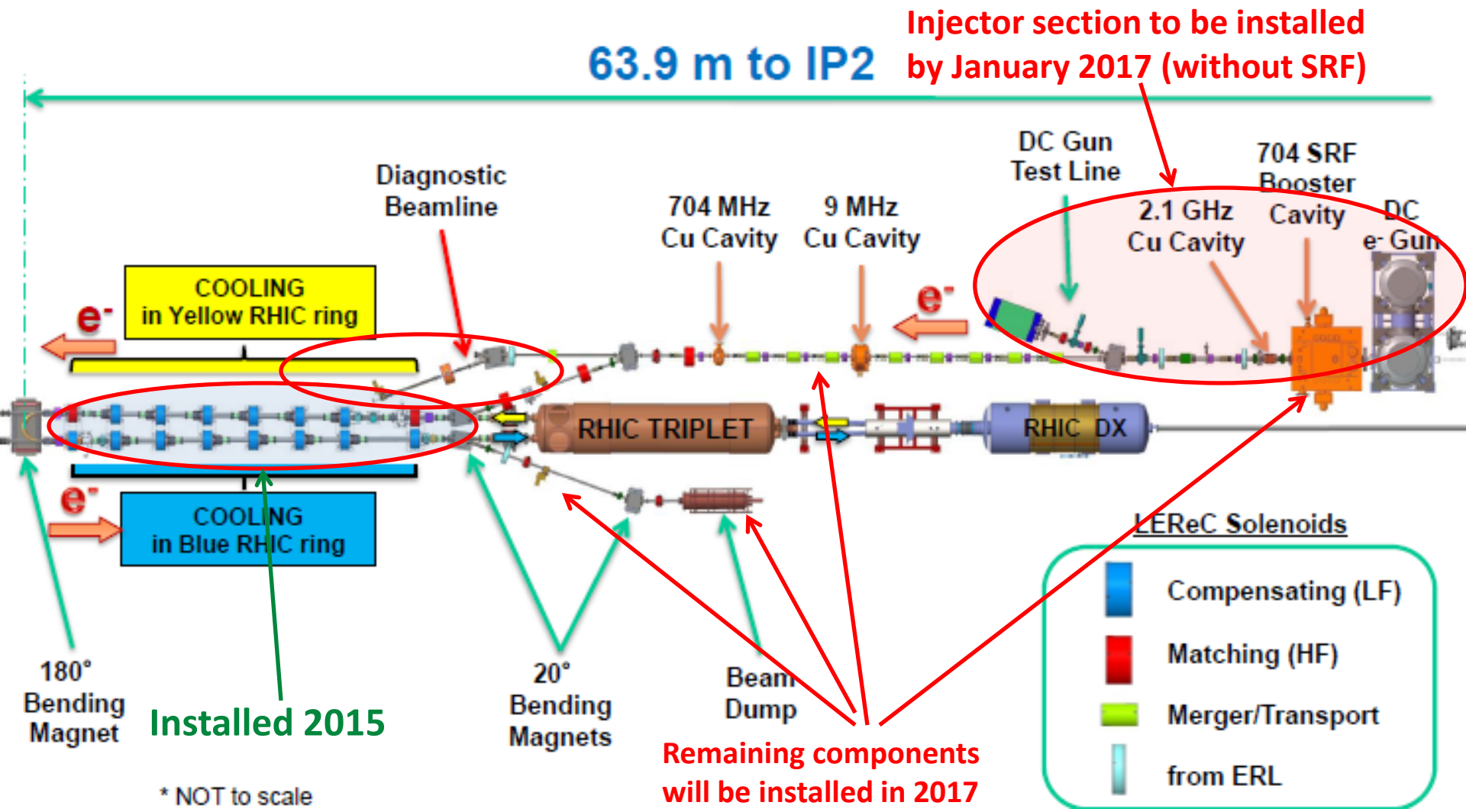
LEReC:

RF diagnostic beam line

D. Kayran

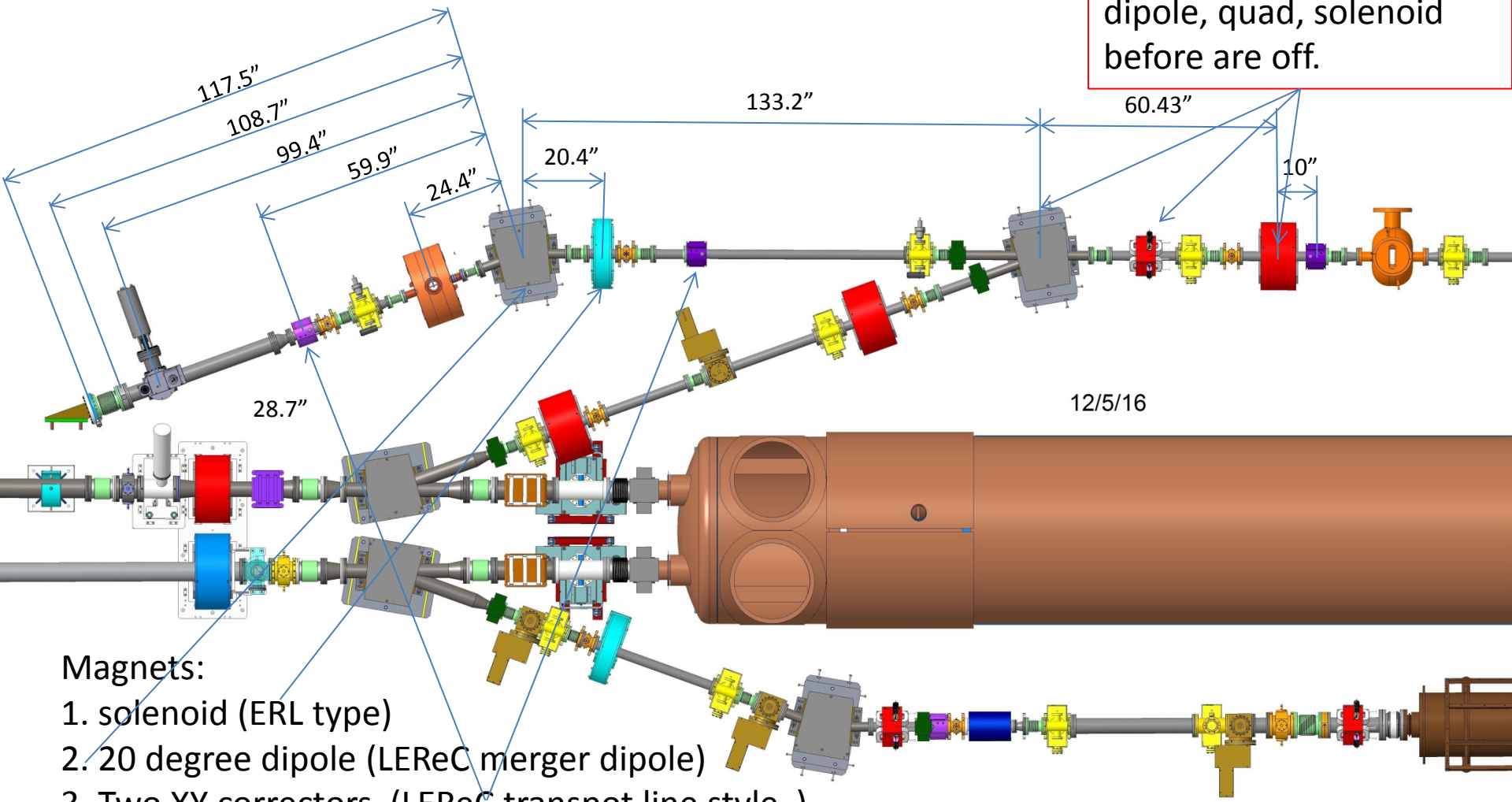
12-05-2016

LEReC layout



Diagnostic line : General Layout

During longitudinal phase measurements LEReC magnets :merger dipole, quad, solenoid before are off.

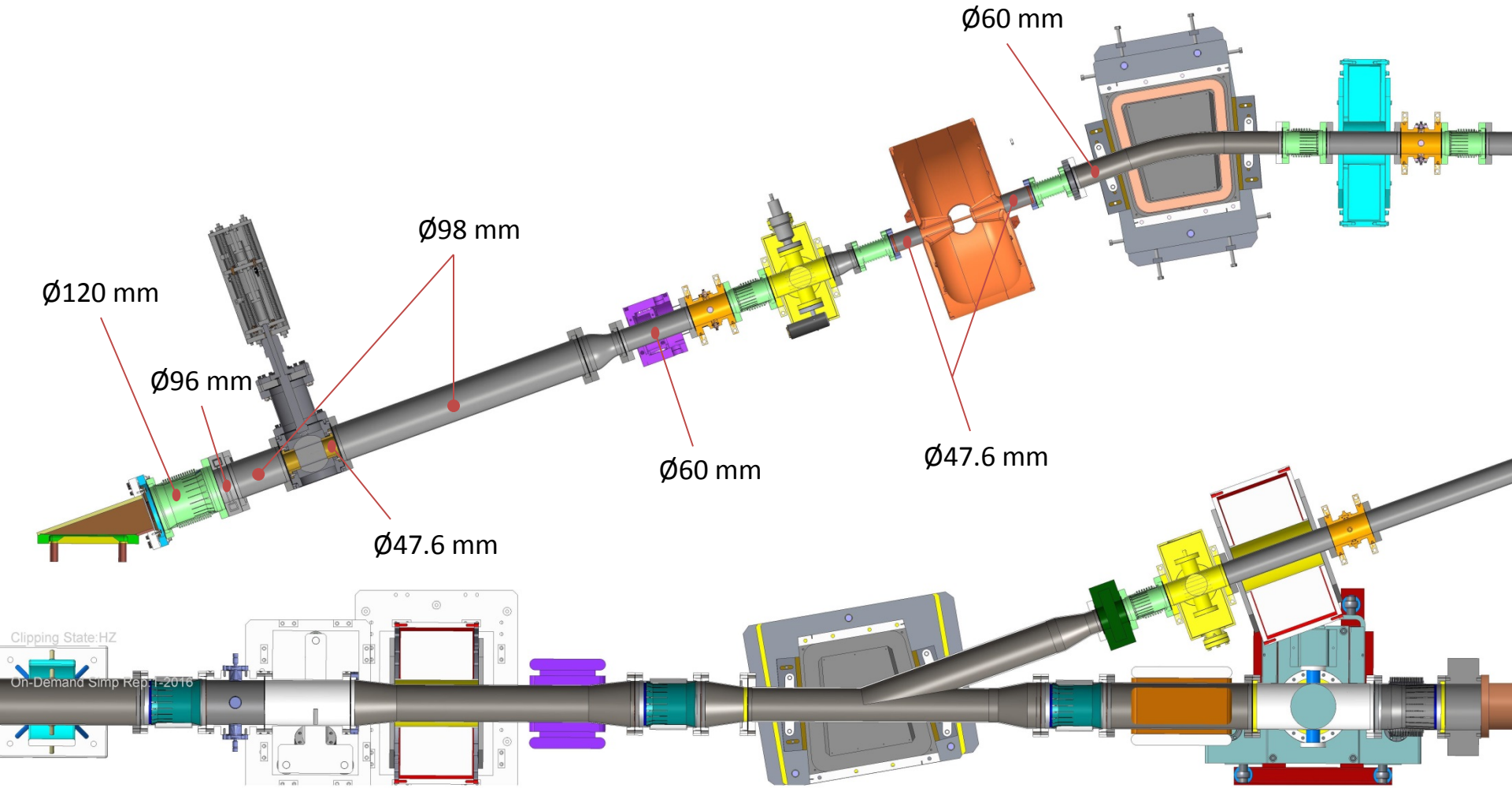


Magnets:

1. solenoid (ERL type)
2. 20 degree dipole (LEReC merger dipole)
3. Two XY correctors (LEReC transpot line style)

