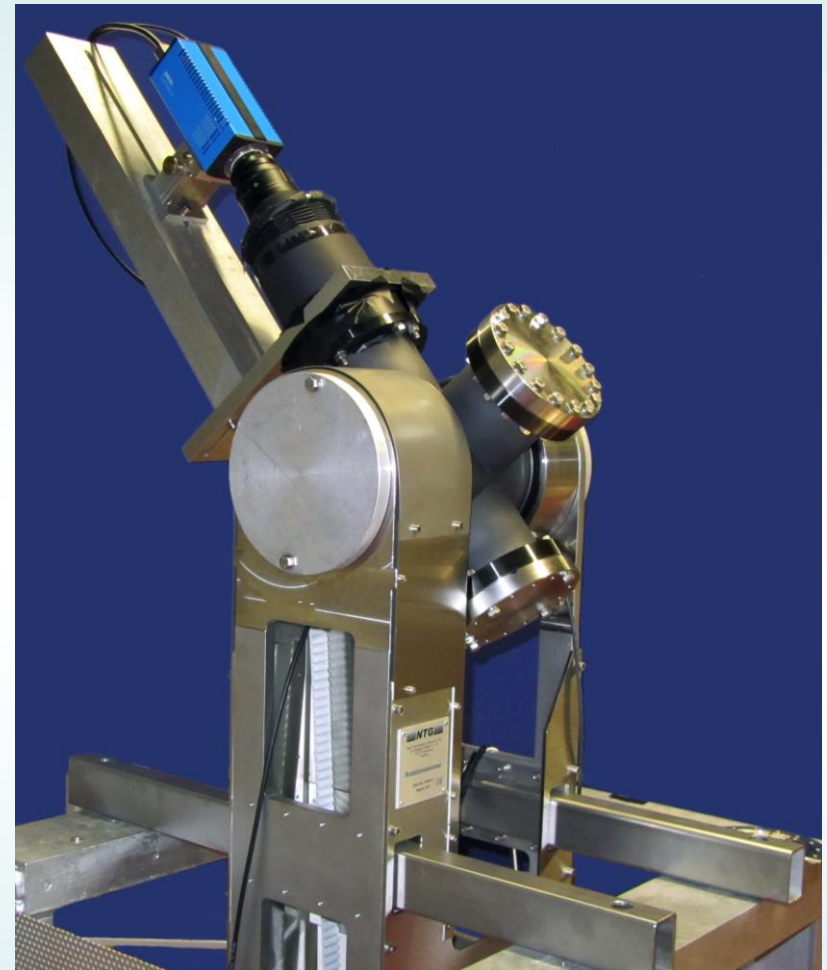
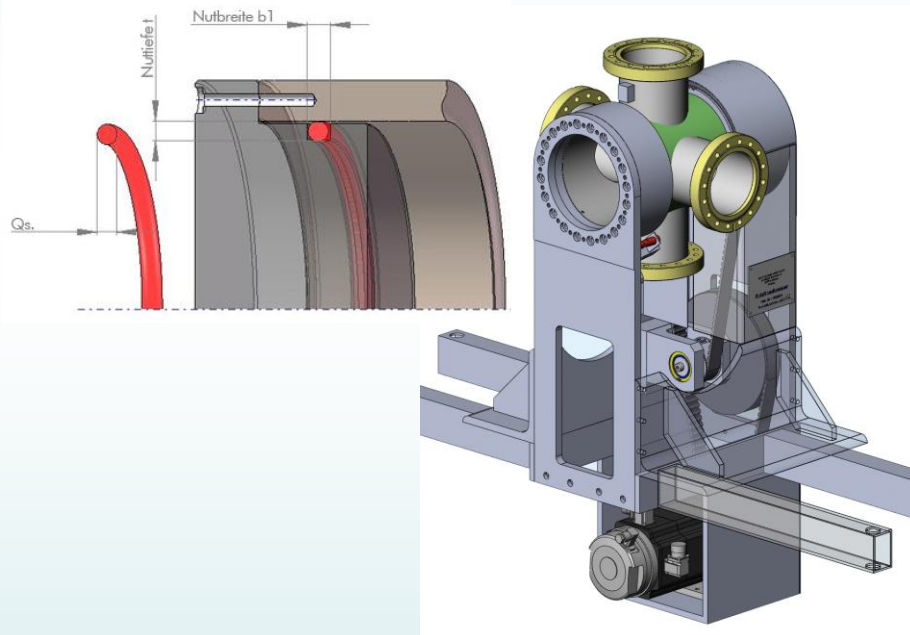


