

LEBT – Measurements

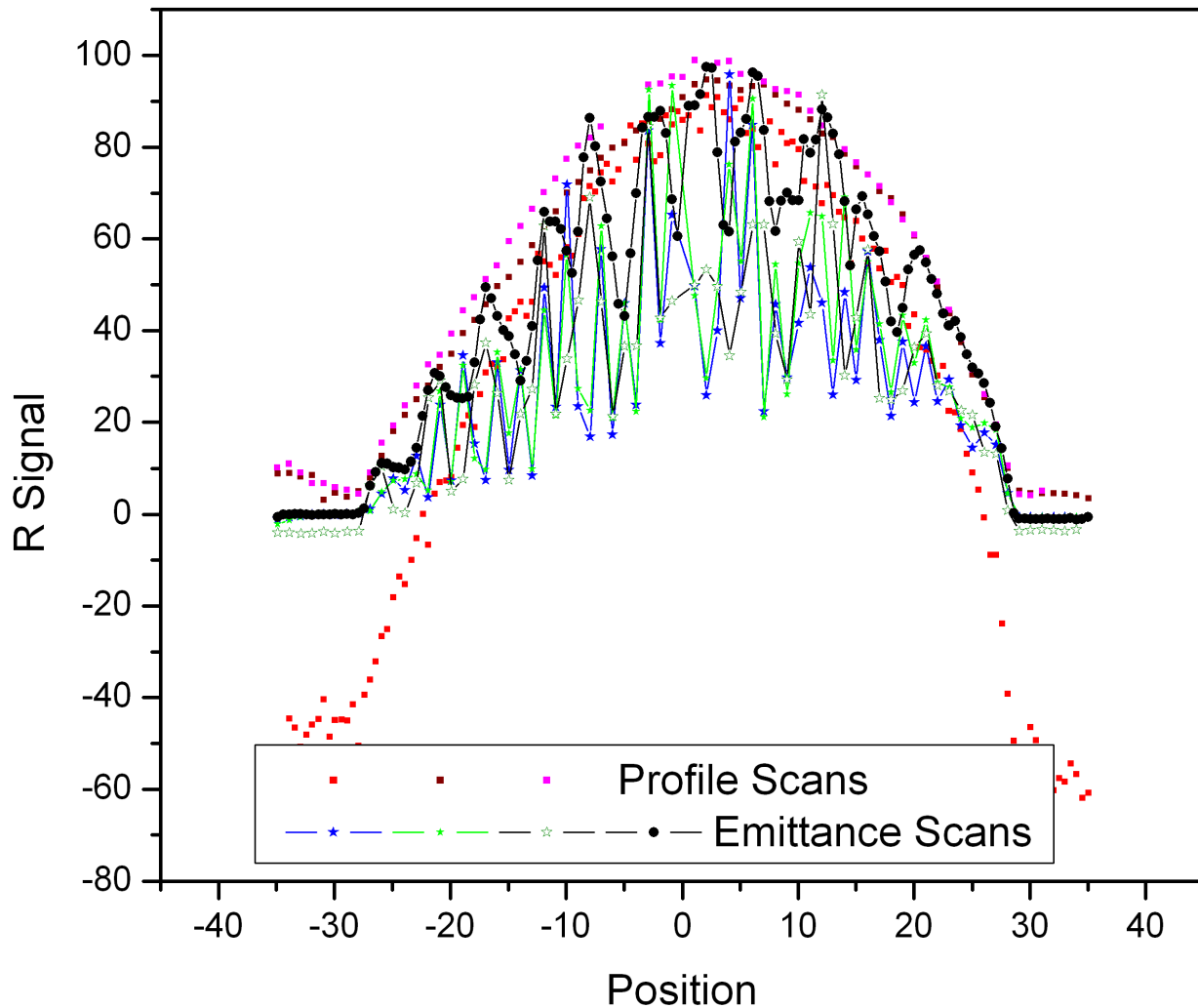
Topics

- Diagnostics Updates
- Emittance Vs. Profile Scans
- Max. Transmission Solenoid Scan
- Max. Transmission Steerer Scan
- In Progress - Solenoid2 scan

Diagnostics Updates

- Middle SEM not working, as the gain is too high. Uli looks for HardWare-solution
- Status of Uli's application is unknowns, summer-student arrived
- BCT is working – reading on oscilloscope
- LEM – application is not capable to move just one of the elements (slit or grid), as the FESA-interface seems to block it

