

Laser Intensity Jitter in Simulation of 409 CeC

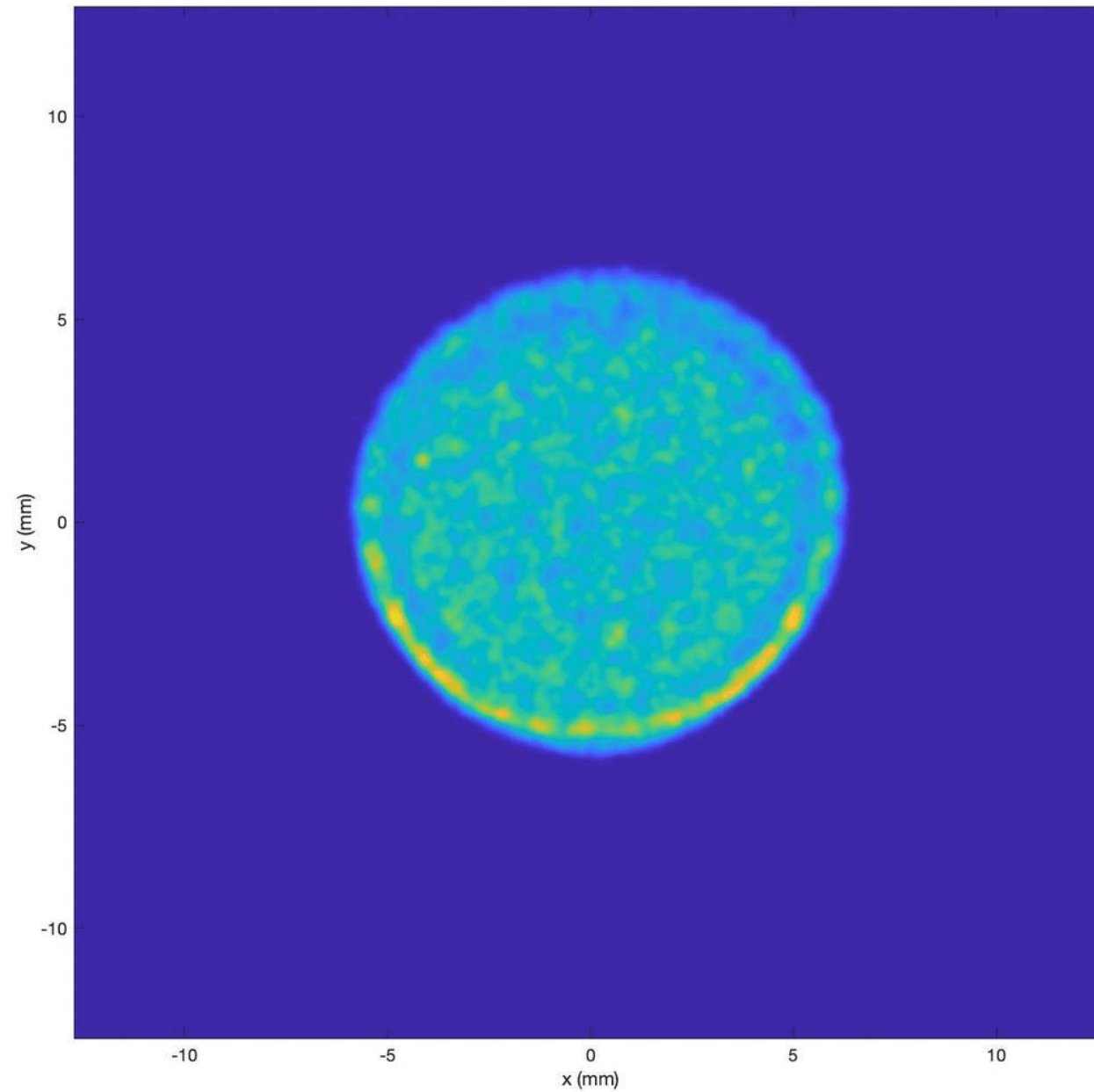
KS

3/8/2022

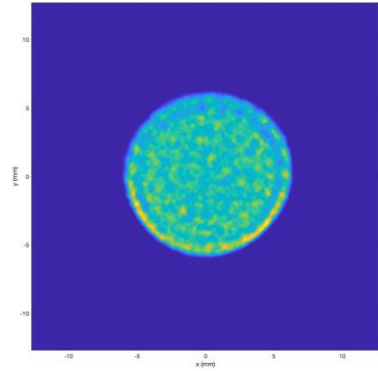
409 CeC
Core Simulation 205kV

YAG 1

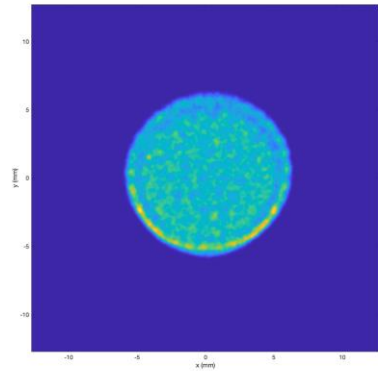
4.2829 m



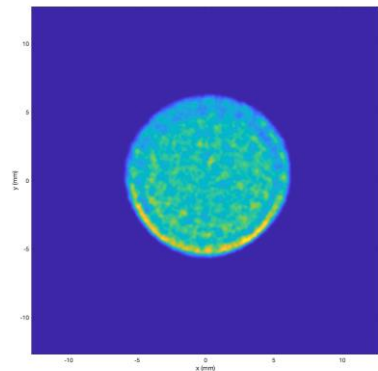
+10% C



reference

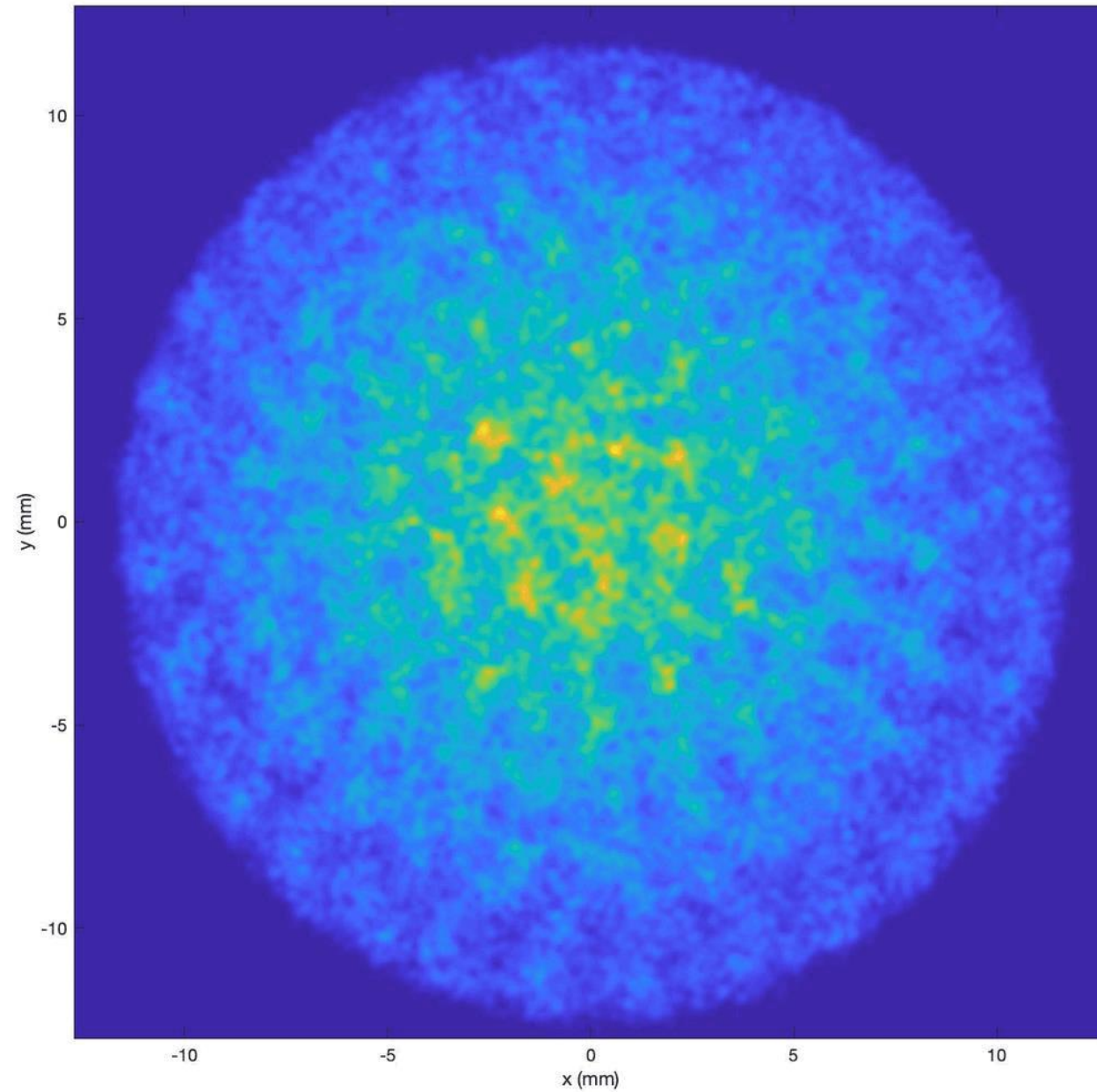


-10% C

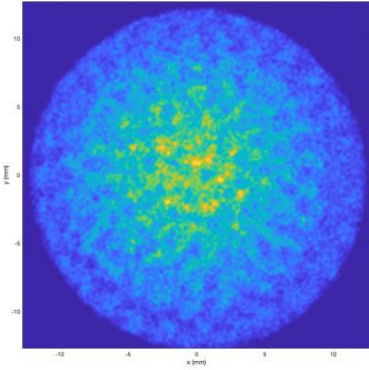