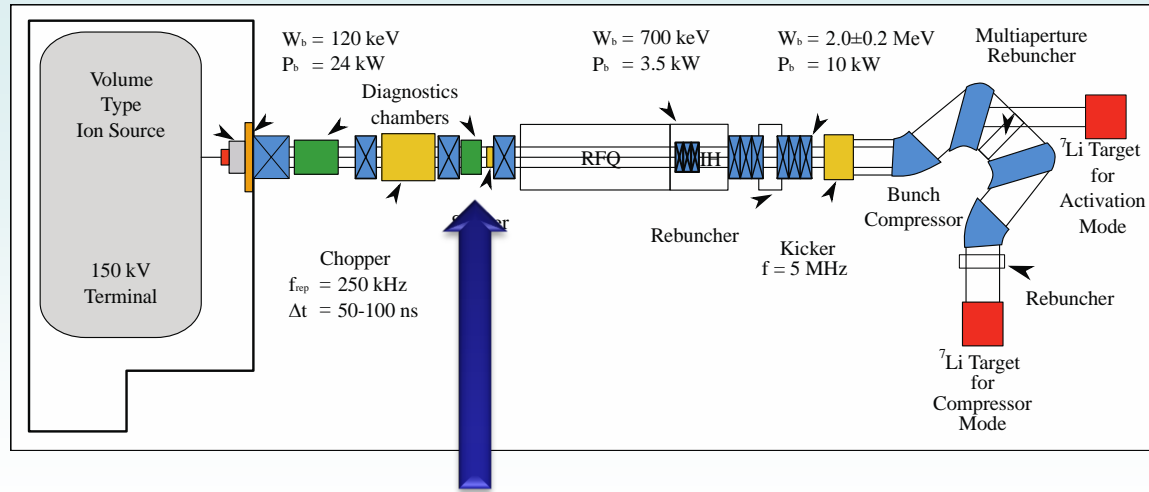
# First Measurements With a Rotatable Vacuum Chamber

# Rotatable Vacuum Chamber

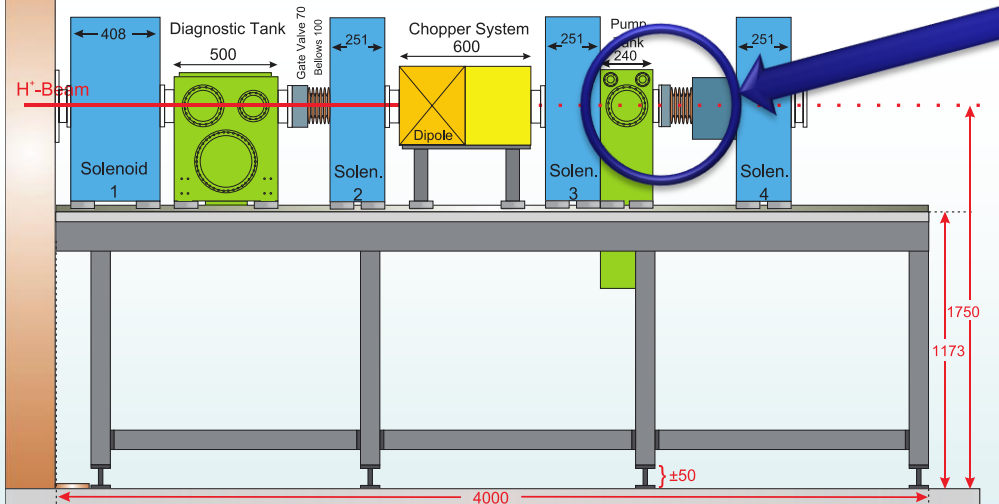
- Rotation angle of  $270^\circ$
- 4 CF100 ports
- Camera with  $1600 \times 1200$  @ 14 bit
- Anti-Reflexion coating
- Pressure down to  $3 \cdot 10^{-8}$  mbar