Emittance Scan Vs. Profile Scan

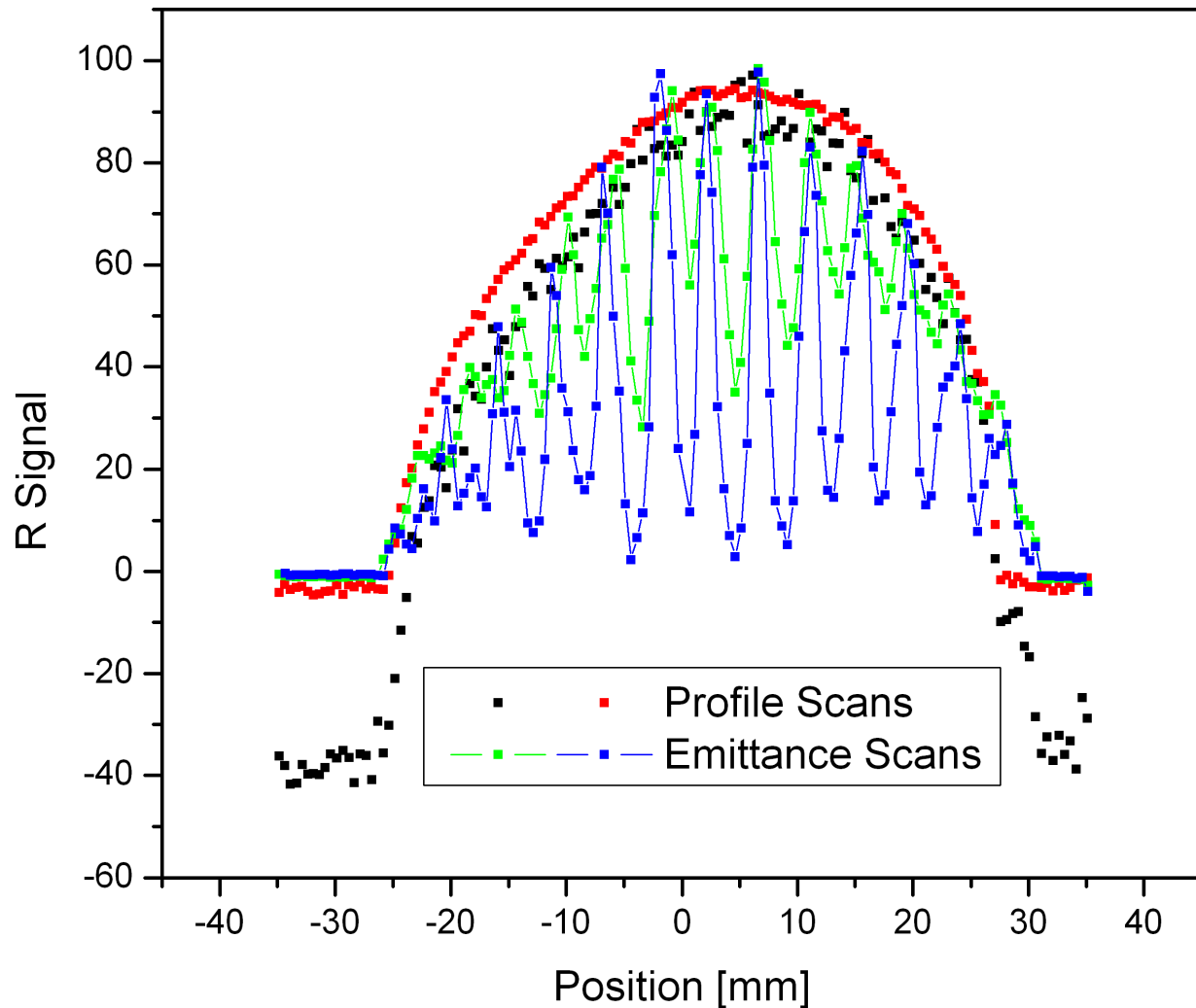


Horizontal Scan
685A-0A-0000

Profile – Beam Centre
1.6mm
2.7mm
1.98mm

Emittance – Beam Centre
2.76mm
3.65mm
2.39mm
2.41mm

Emittance Scan Vs. Profile Scan

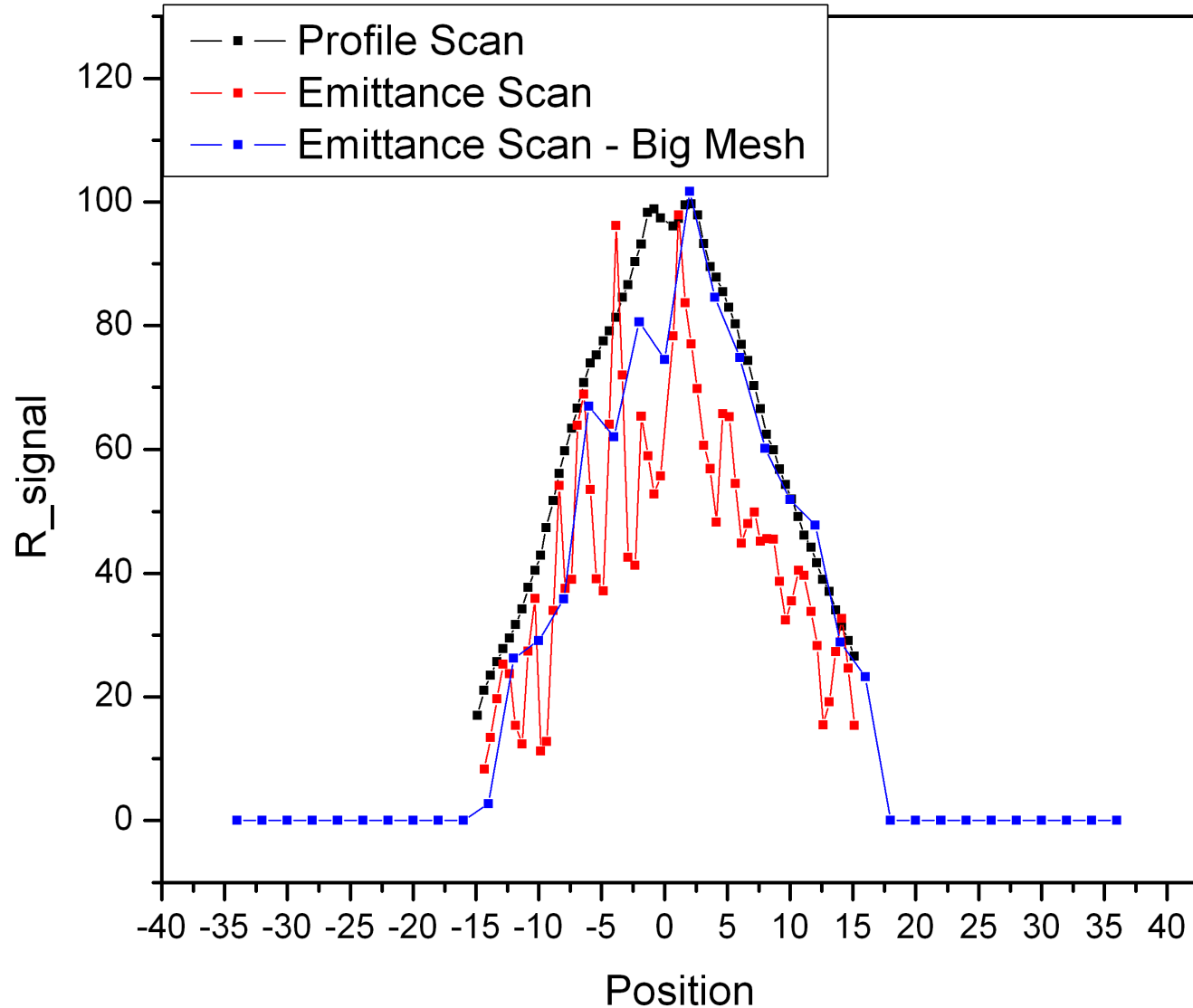


Vertical Scan
685A-0A-0000

Profile – Beam Centre
3.3mm
2.8mm

Emittance – Beam Centre
3.2mm
6.6mm ???

