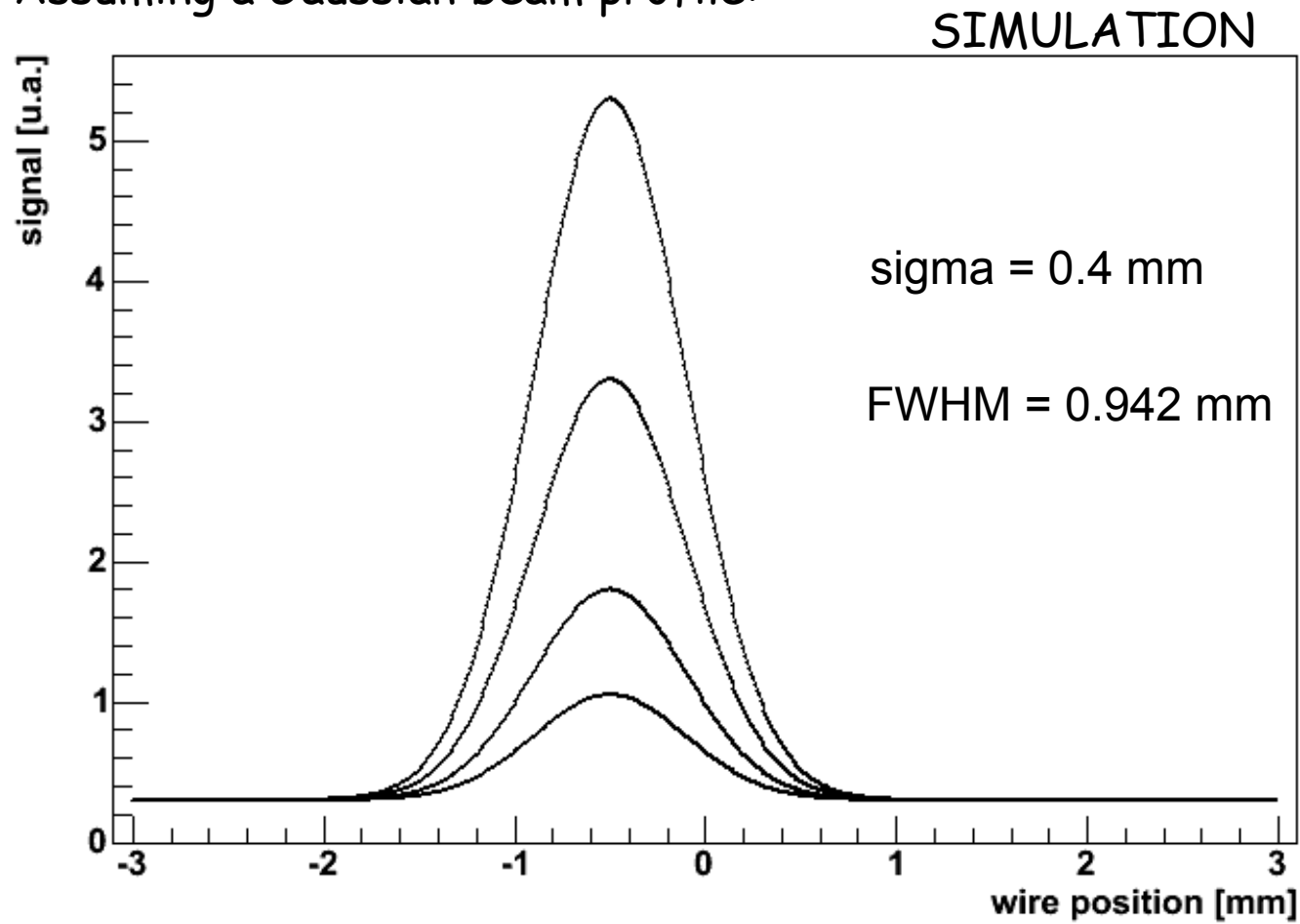


# Comparison of scans using different wires and photomultiplier