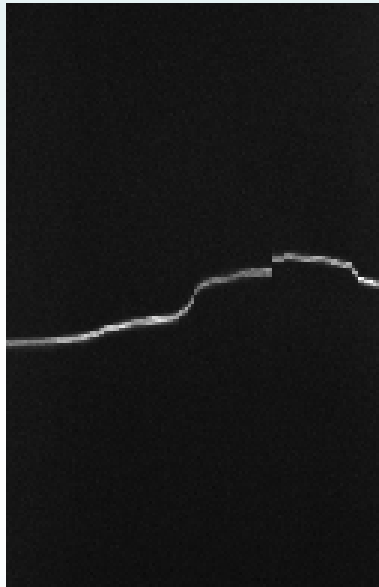
- Non Invasive
- Online diagnosis



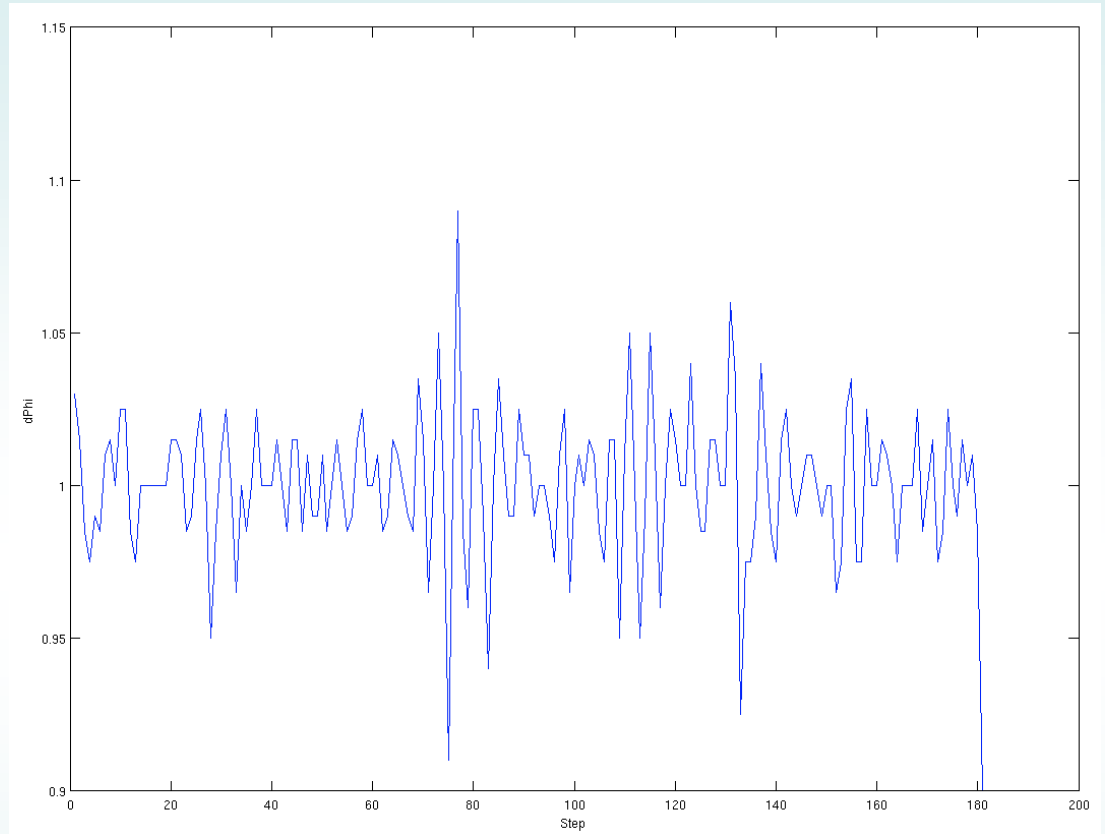
Rotatable chamber



# First Wire Measurements

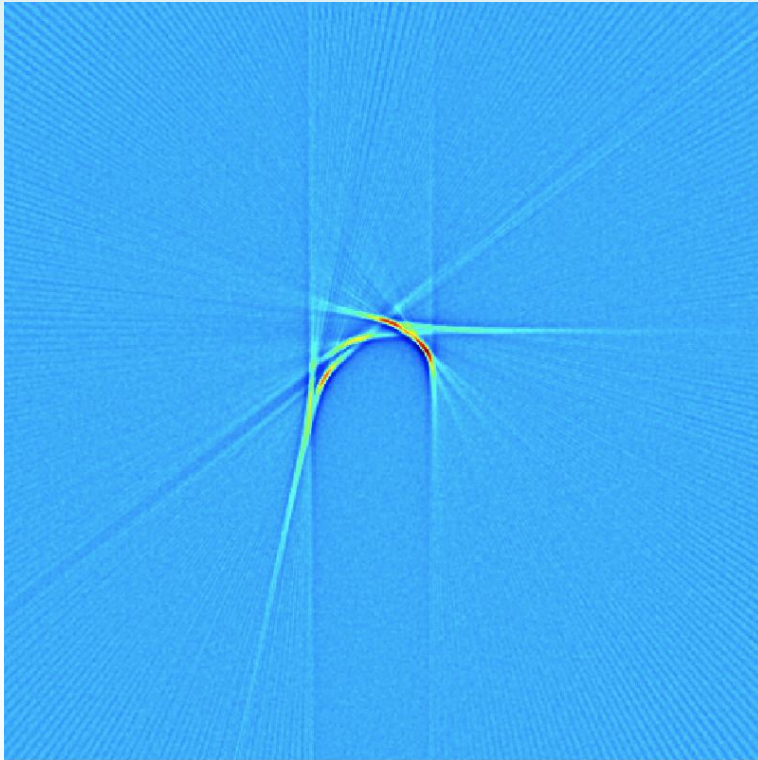