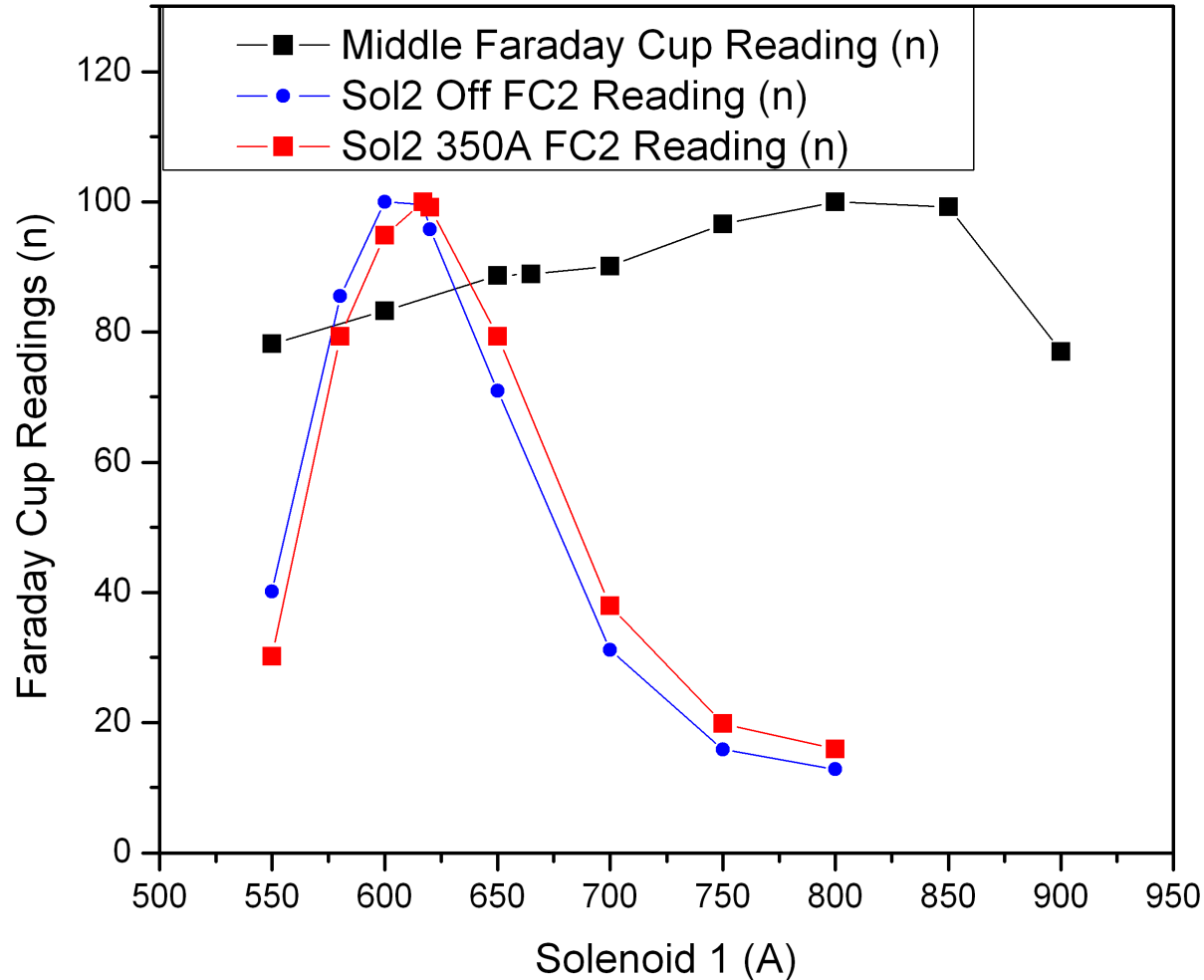
Emittance Scan Vs. Profile Scan



Vertical Scan
600A-0A-0000

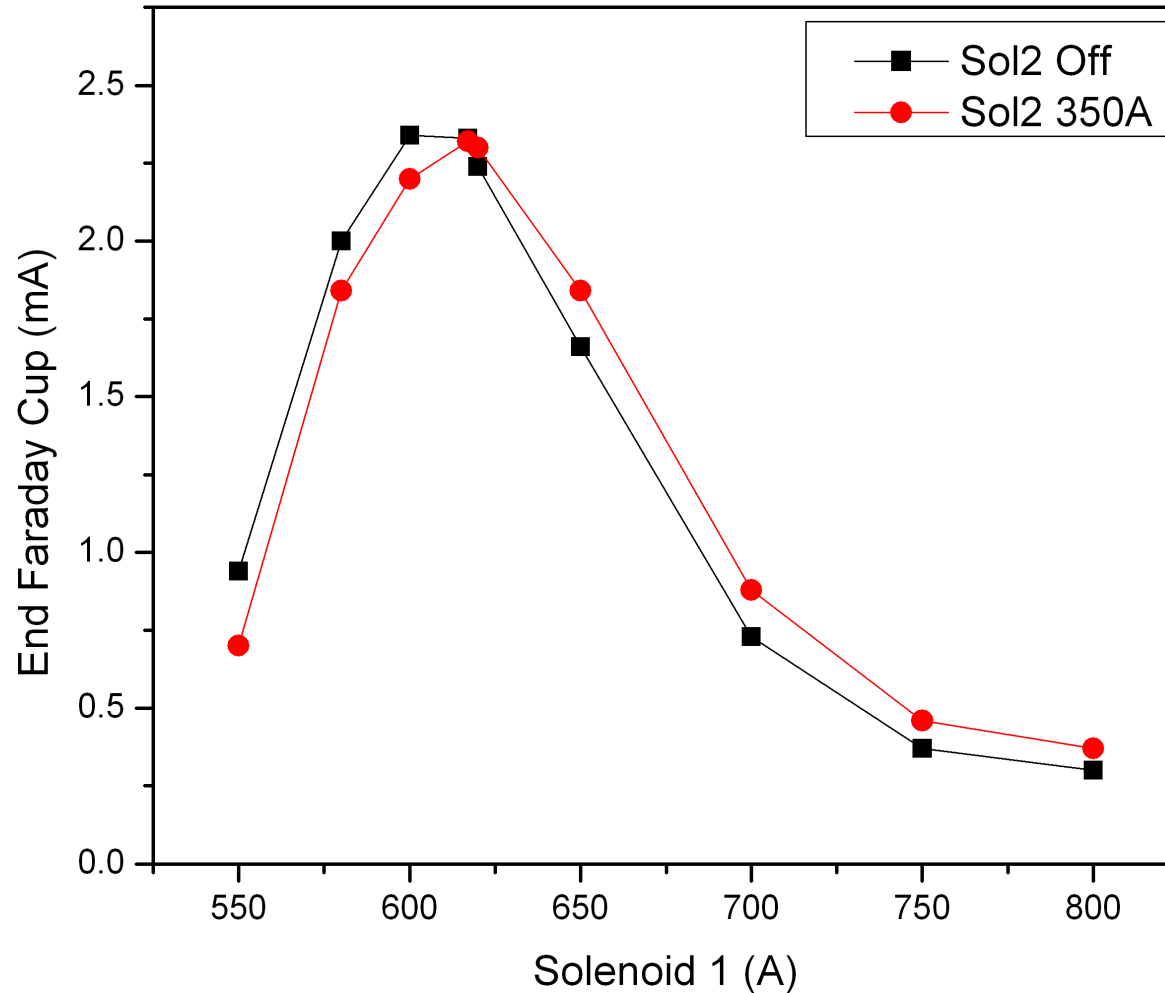
Maximum Transmission