voltages

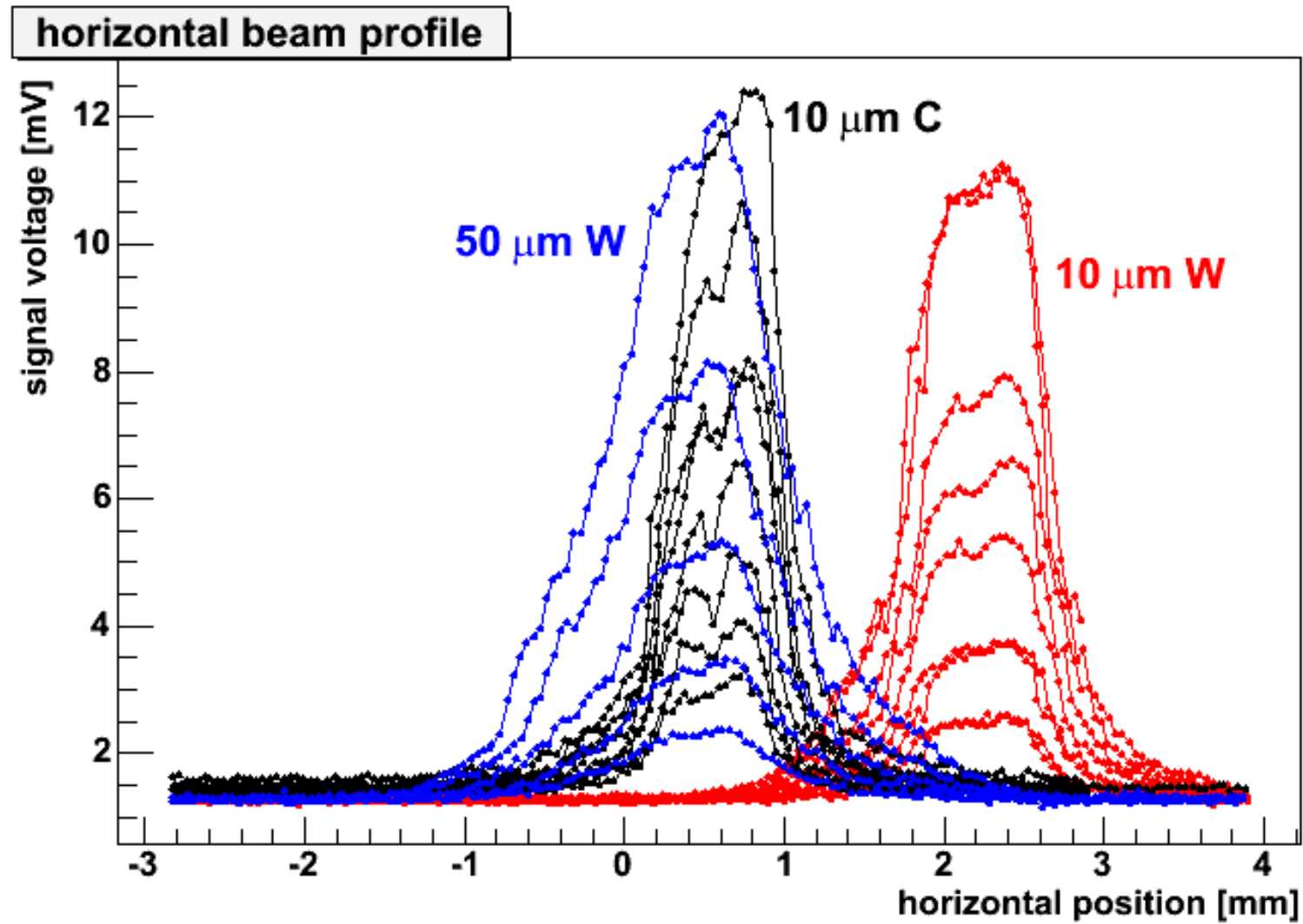
P.Castro

# Expected beam profiles for linear response