Radon-Plot

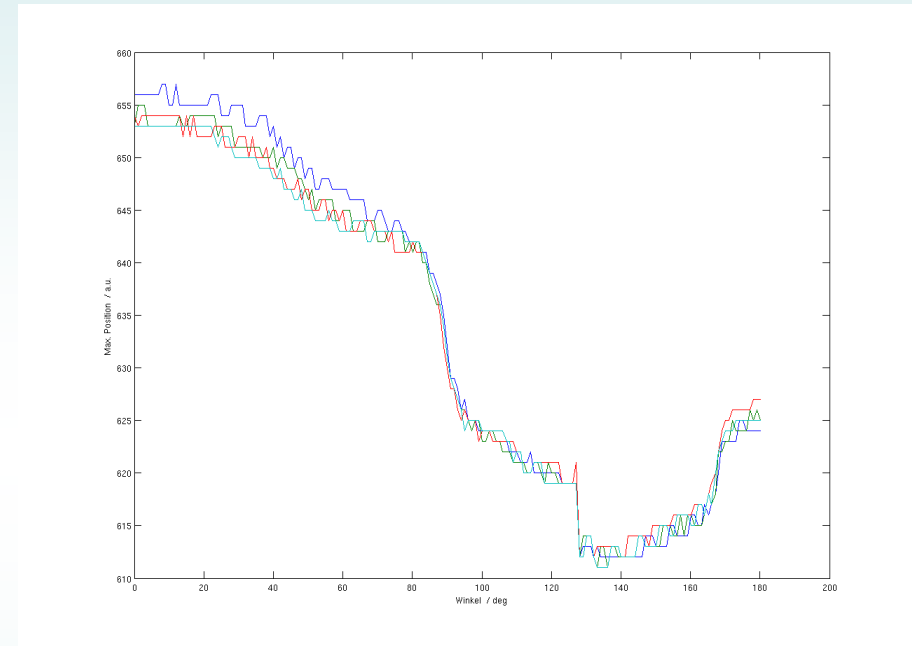


Positioning Accuracy

# Wire Reconstruction

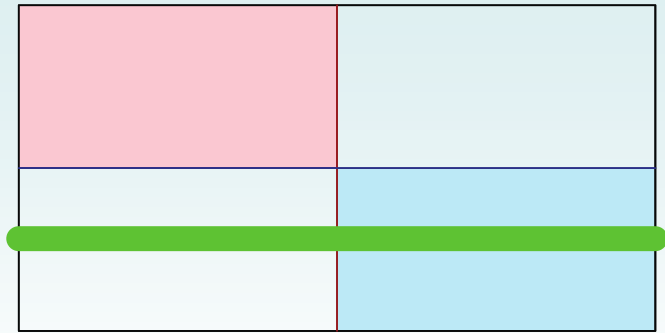


Wire reconstruction



Maxima Position

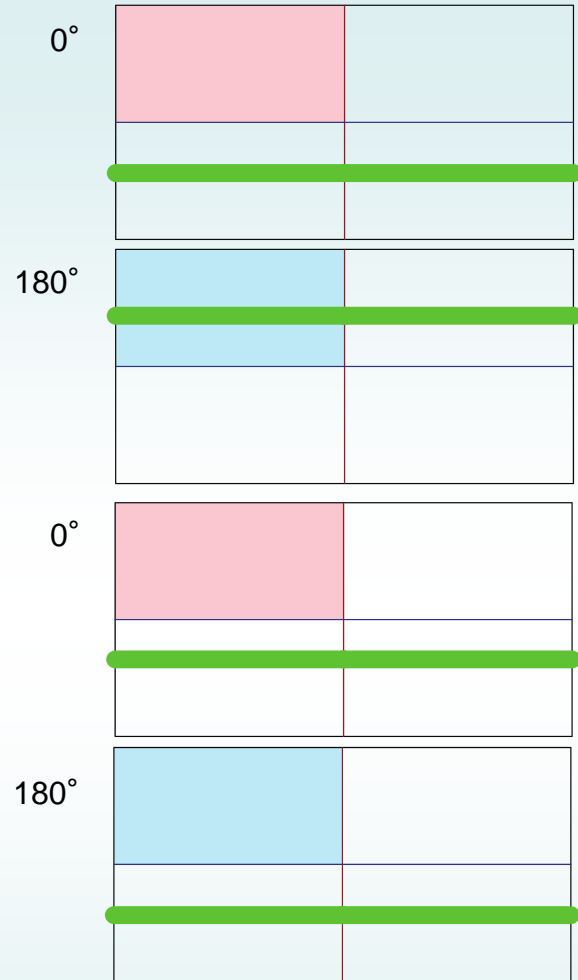