Solenoid1 – Middle Faraday-Cup

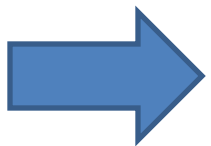
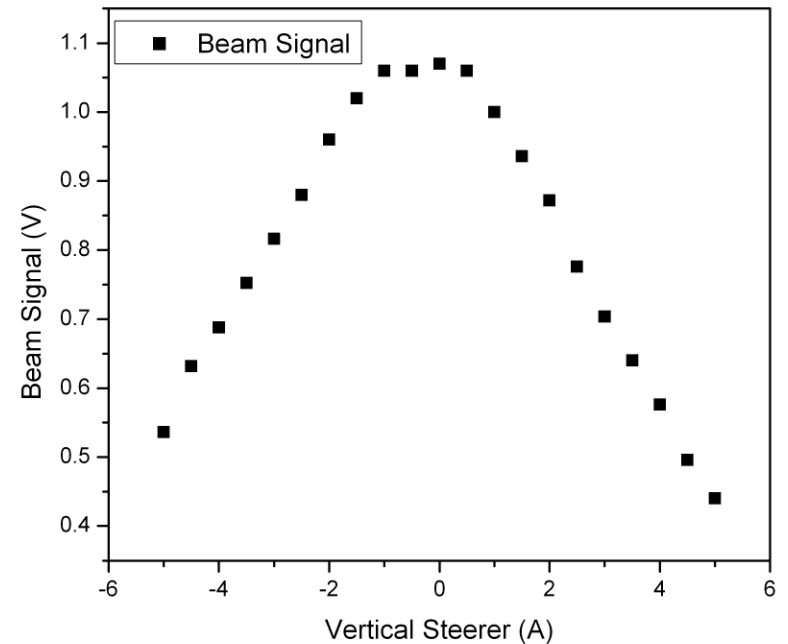
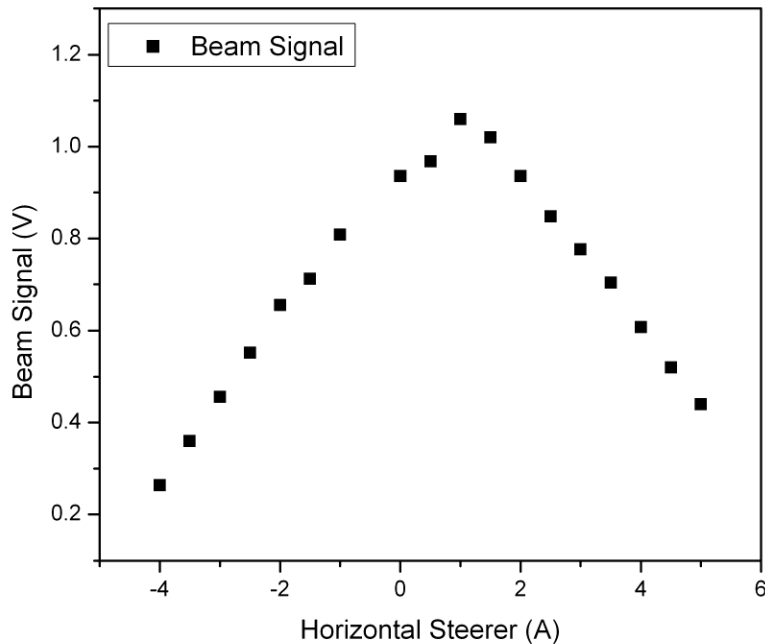