YAG 2

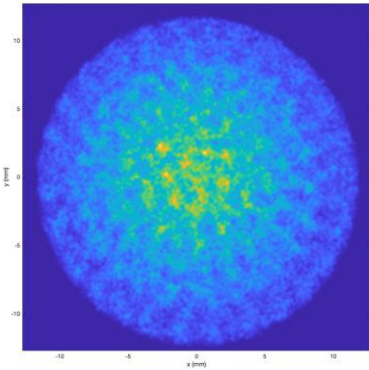
8.9879 m



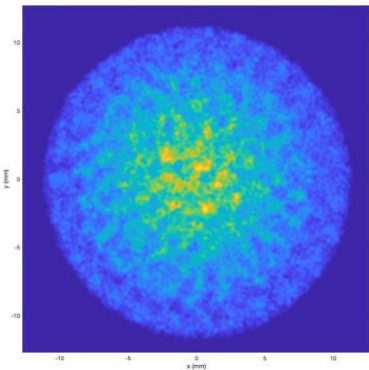
+10% C



reference

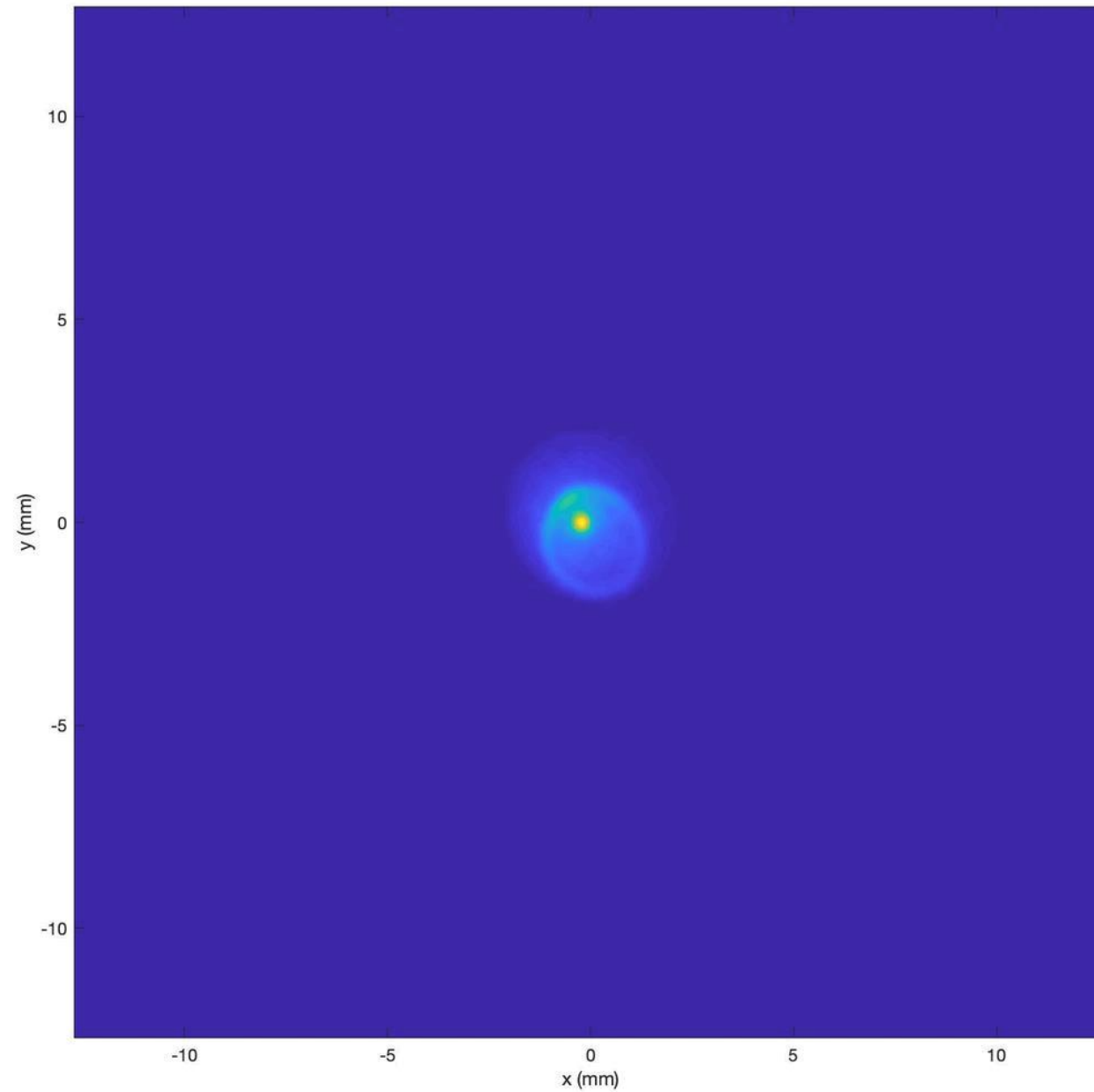


-10% C

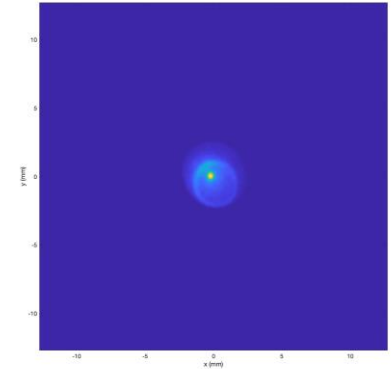


after 704

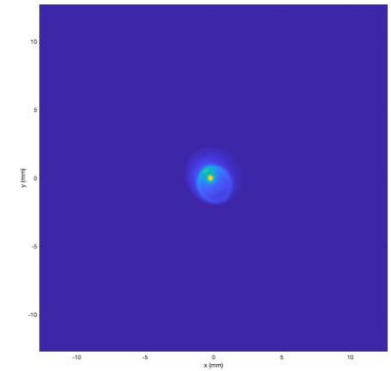
13.500 m



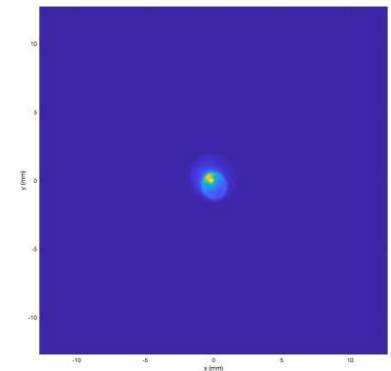
+10% C



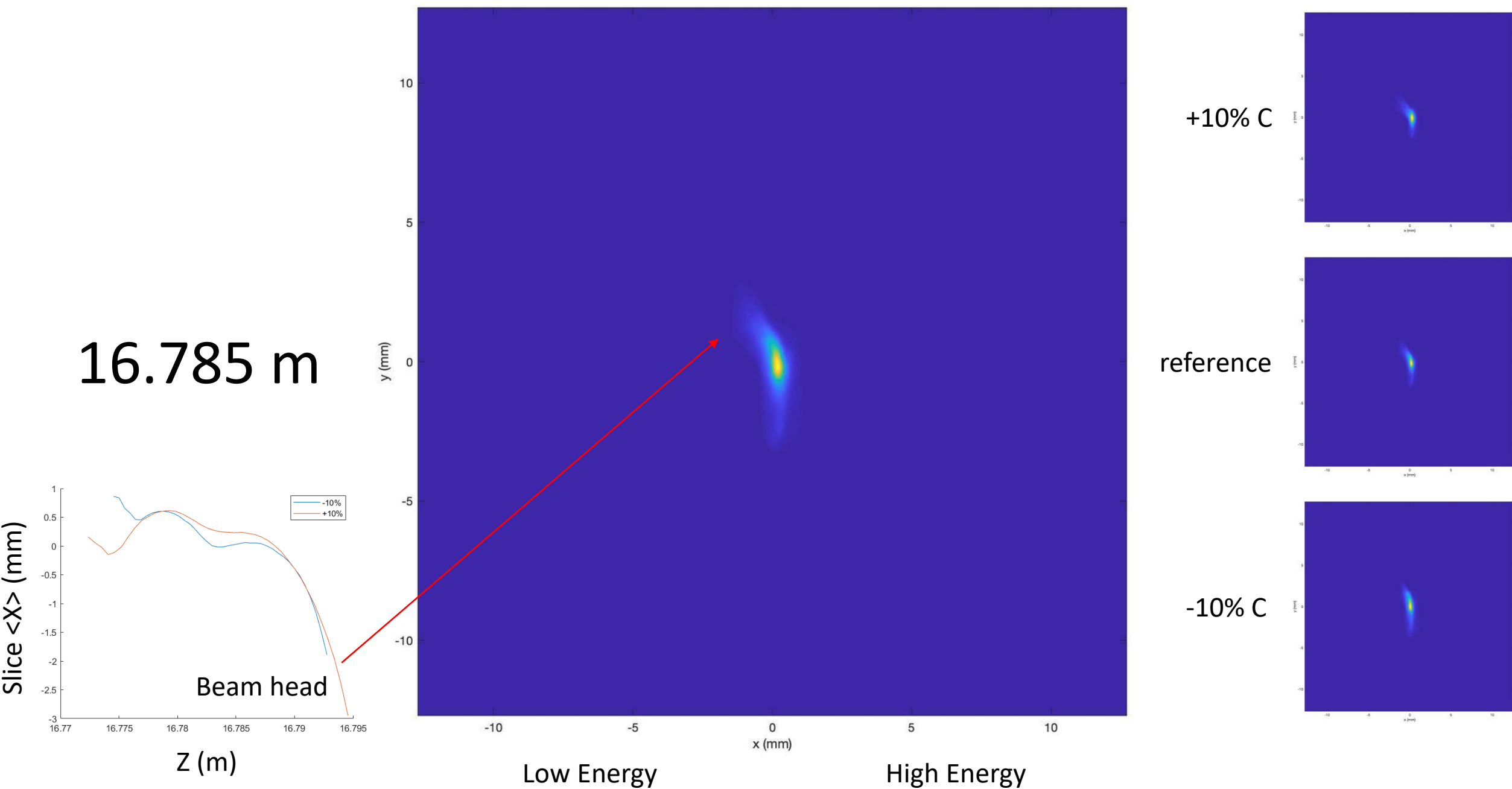