of wirescanners detectors

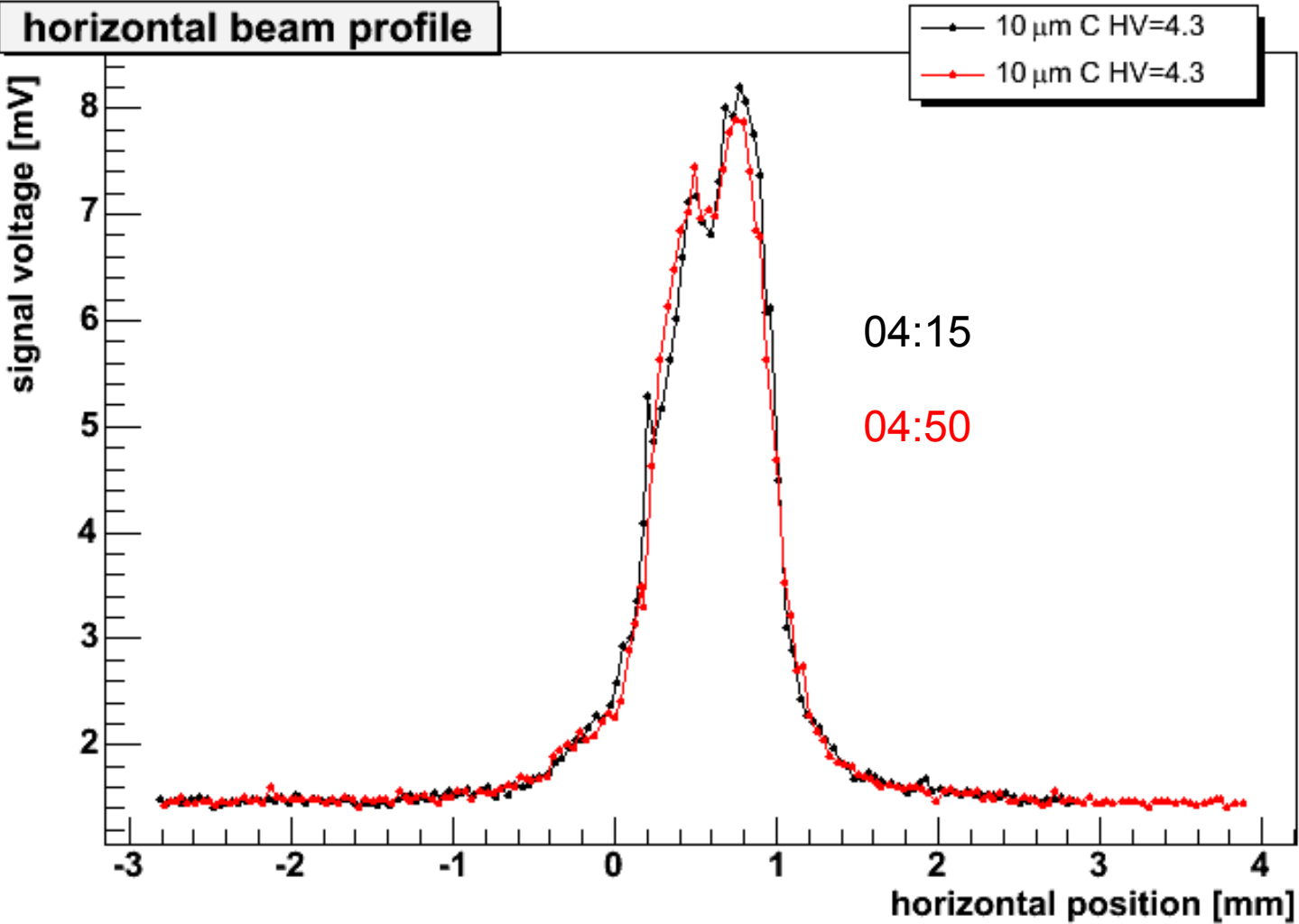
Assuming a Gaussian beam profile:



All scans taken on 25.Jan.2007

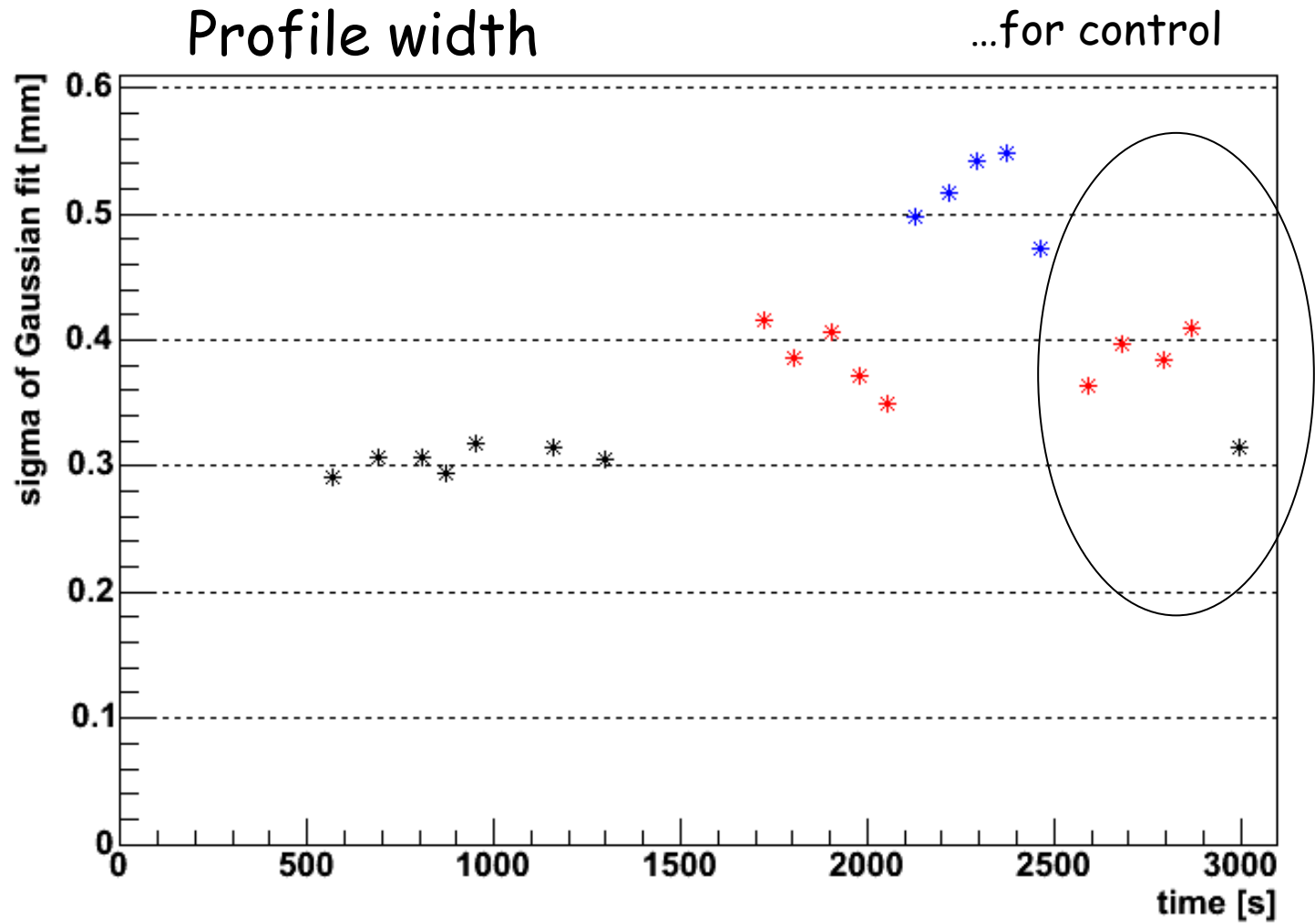


Comparison of two measurements with same wire and same PM voltage