Maximum Transmission

Solenoid1 – End Faraday-Cup



Max. Transmission - Steerer Scan



Solenoid2 Scan of **685A-??A-1A--0.25A-0-0**

Same SteererScan performed for 700A, 660A, 640A, 620A, 600A

In Progress

In Configuration

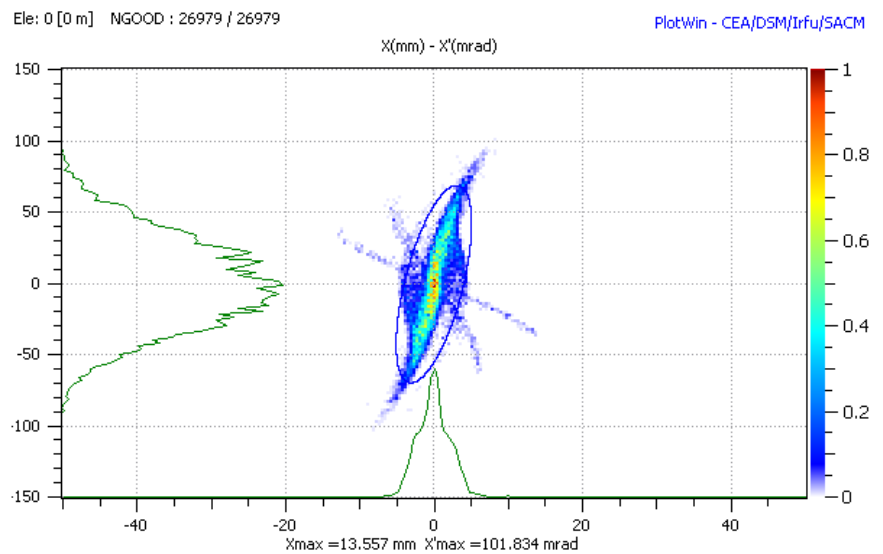
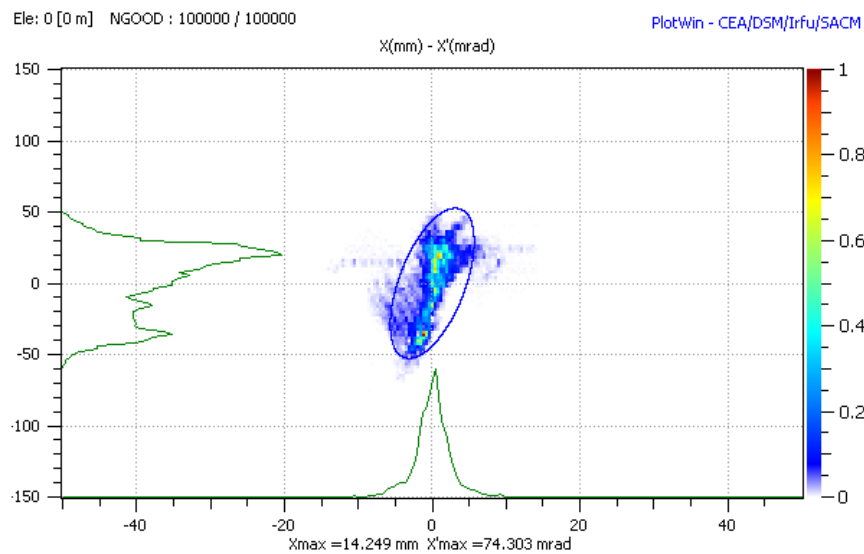
- Solenoid1 685A
- Steerer1 1A(H) -0.25A(V)
- Steerer2 0A(H) 0A(V)

we are performing Solenoid-Scan (Emittance)