reference



-10% C

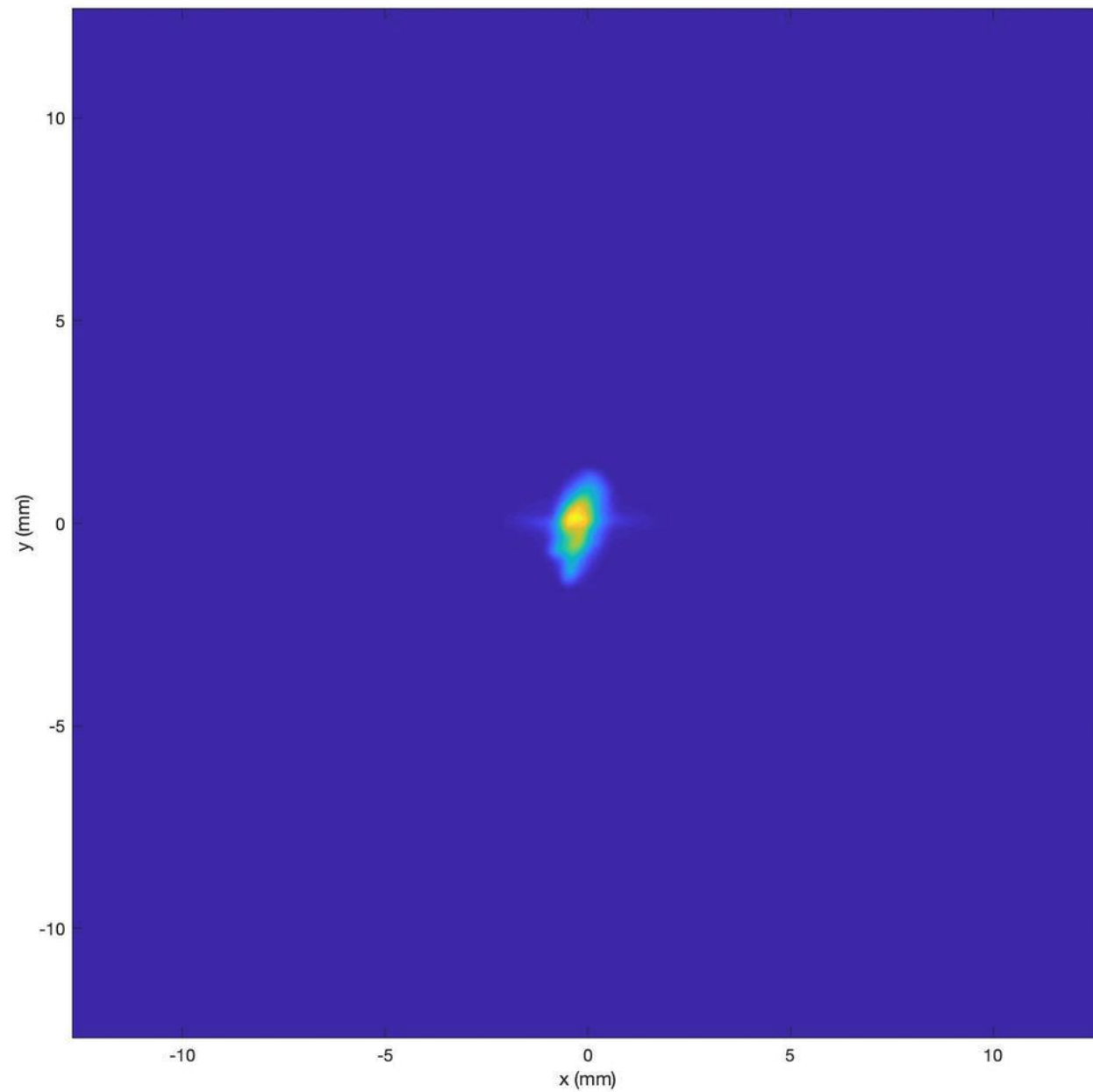
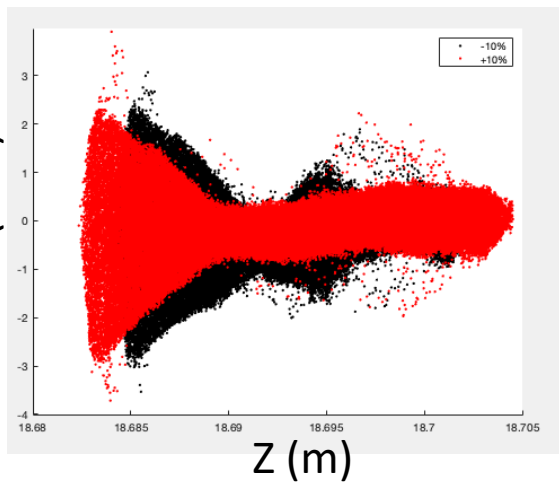


DL YAG

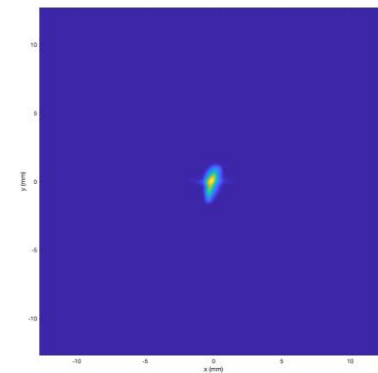


MBPM

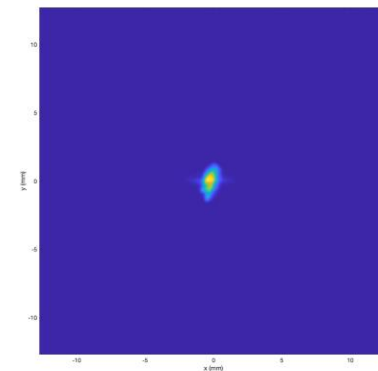
18.694 m



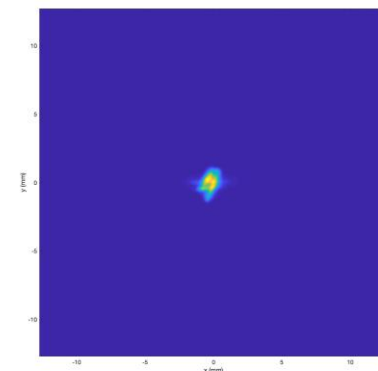
+10% C



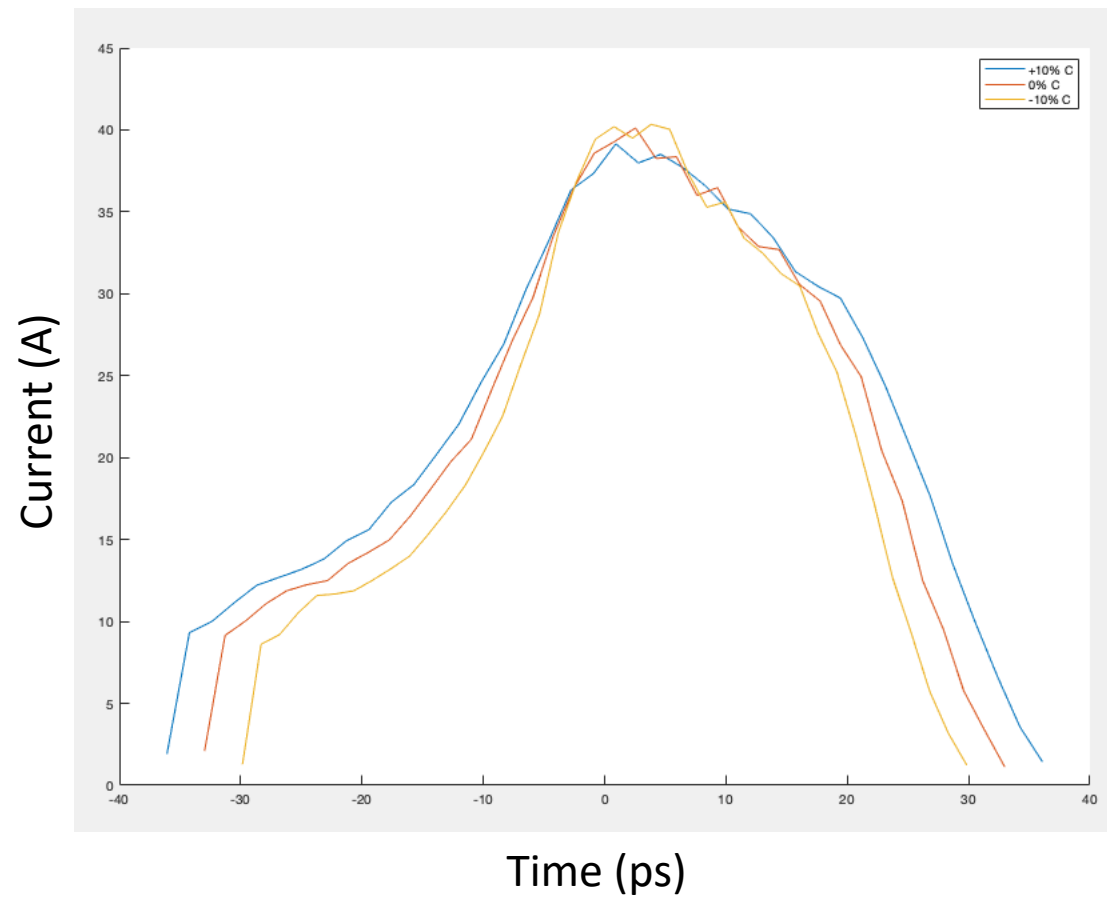
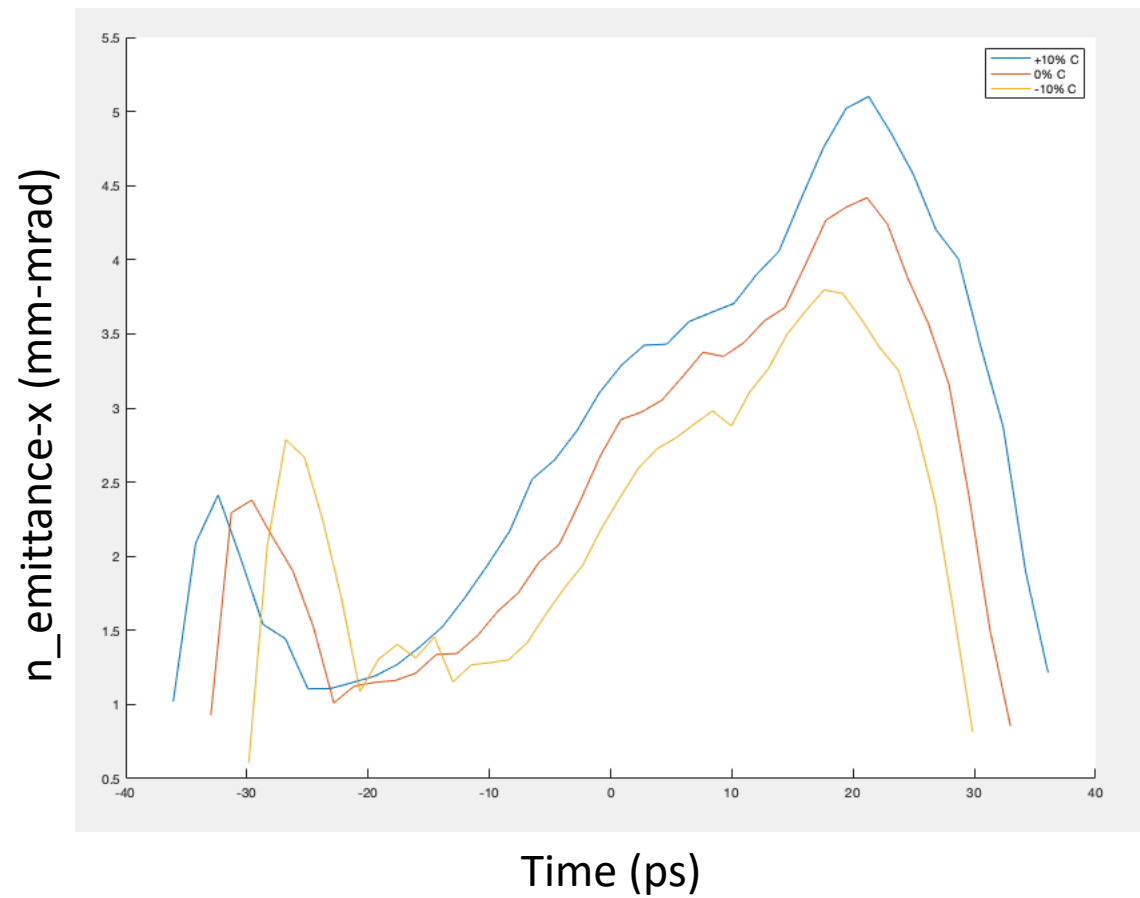
reference