Measurements taken over 40 minutes

with extra measurements...  
...for control

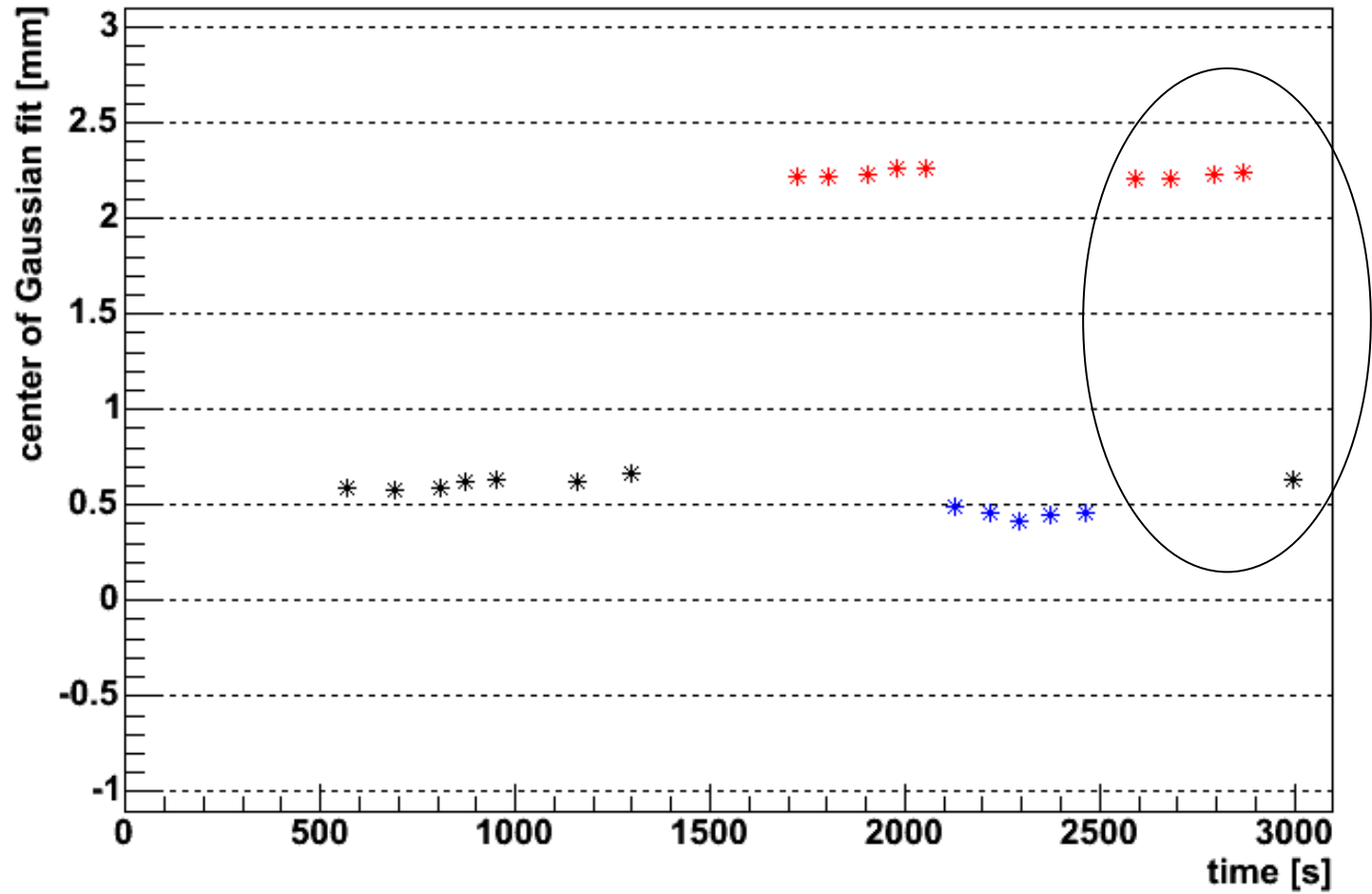