-> Comparision of beam rotation with simulation

Measurement Vs. Simulation

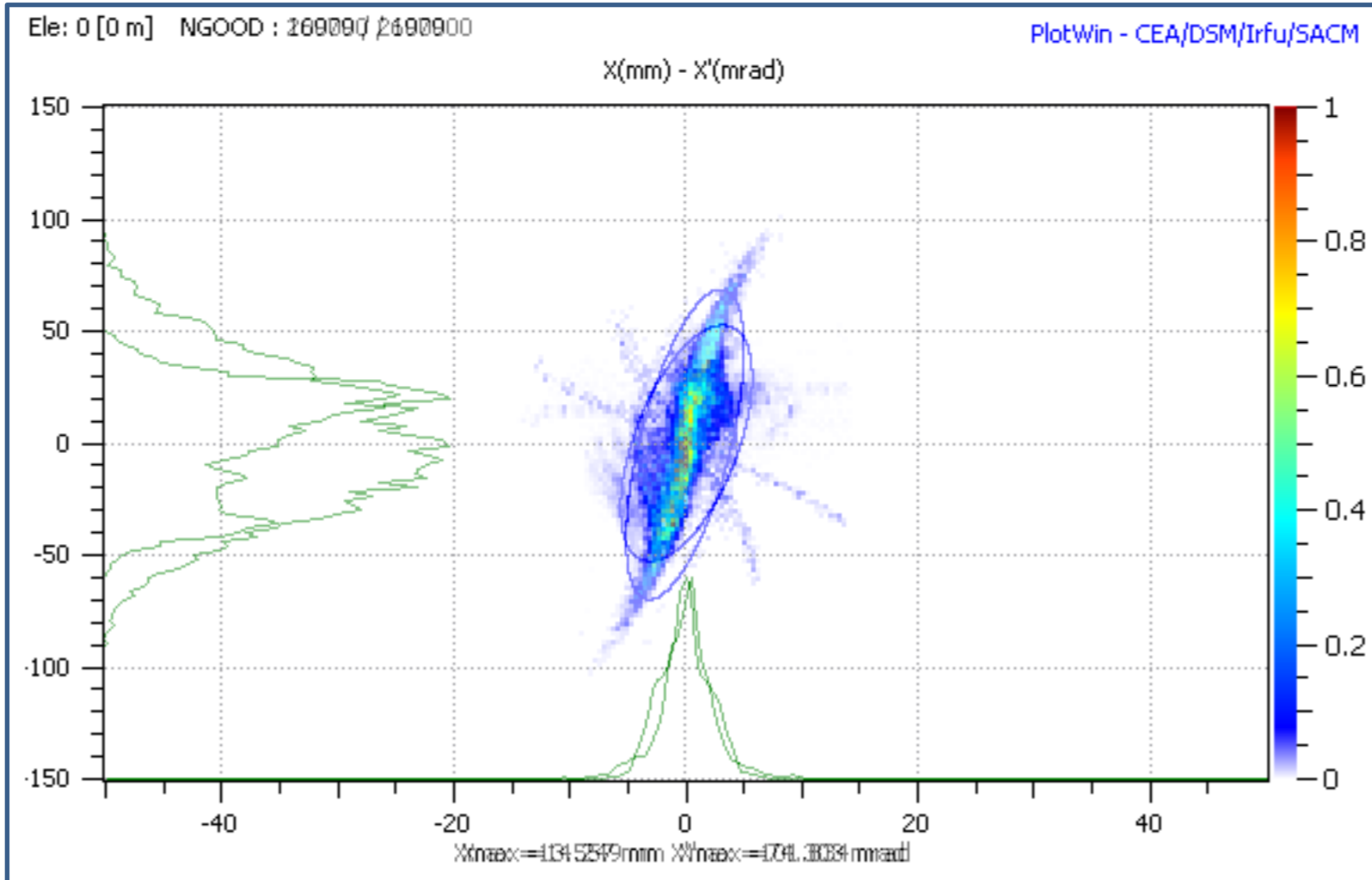
Measurement after optical realignment



ES_2011_3_31_18_1_32_H_600_360.png

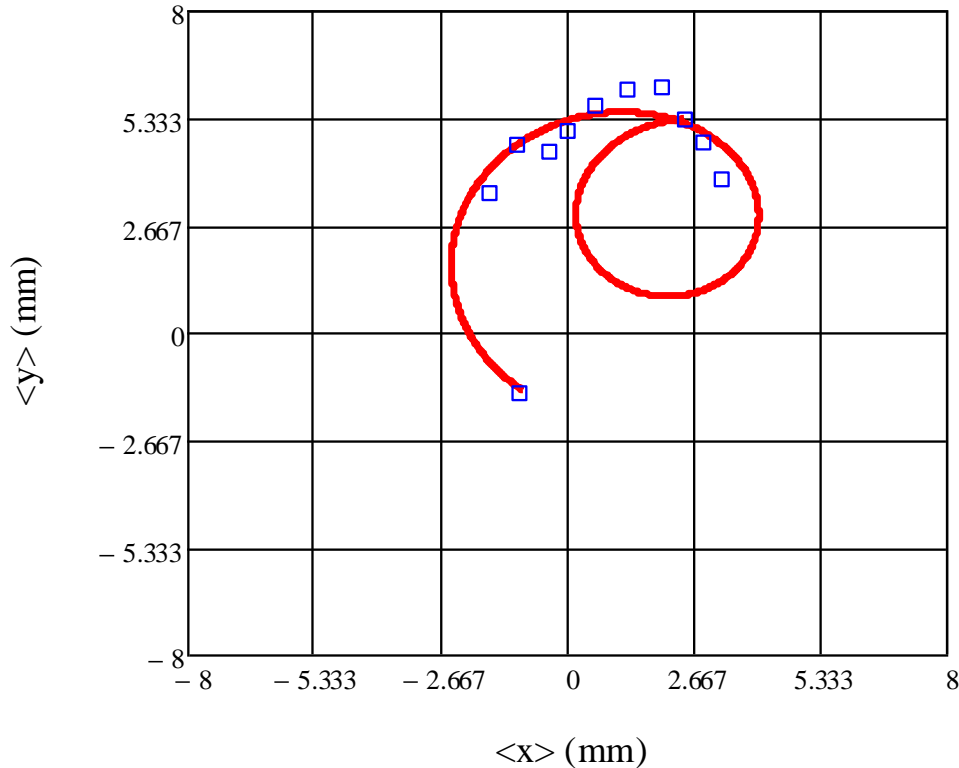