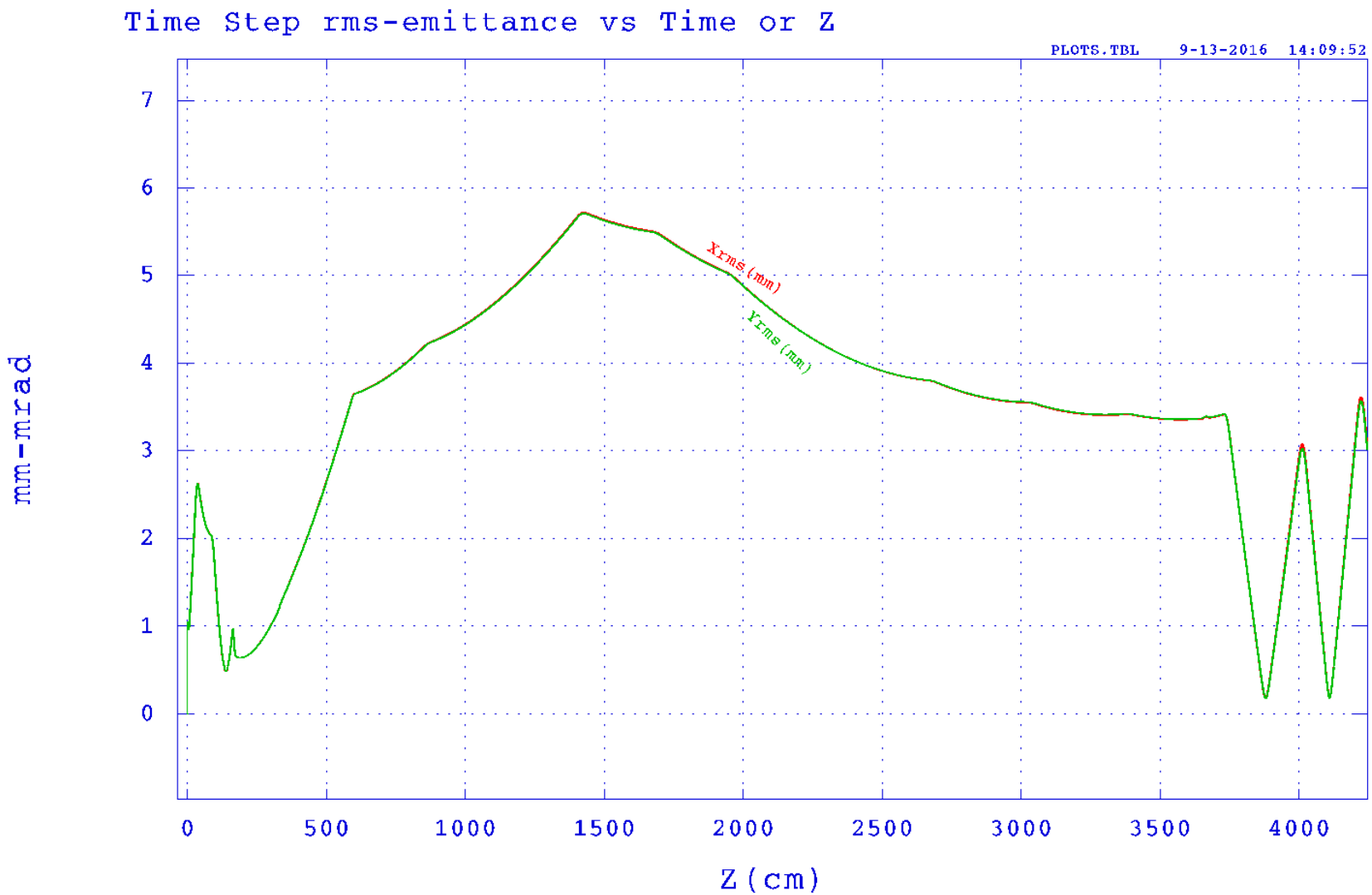
See next slide ->

Diagnostic line : apertures



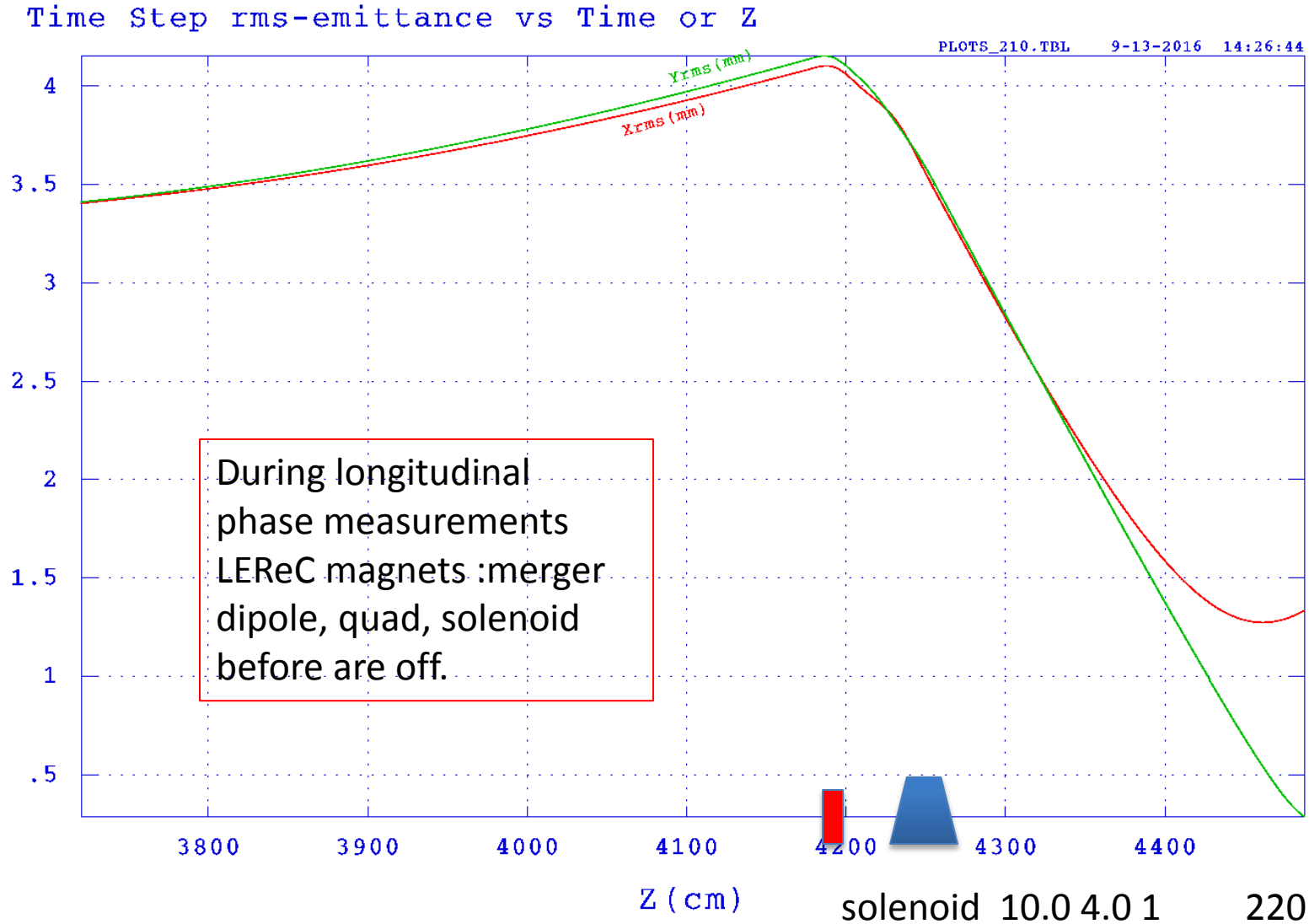
1.6 MeV Q=130pC RMS envelopes

LEReC input file uf38.inp



1.6 MeV Q=130pC RMS envelopes in RF diagn. line sol off

LEReC input file uf38.inp



σx=1.2 mm

σy= 0.25mm

σx/σy=6

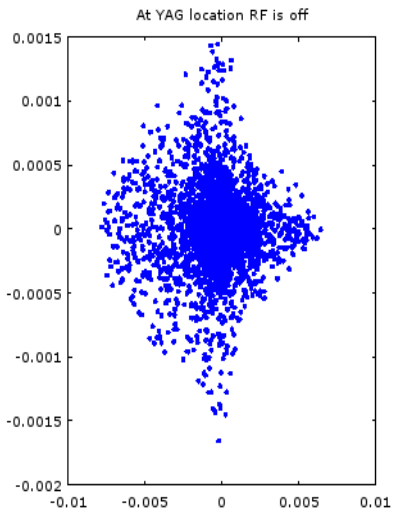
solenoid 10.0 4.0 1 220