# Camera Offset



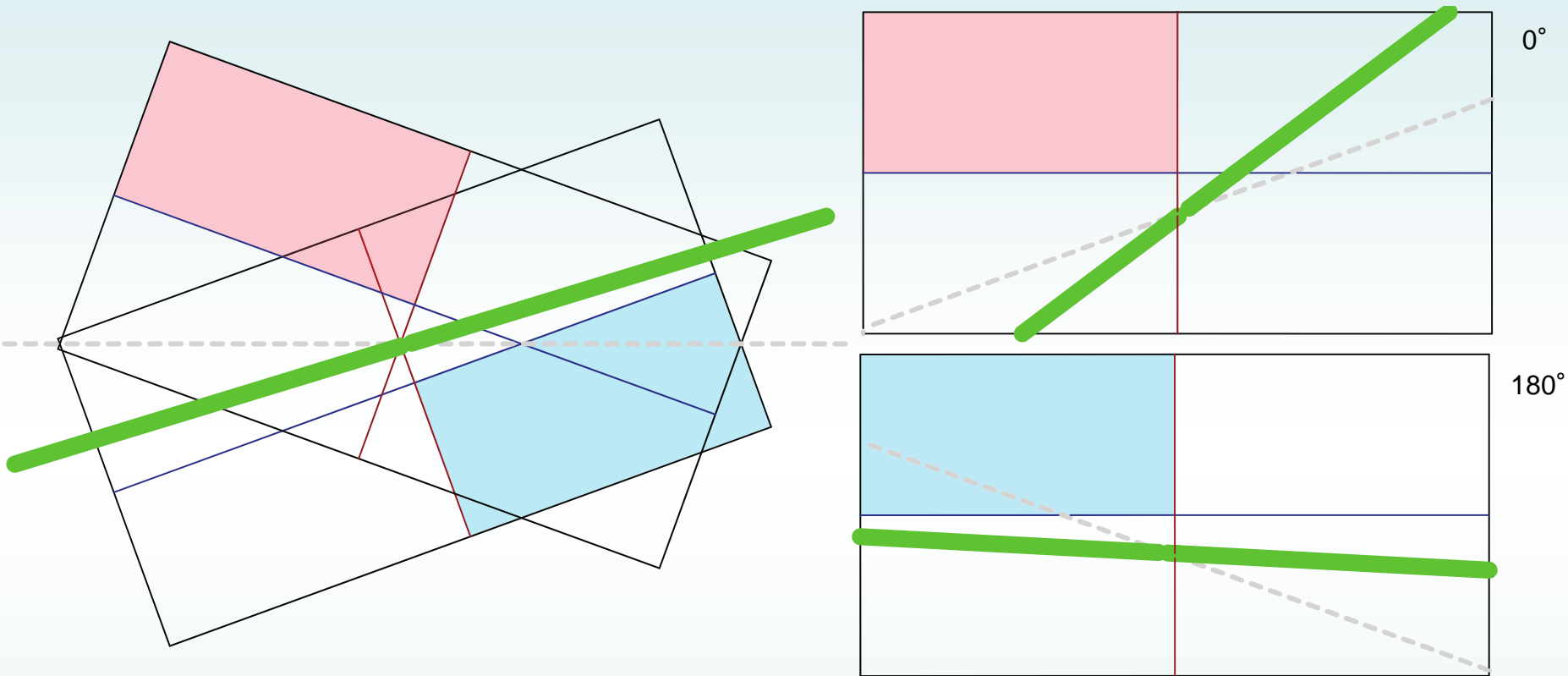
No shift



Shift



# Axis and Angle Deviation



# Correction Methods

## Adjustment errors

- Linear correction of axis offset