ES_2011_3_31_18_1_32_H_600_300.png

Measurement Vs. Simulation

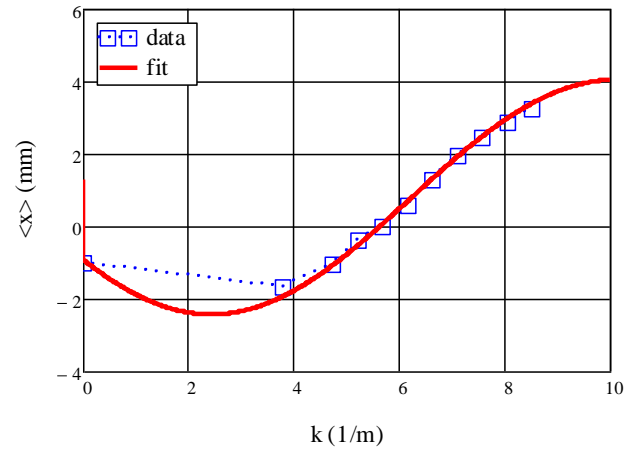


Pieros Program

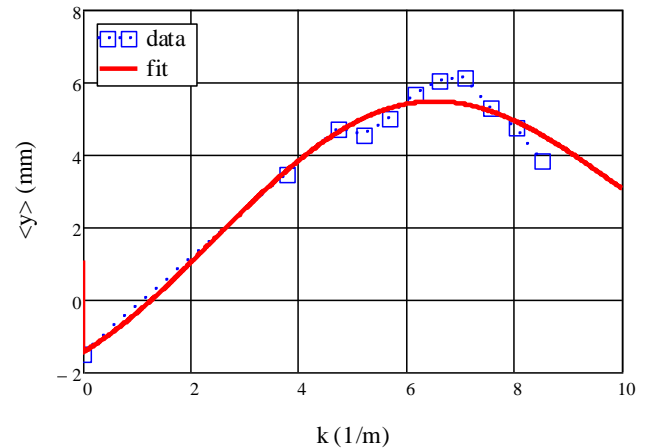
X-Y centroid displacement as function of k