-10% C



MBPM

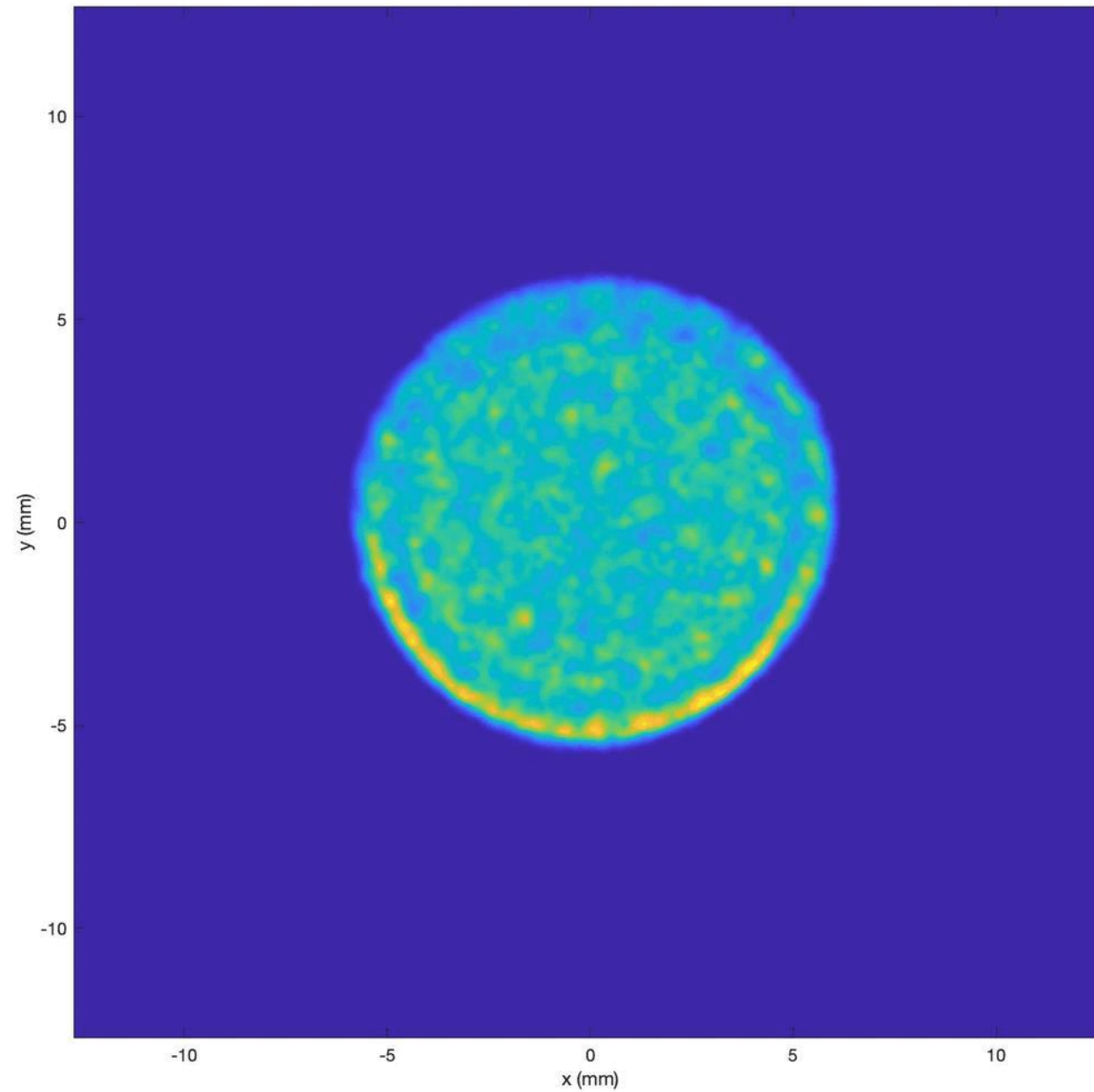


Time = 0 for $\langle z \rangle$

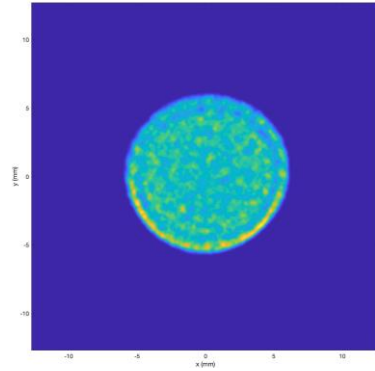
409 CeC
Edge Simulation 175kV

YAG 1

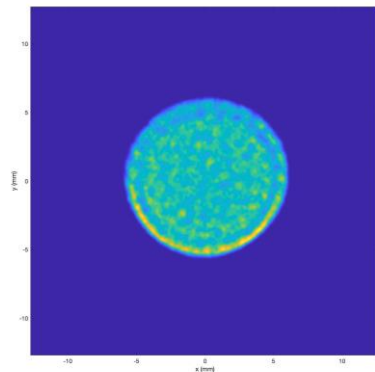
4.2829 m



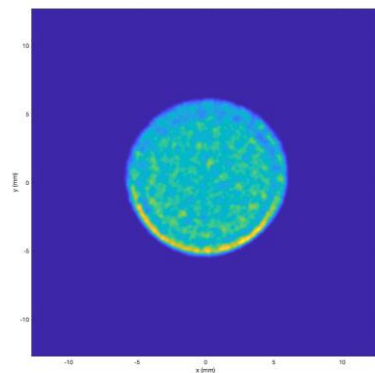
+10% C



reference

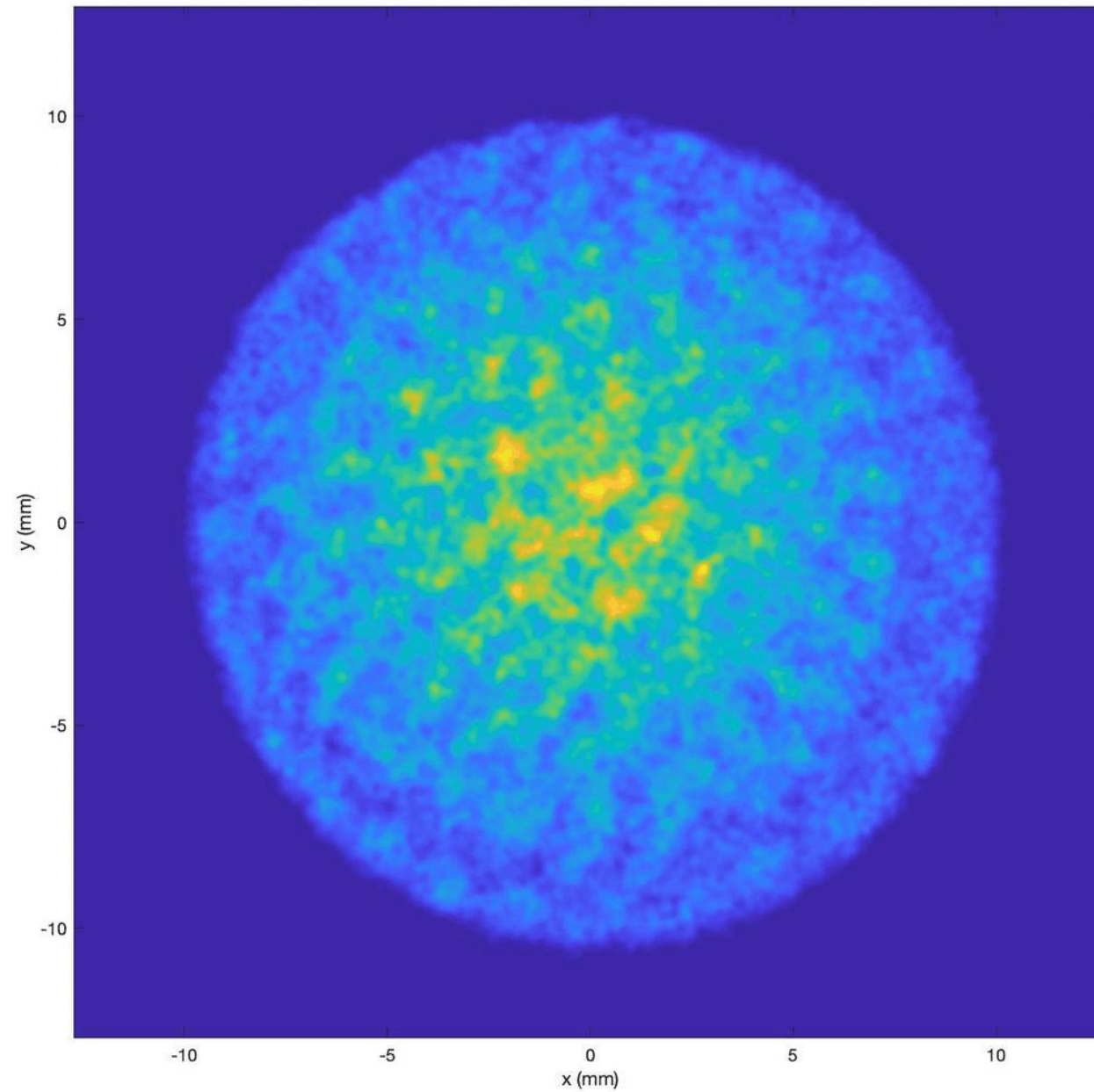


-10% C

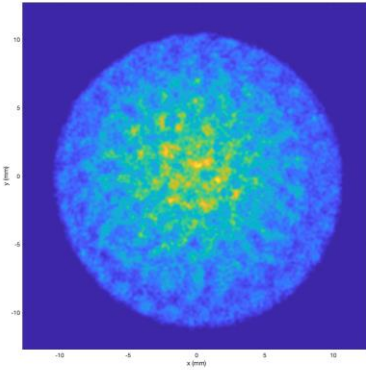


YAG 2

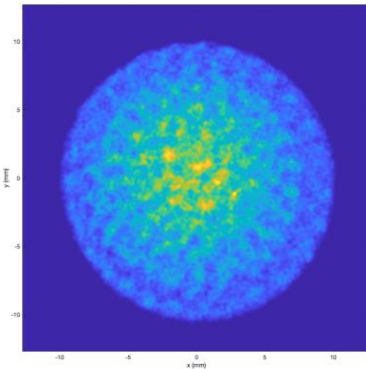