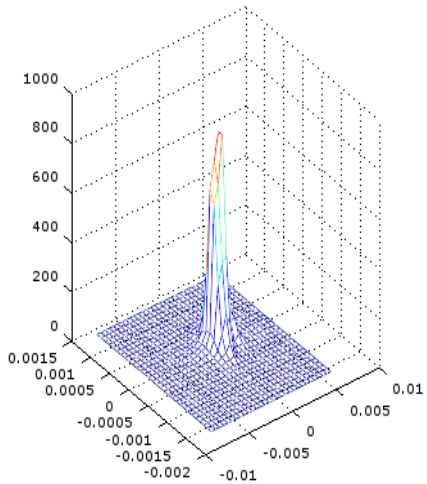
Beam at YAG and dump RF is off

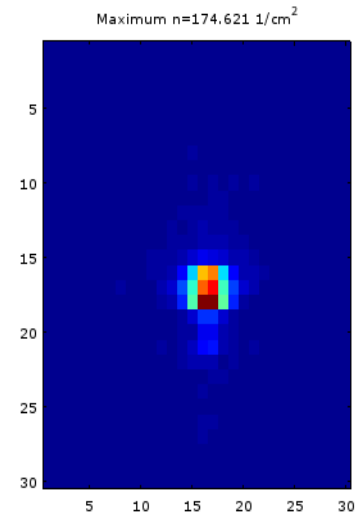
n_max=174 1/cm^2

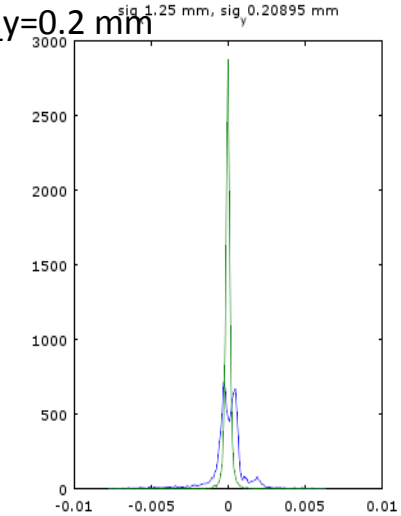
sig_x=1.25mm

sig_y=0.2 mm







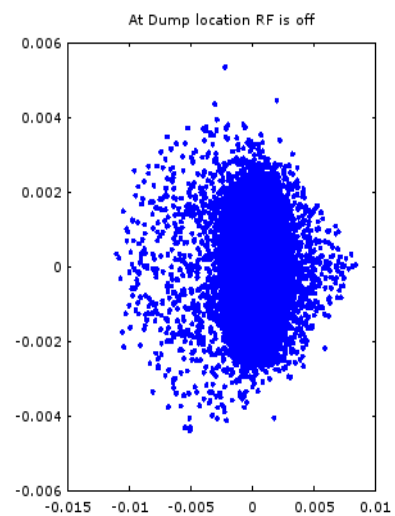


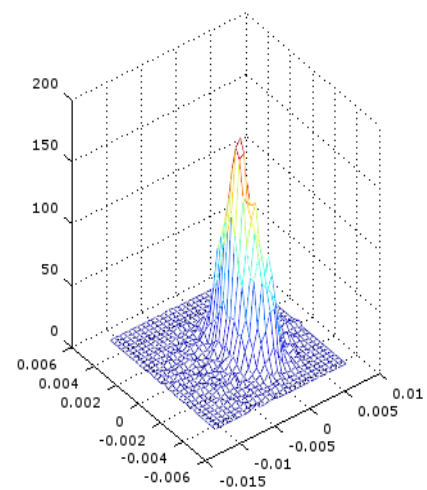
n1/n2=21

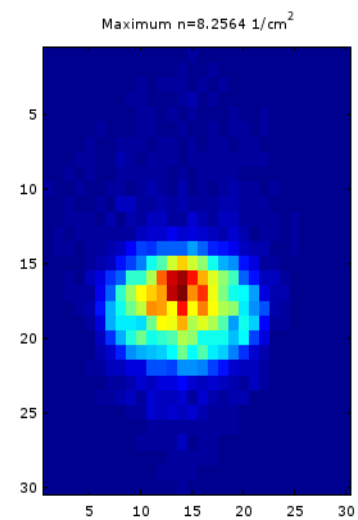
n_max=8.25 1/cm^2

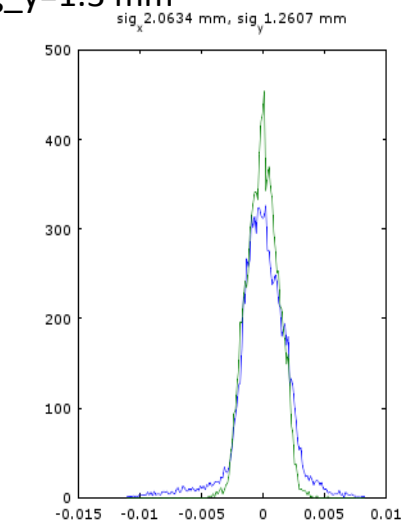
