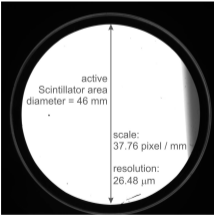
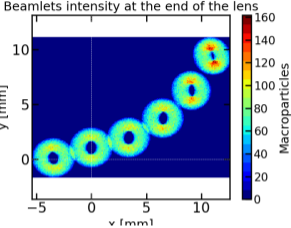
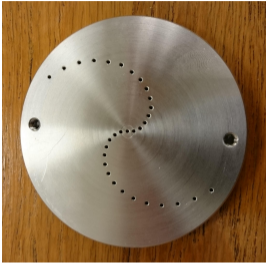


Updates on simulation of the "IC" lens

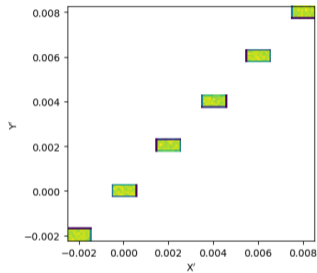
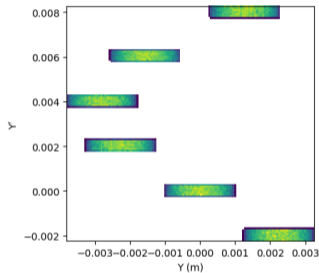
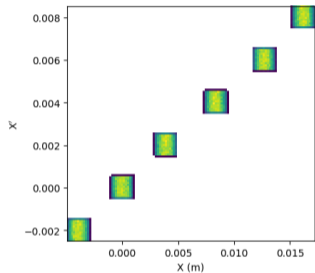
Titus Dascalu

November 5, 2020

Scale of simulation vs images

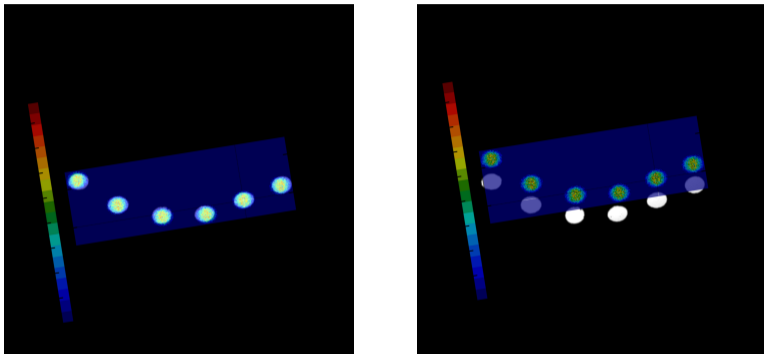


Add beam divergence into simulation



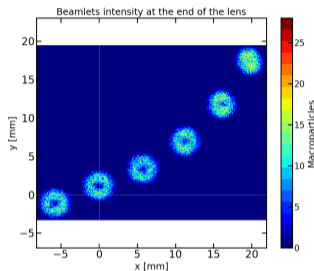
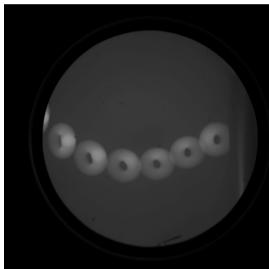
- ▶ Tune the divergence according to the angles obtained from the scale of the photographs and the geometry of the setup

Divergence tuning



- ▶ An overlay of photograph and histogram from simulation show approximate agreement (in relative position of the beamlets + size of each beamlet)

Divergence tuning



- ▶ Increasing the separation between beamlets changes the comparison done before
- ▶ The parameters of the plasma (density, radius of rotation of the centroid) needs to be re-tuned

The following modifications did not lead to peaks in intensity in each ring:

- ▶ Only a fraction f of the plasma column is rotating at each end (tested $0.05 < f < 0.5$)
- ▶ There is a misalignment between the axis of rotation of the plasma column and the beam axis (tested for 0-5 mrad)