- Correction vector through image overlay

## Measurement errors

- Secure optics and camera
- Fixed-point measurement



Centre of gravity correction as first approach

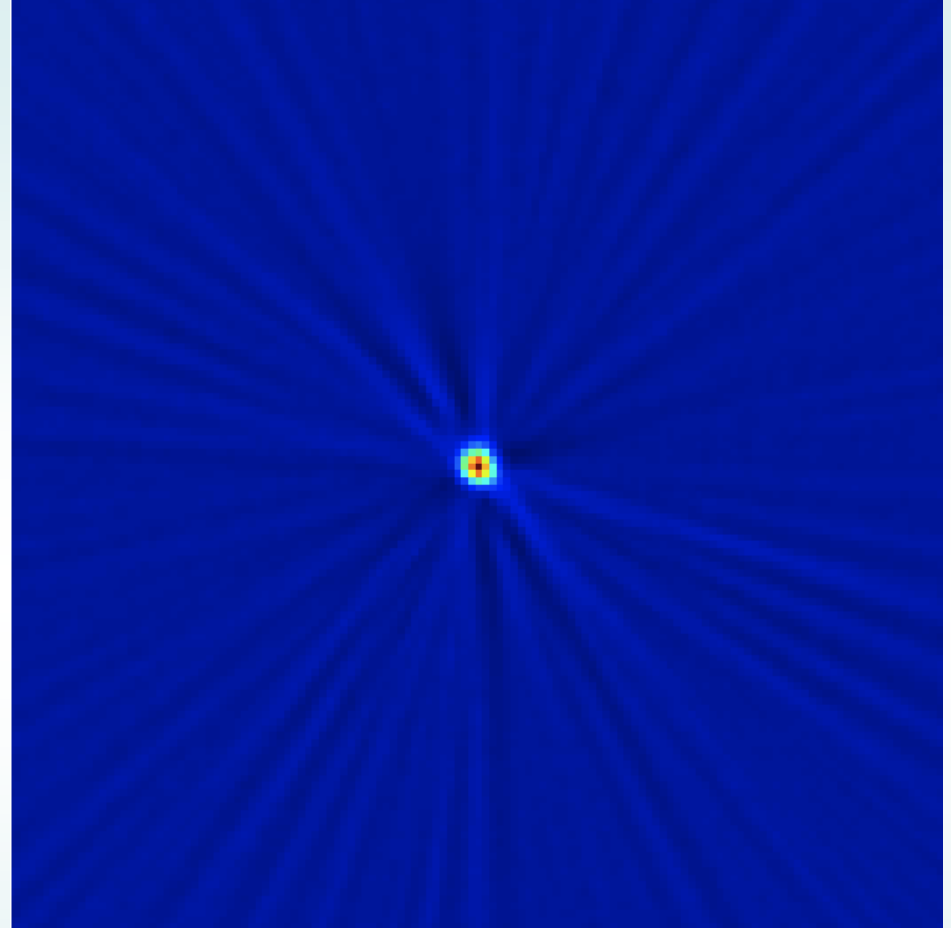