sig_x=2.1mm

sig_y=1.3 mm

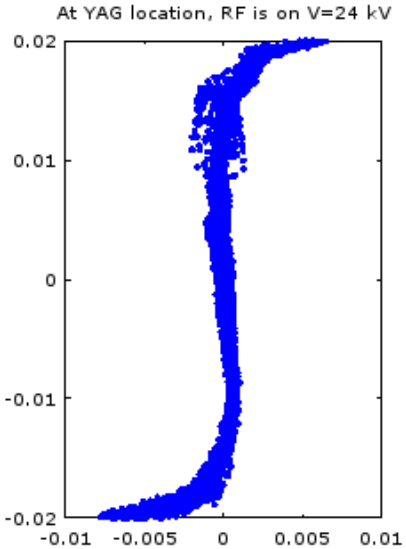


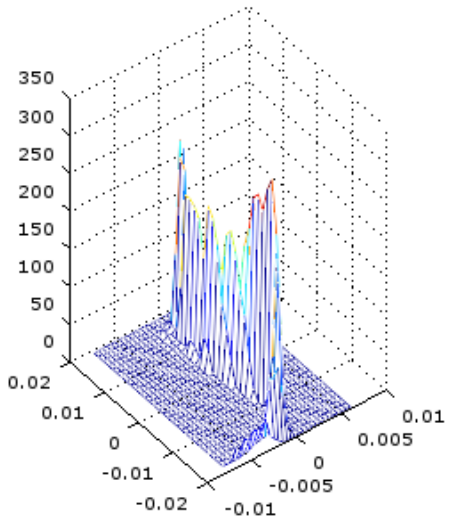




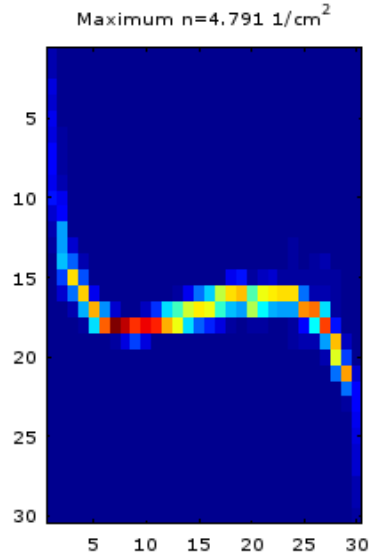


Beam at YAG and dump RF is on

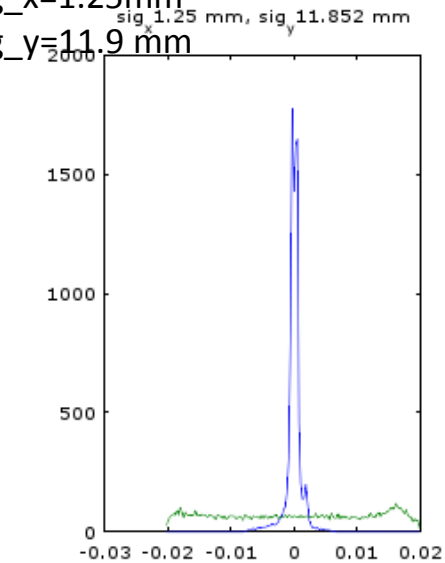




n_max=4.7 1/cm^2



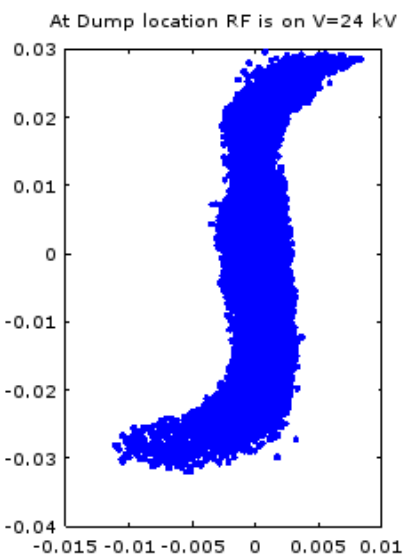
sig_x=1.25mm
sig_y=11.9 mm

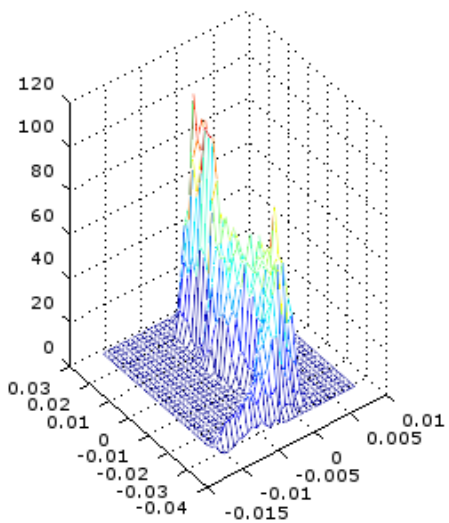


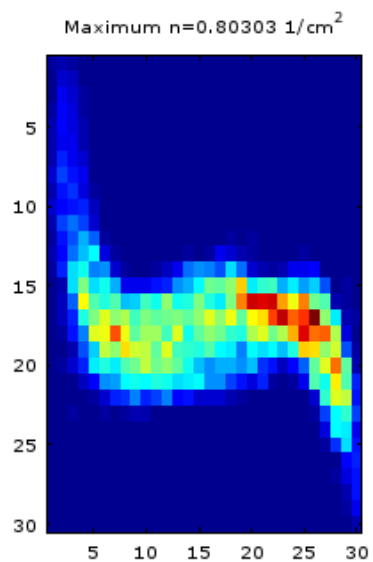