8.9879 m



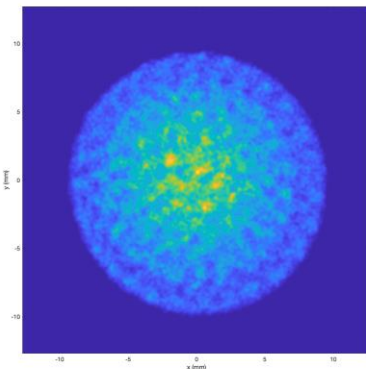
+10% C



reference

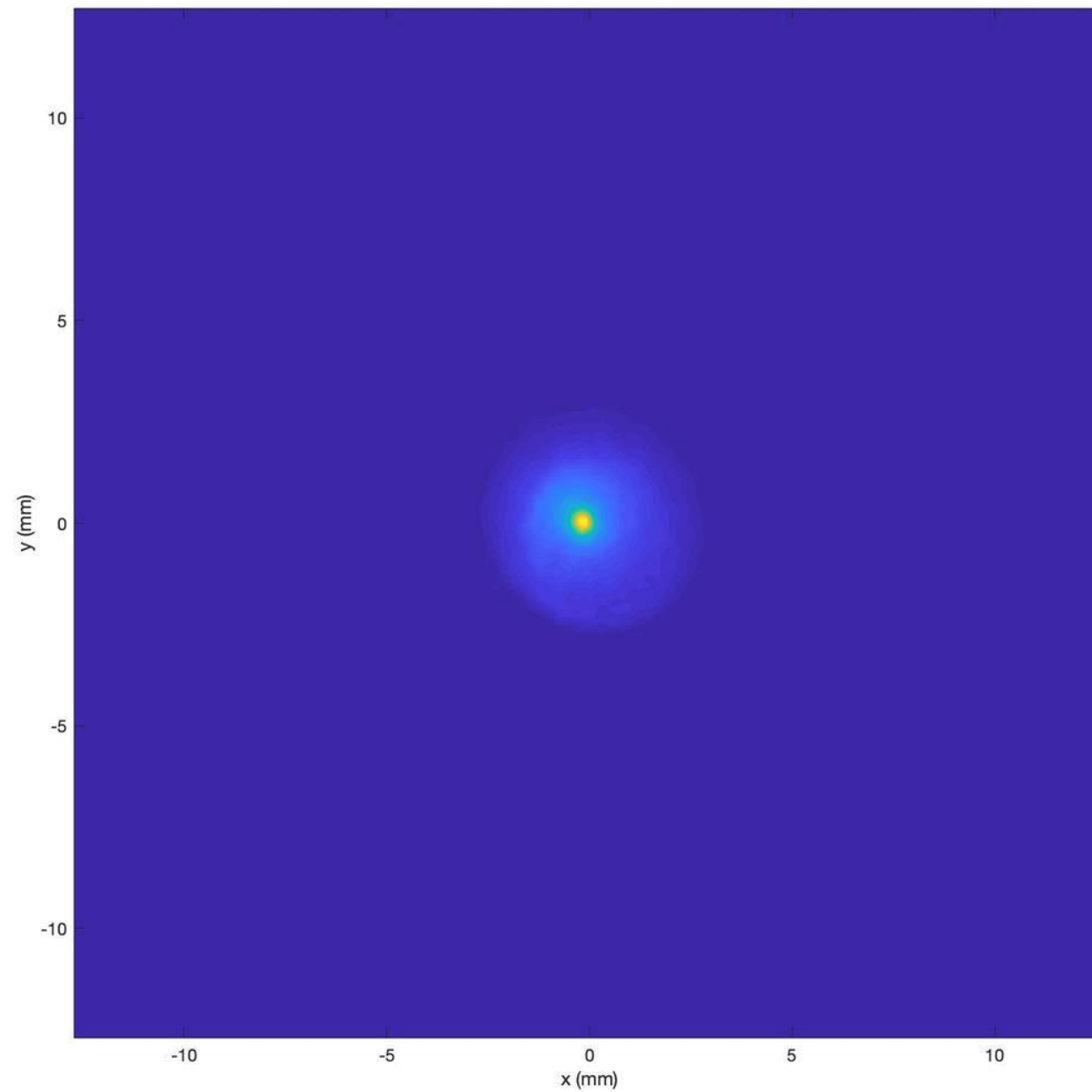


-10% C

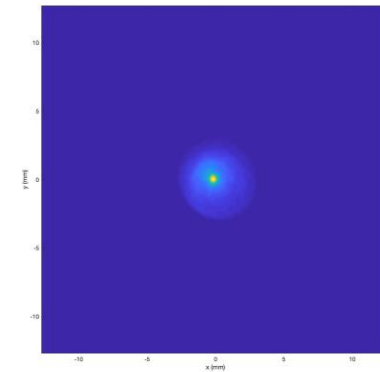


after 704

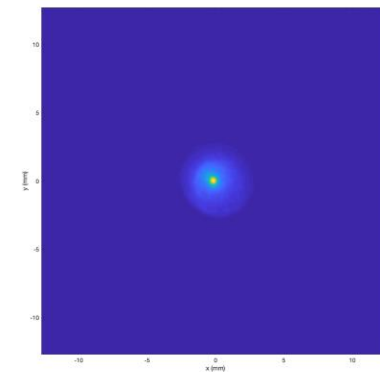
13.500 m



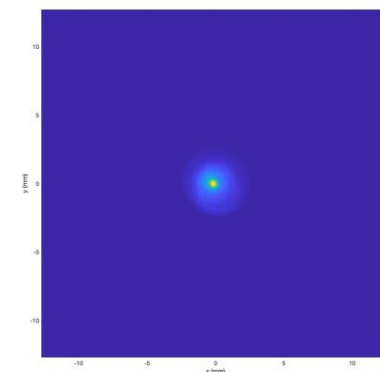
+10% C



reference

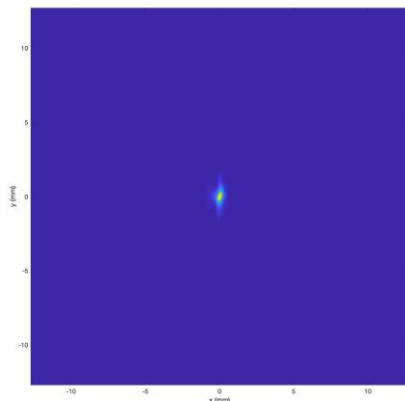


-10% C



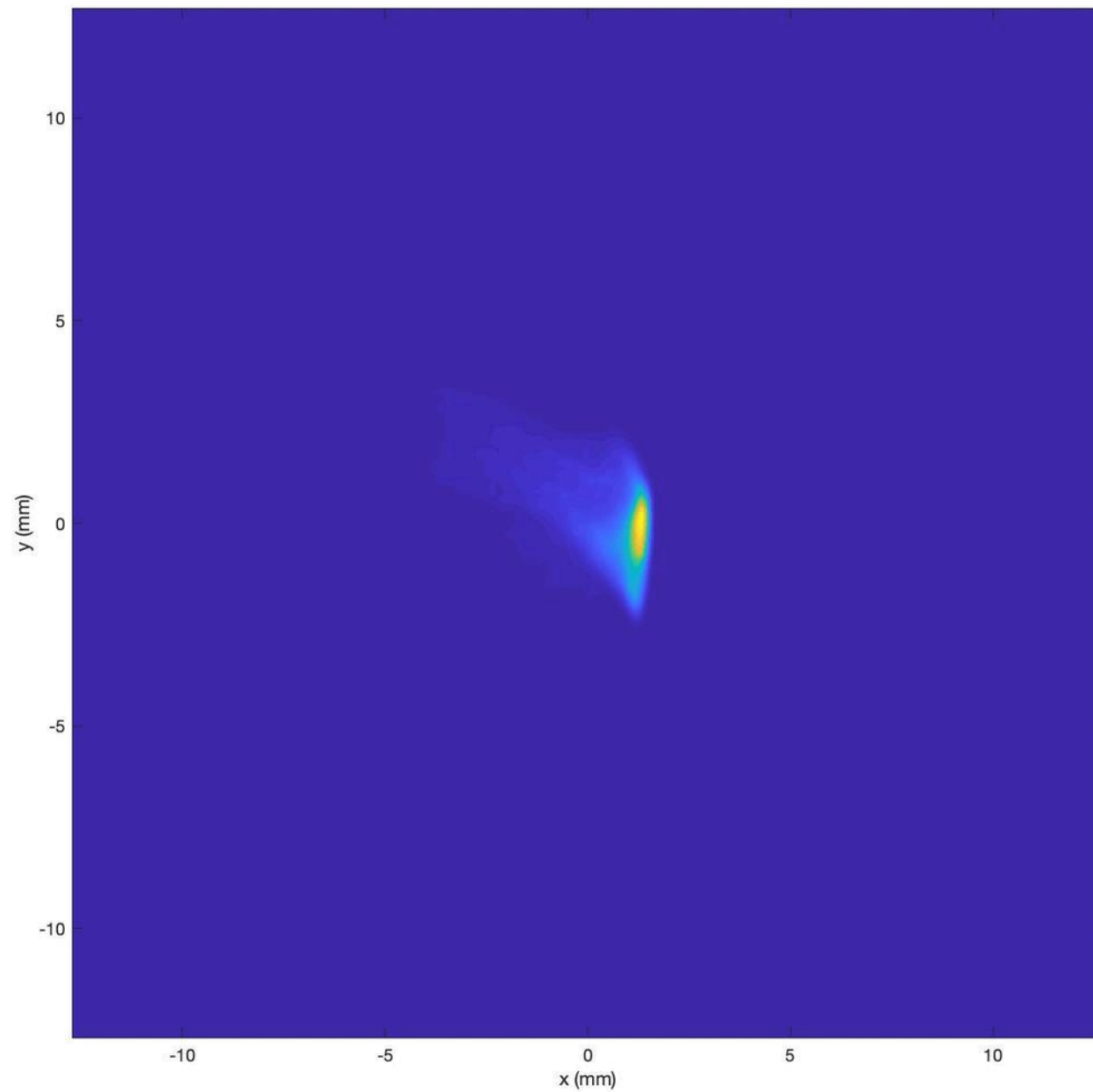
DL YAG

2D sim.