No rotation correction, proximity loss

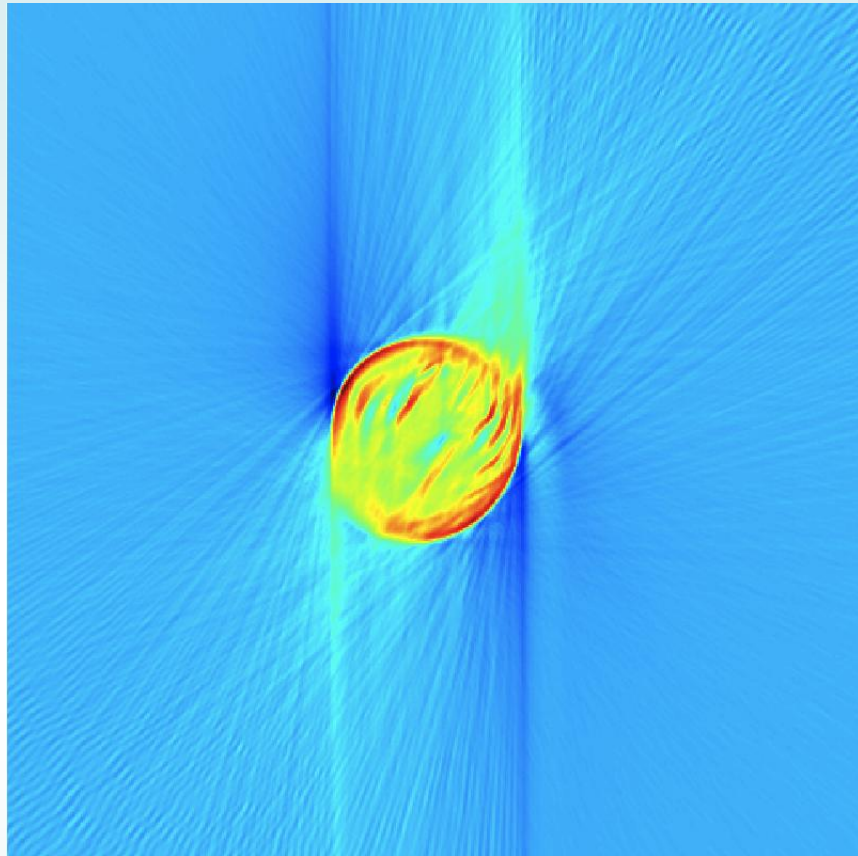


# Corrected Reconstruction

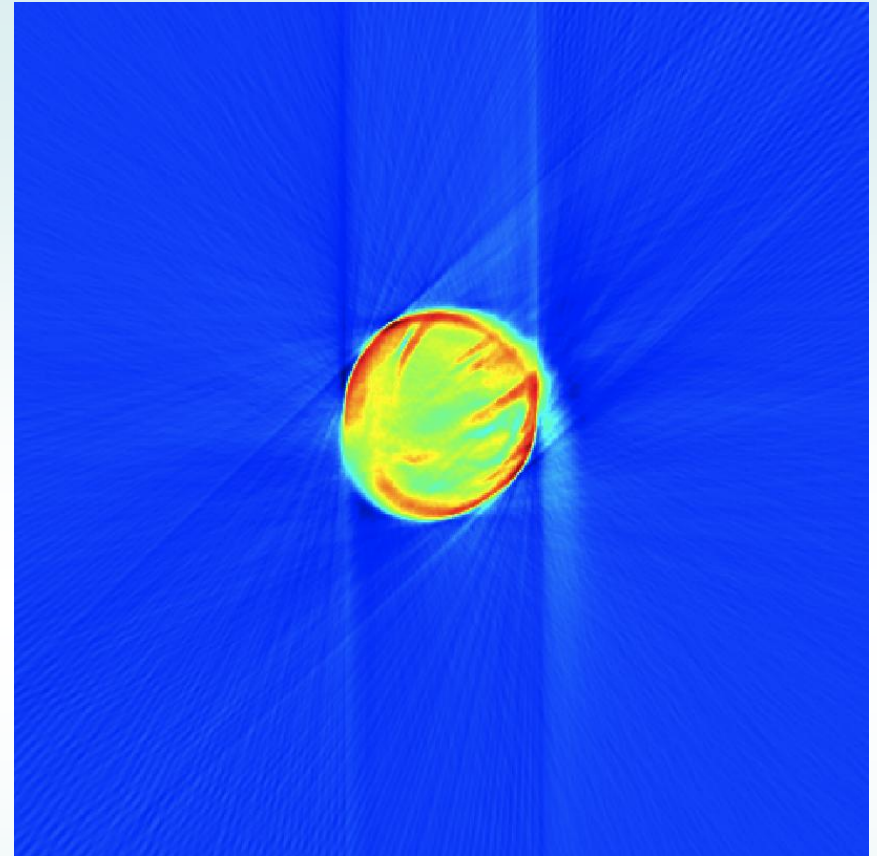
- Original thickness: 0,1 mm
- Measured:  $(0,133 \pm 0,044)$  mm