n1/n2=6

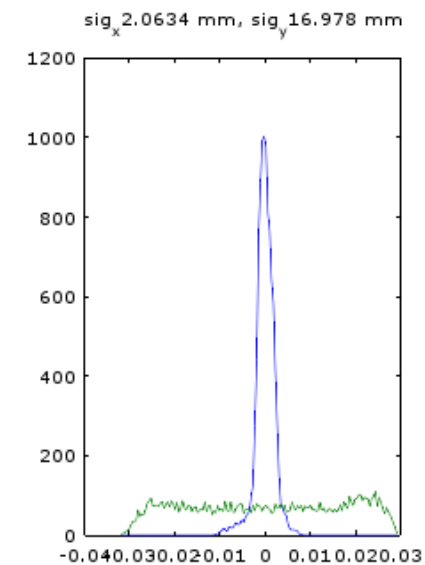
n_max=0.8 1/cm^2

sig_x=2.2mm
sig_y=17.0 mm

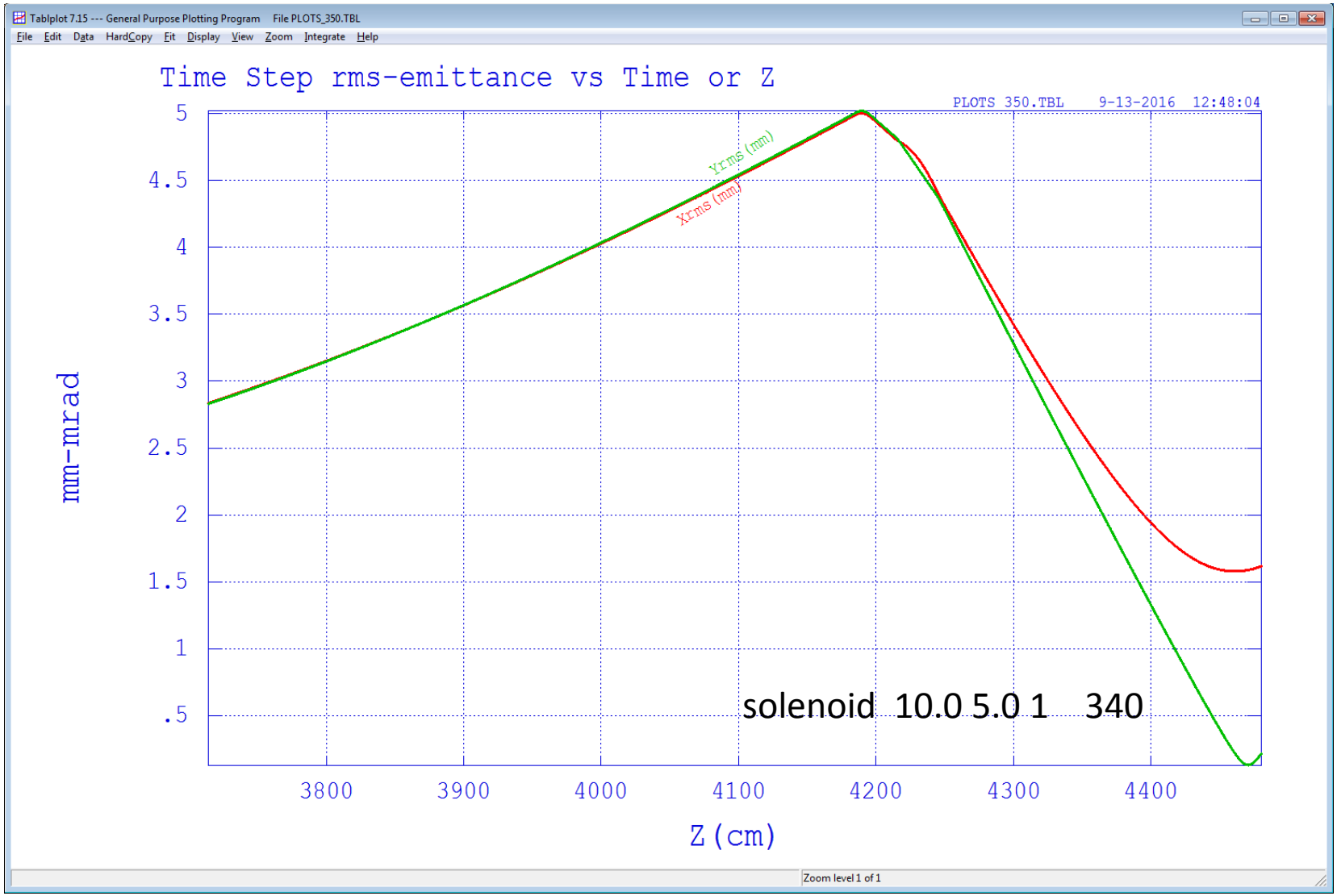








2.6 MeV solenoid is off



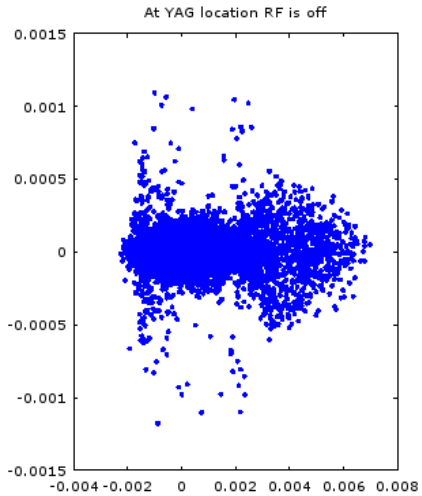
KE=2.6 MeV, Solenoid is on

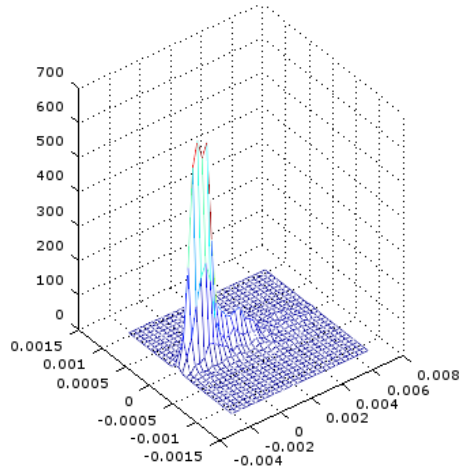
Beam at YAG and dump RF is off

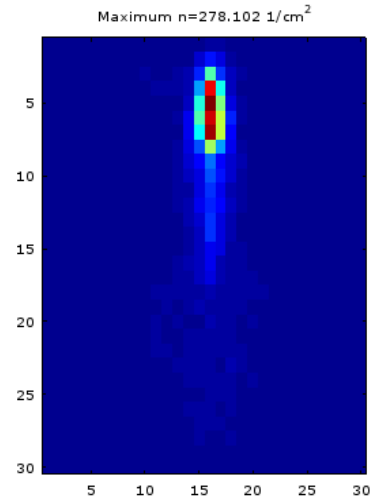
n_max=278 1/cm^2