X centroid displacement as function of k



Y centroid displacement as function of k

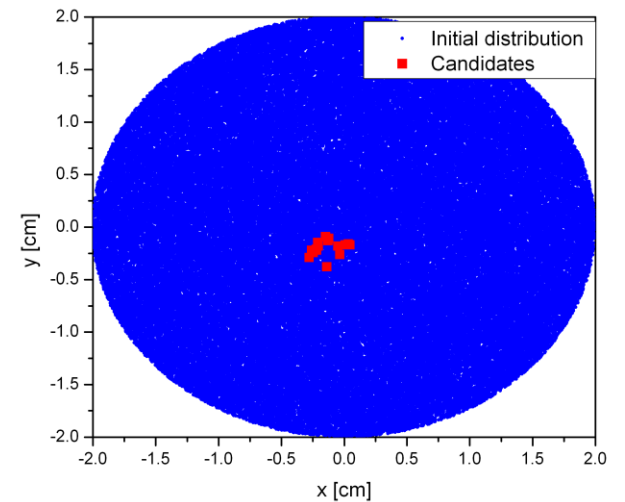
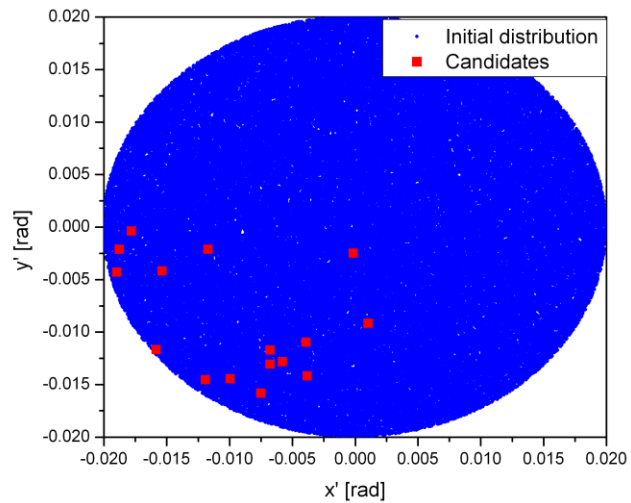
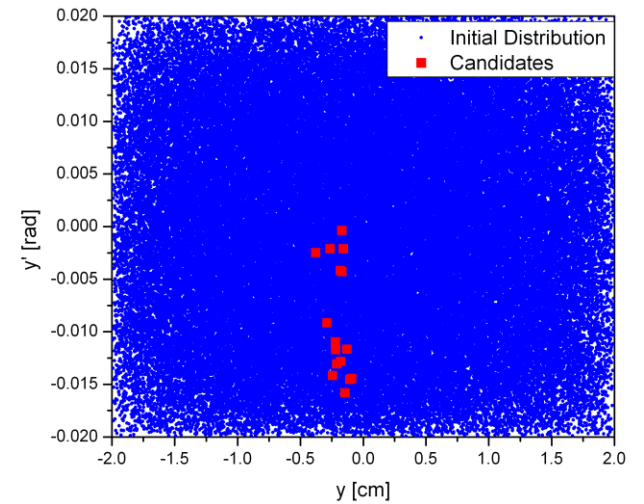
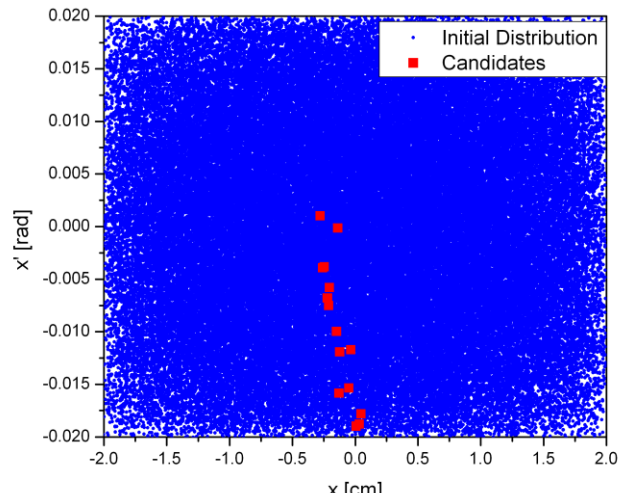


$$\text{mis}_{\text{in}} = \begin{pmatrix} 0.17 \\ -10.048 \\ -0.321 \\ -11.578 \end{pmatrix}$$

$$\text{mis}_{\text{out}} = \begin{pmatrix} 3.008 \\ 0.6 \\ 3.587 \\ 0.716 \end{pmatrix}$$

$$\begin{pmatrix} \text{mm} \\ \text{mrad} \\ \text{mm} \\ \text{mrad} \end{pmatrix}$$

Offset Simulations



Offset Simulations