16.785 m

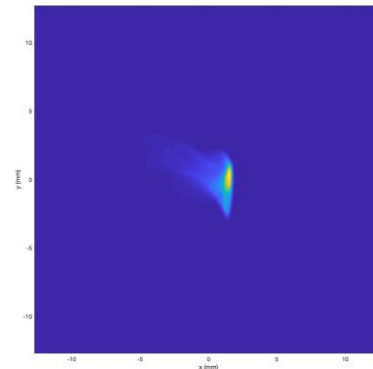
CeC 09/4



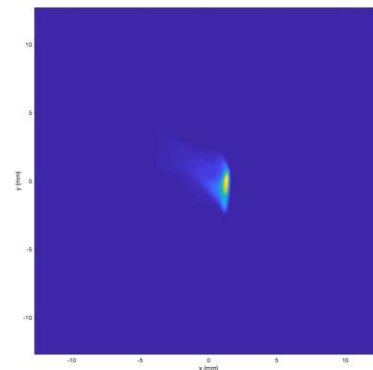
Low Energy

High Energy

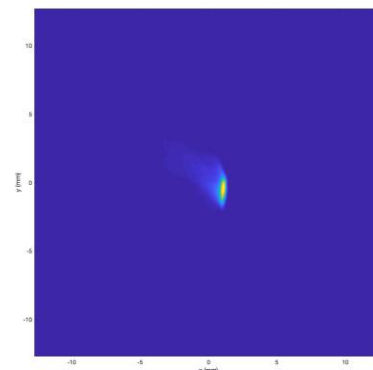
+10% C



reference

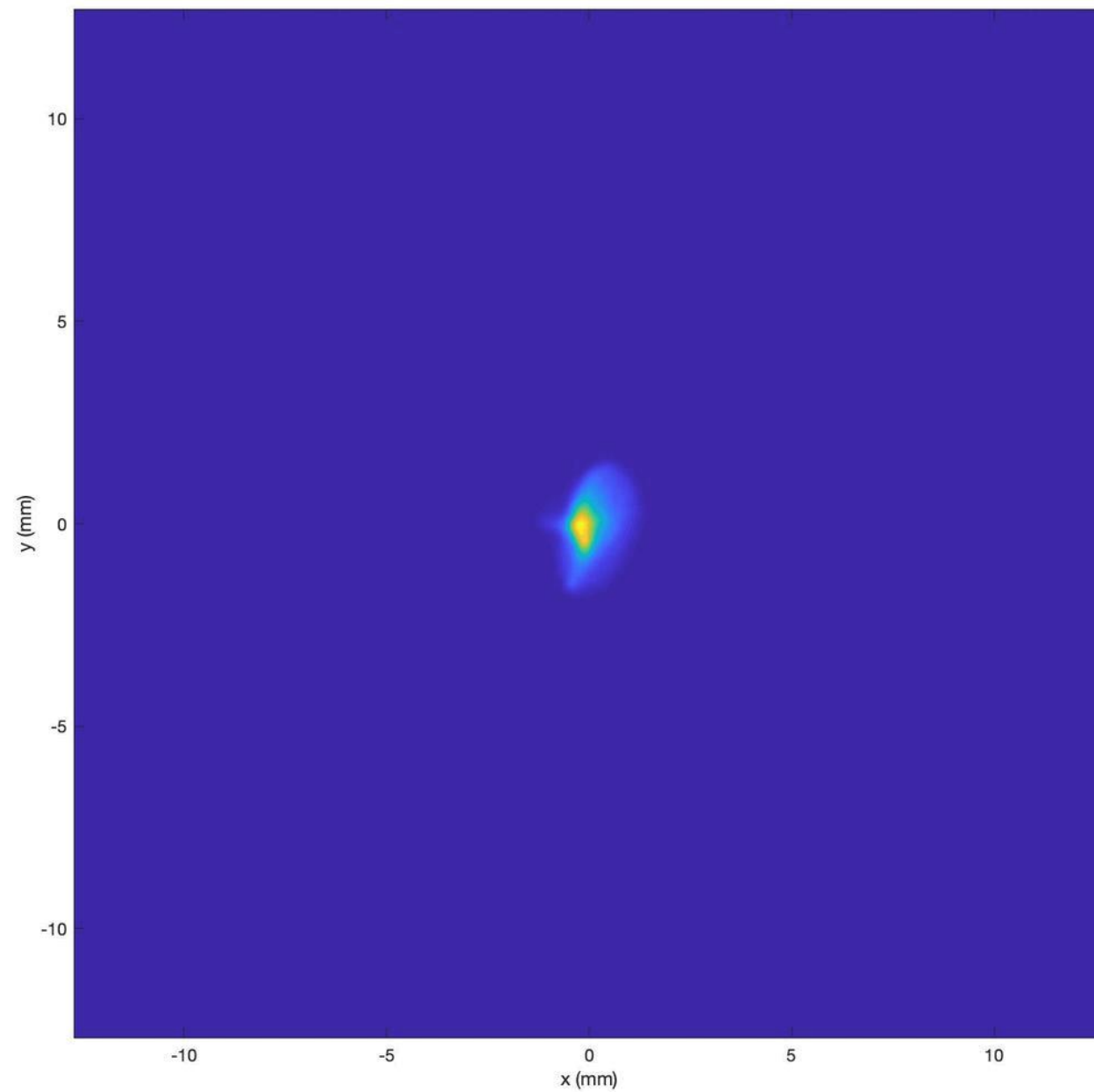


-10% C

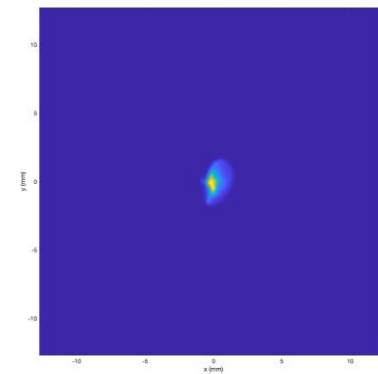


MBPM

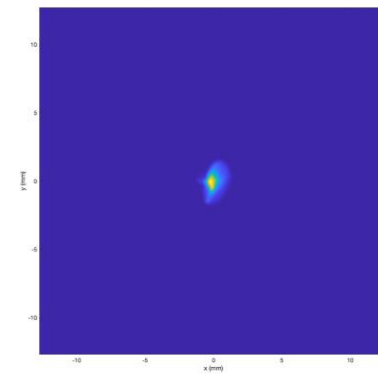