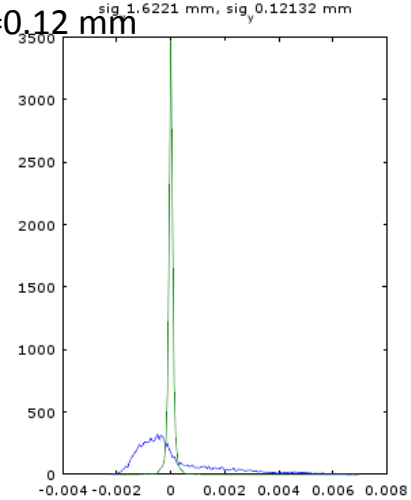
sig_x=1.62mm

sig_y=0.12 mm







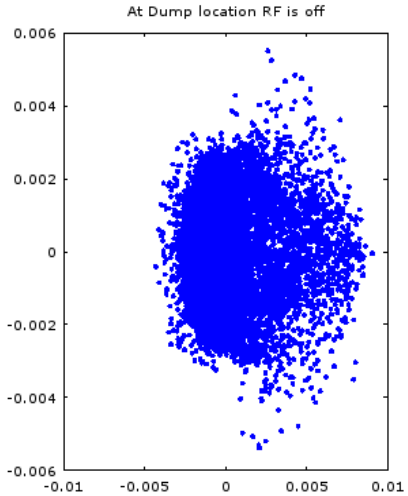


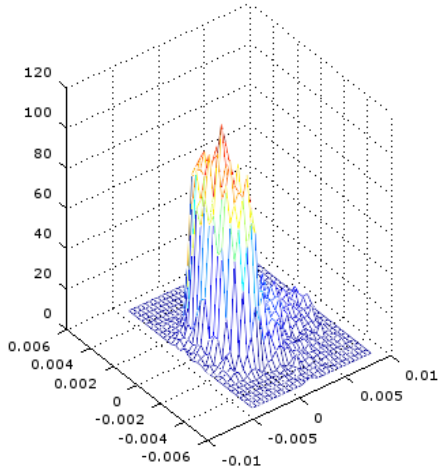
n1/n2=40

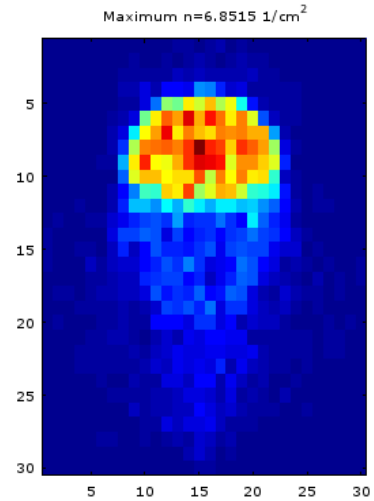
n_max=6.8 1/cm^2

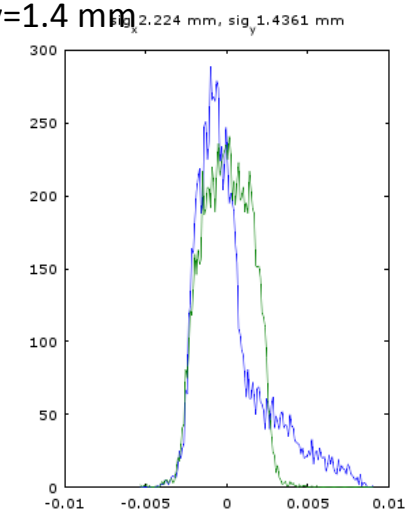
sig_x=2.2mm

sig_y=1.4 mm







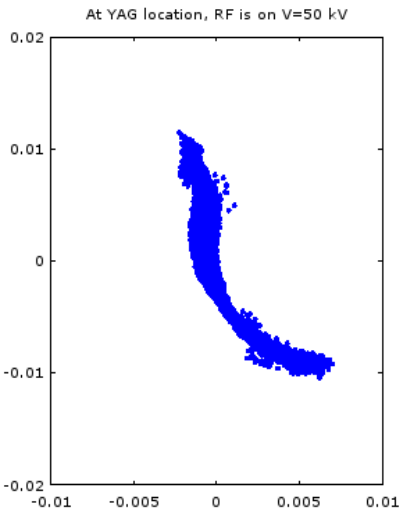


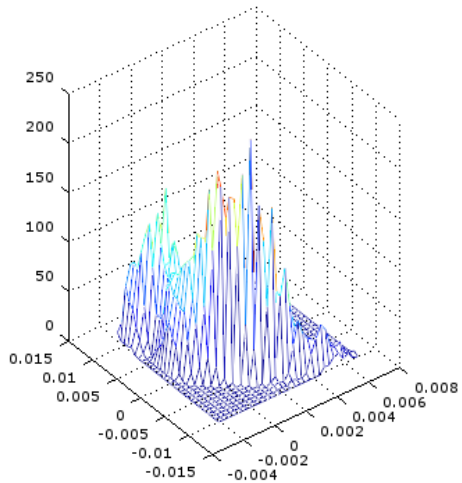