# Light stick Measurement



Recorded



Normalised

Original: 5,3mm ↔ Reconstructed: 5,11mm

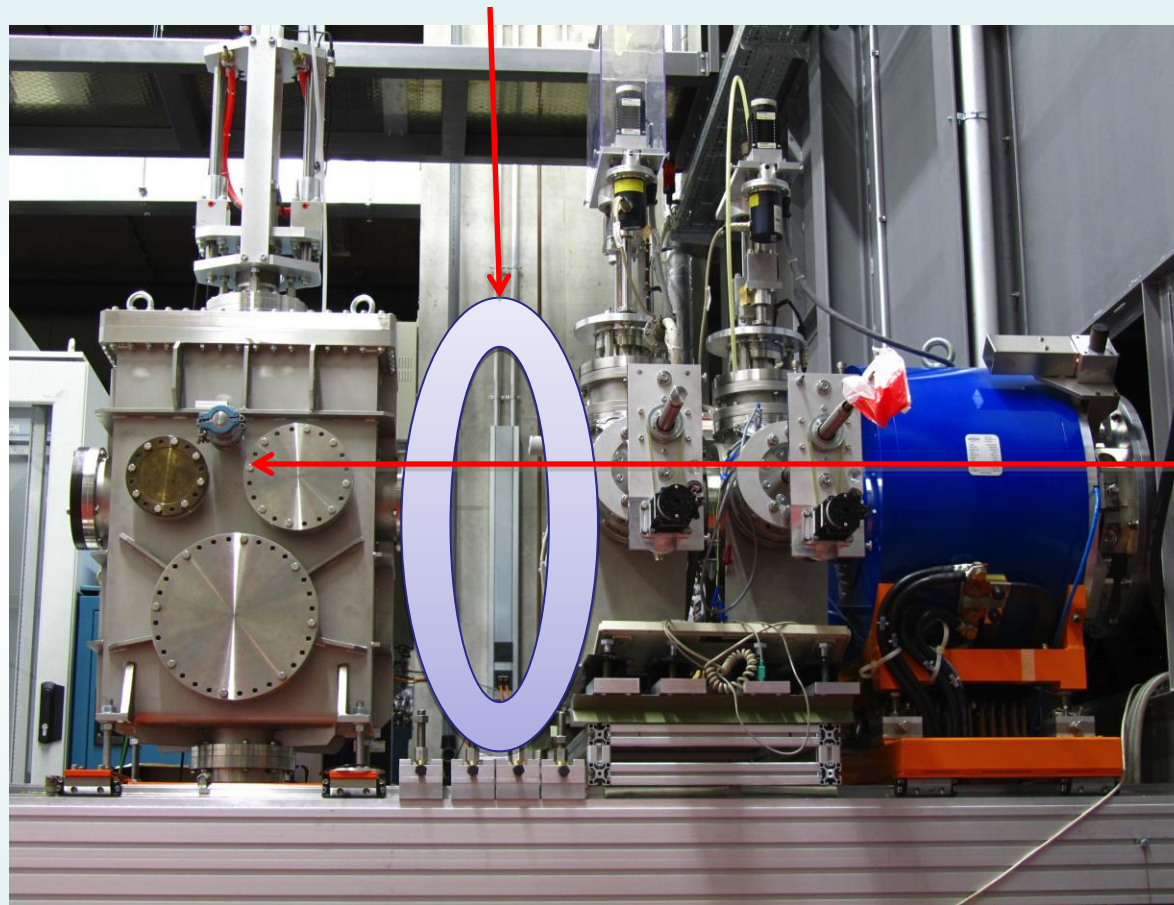
# Next Experiment

Faraday cup

Rotatable chamber

Slit-Grid  
Emi.

Solenoid



Ion source

28.06.2012

# Outlook

- Develop proximity preserving and reliable correction method
- Secure optics and fine tune positioning
- Test chamber with ion beam
- Comparison of tomographic and conventional beam data

Thank You for your Attention

28.06.2012