18.694 m



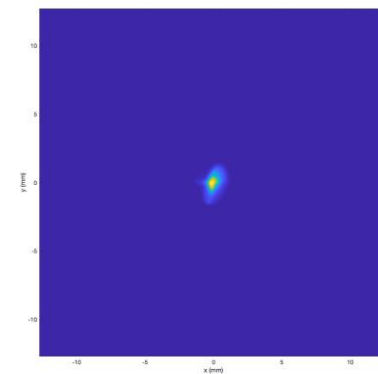
+10% C

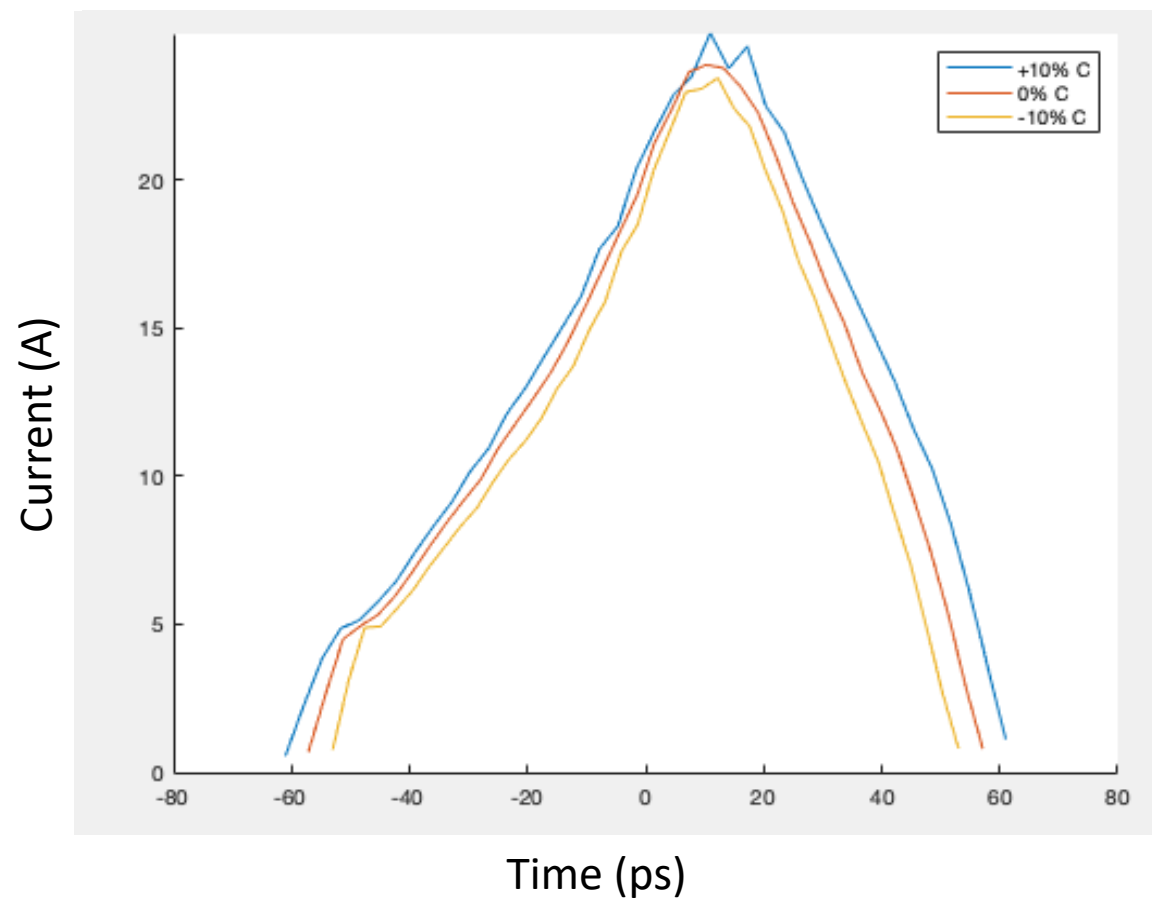
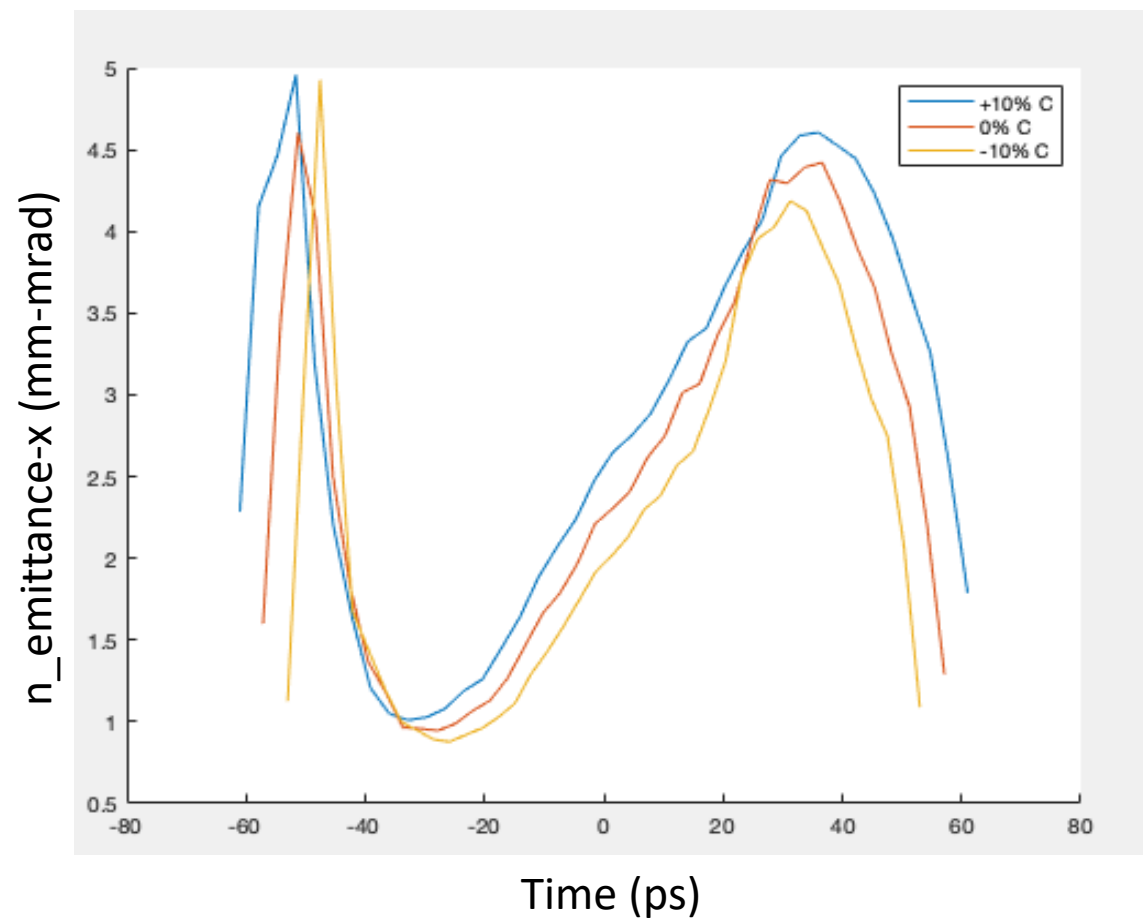


reference



-10% C





Time = 0 for $\langle z \rangle$

Laser Intensity Jitter in Simulation of 409 CeC

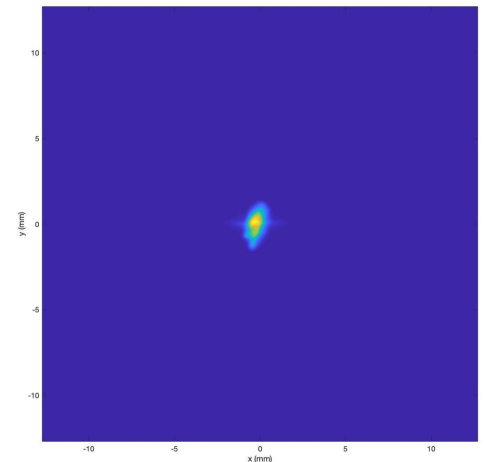
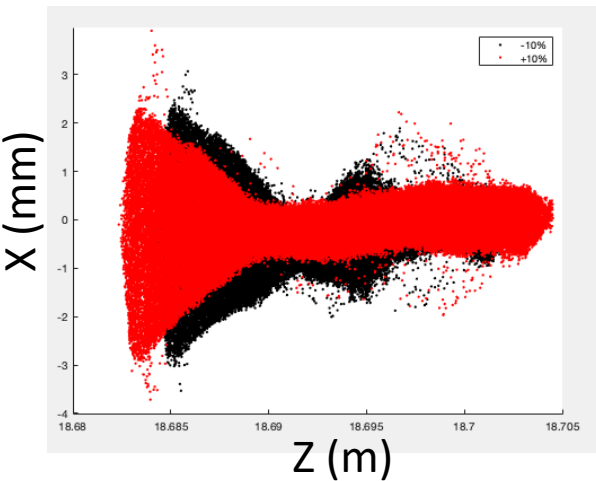
KS