Beam at YAG and dump RF is on

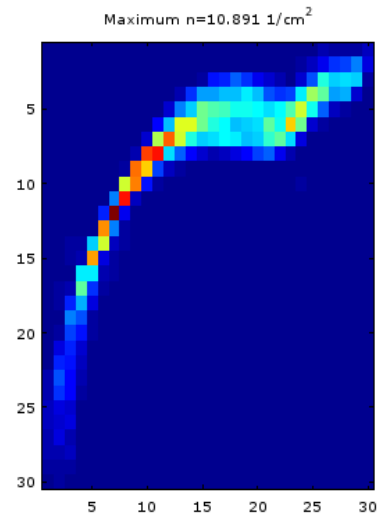
n_max=10.9 1/cm^2

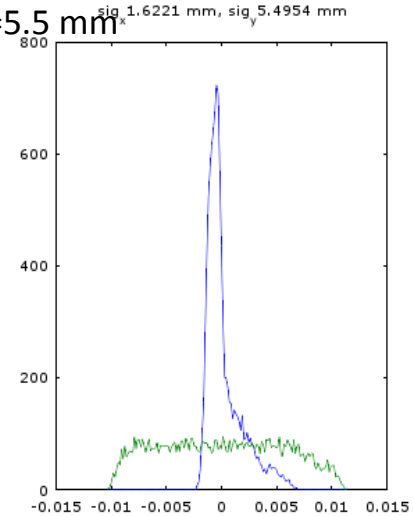
sig_x=1.62mm

sig_y=5.5 mm



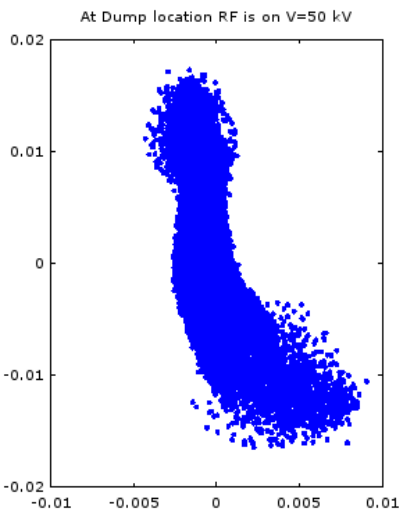
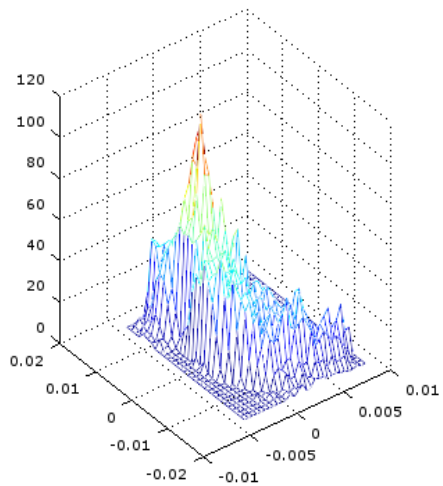
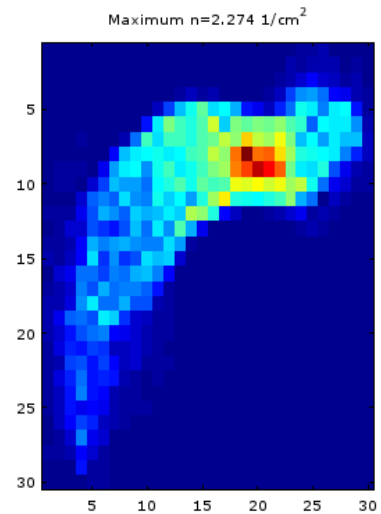
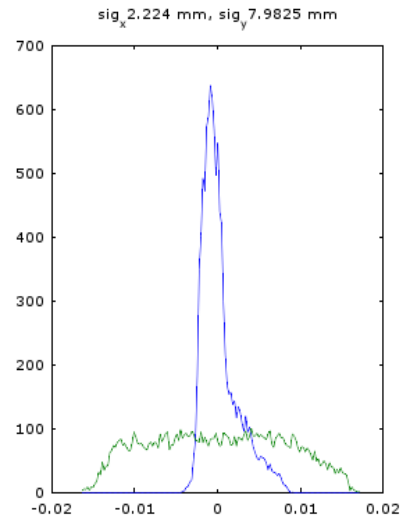






n1/n2=4.7

n_max=2.3 1/cm^2

sig_x=2.24mm

sig_y=7.9 mm