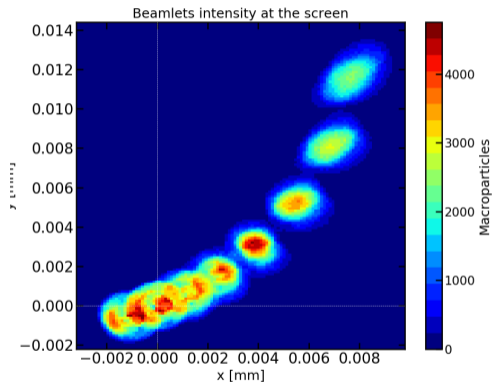
Phosphor screen (additional 67cm drift)

Beamlets profile



2nd sample

$N = 4 \times 10^6$ macroparticles (downsampled)



3rd sample

Beamlets profile vs measurement

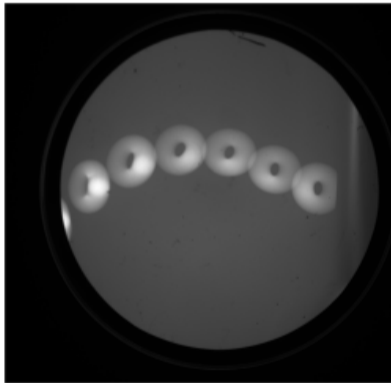


Figure 10 from paper draft