12/8/2022

409 CeC Core Simulation 205kV

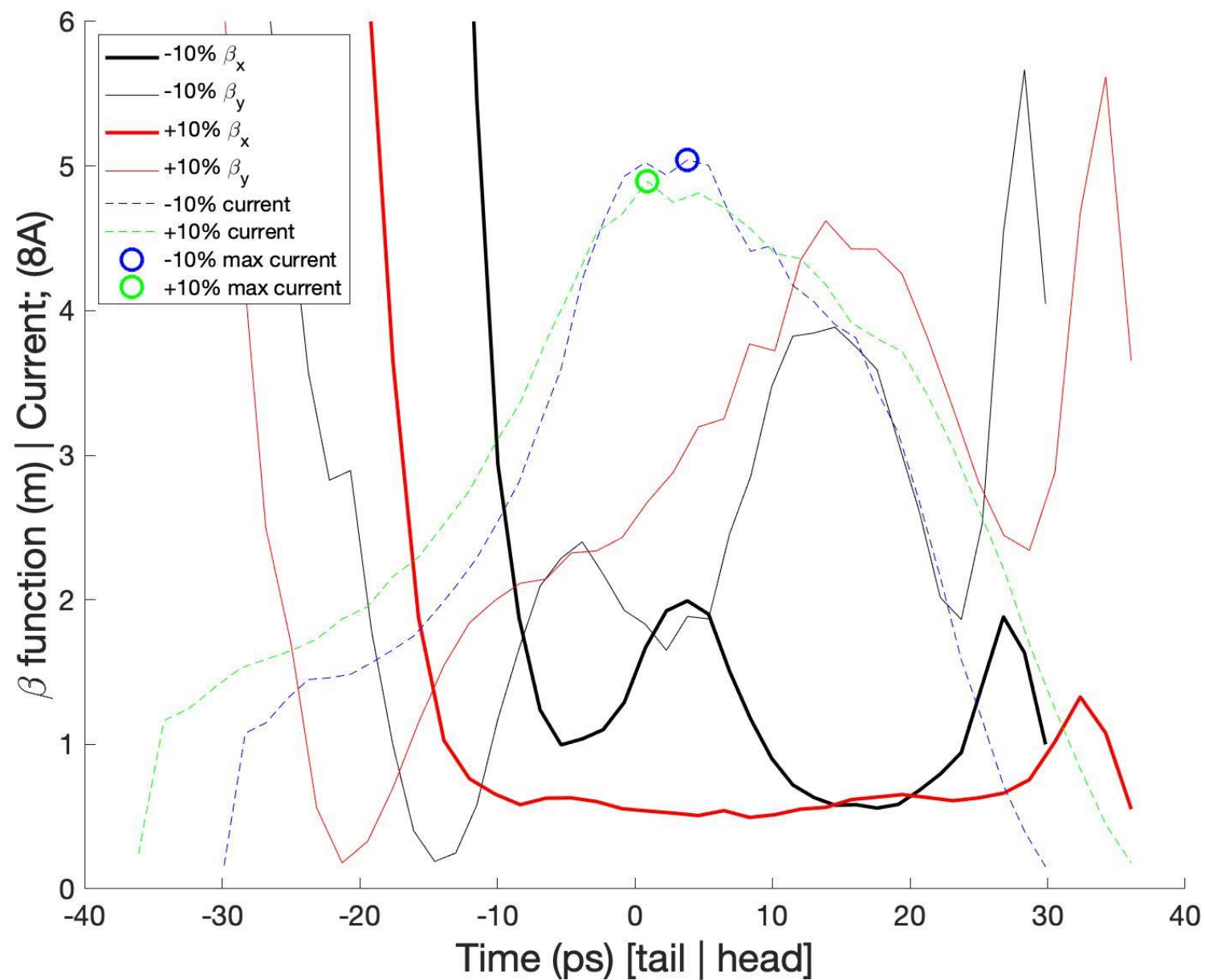
Beta function at MBPM
18.694 m

-10% Charge & +10% Charge



	-10 %	+10 %
Max current (A)	40.34	39.15
Max current location (ps)	3.83	0.93
Max current slice β_x (m)	1.99	0.54
Max current slice β_y (m)	1.88	2.68

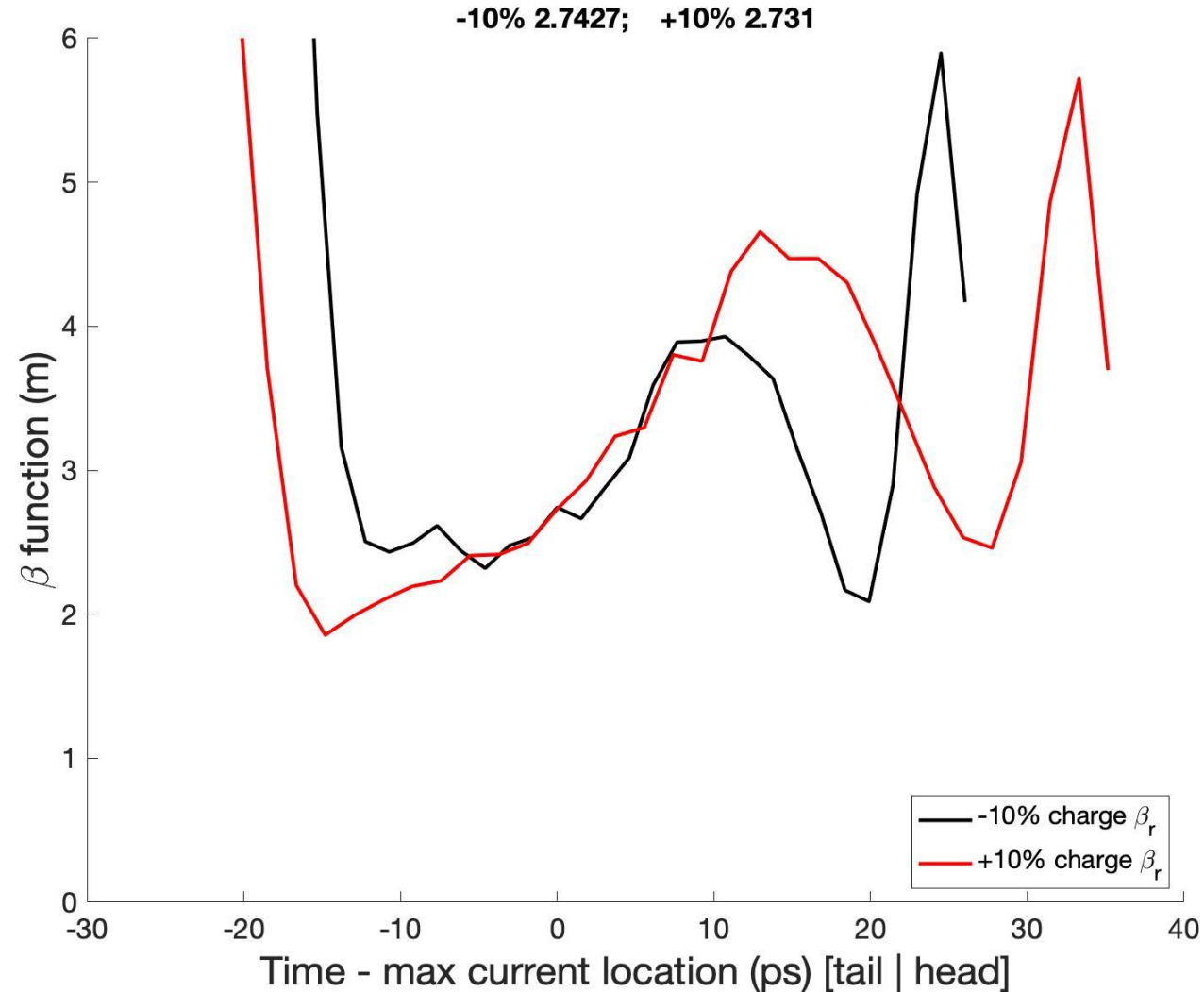
Slice width 1.53 ps



Def: $\beta_r \equiv \sqrt{\beta_x^2 + \beta_y^2}$

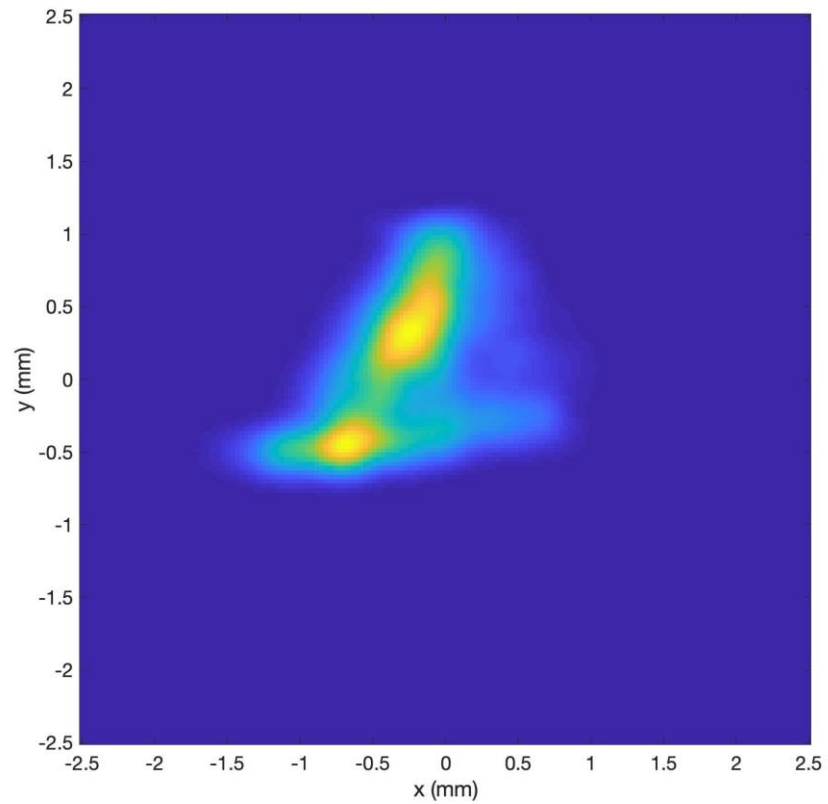
	-10 %	+10 %
Max current (A)	40.34	39.15
Max current location (ps)	0	0
Max current slice β_r (m)	2.74	2.73

Laser intensity jitter may not introduce difference in beta function amplitude of the core slice, but rotation.



Max Current Slice

-10%



+10%