Measurements taken over 40 minutes

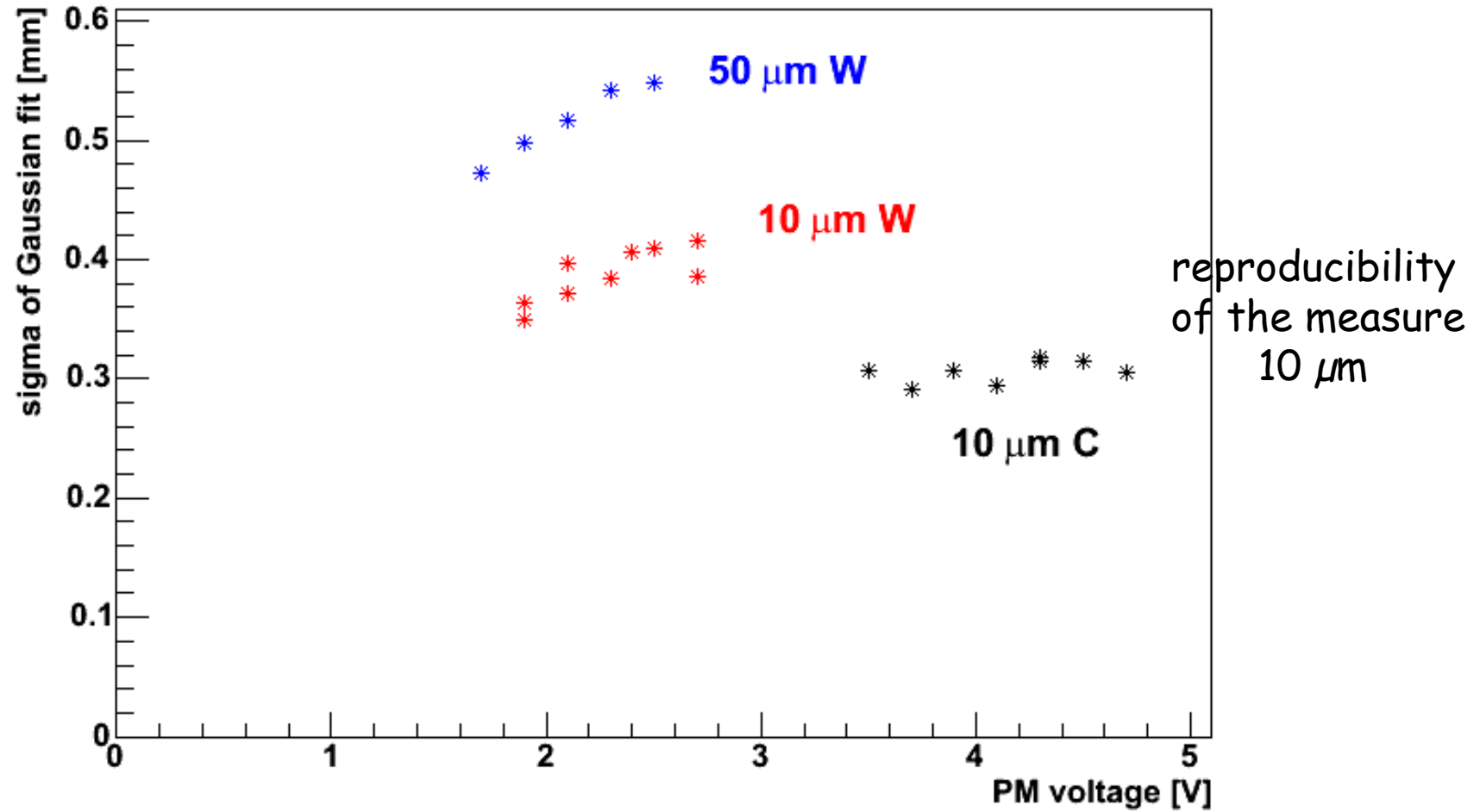
with extra measurements...

...for control

Profile center

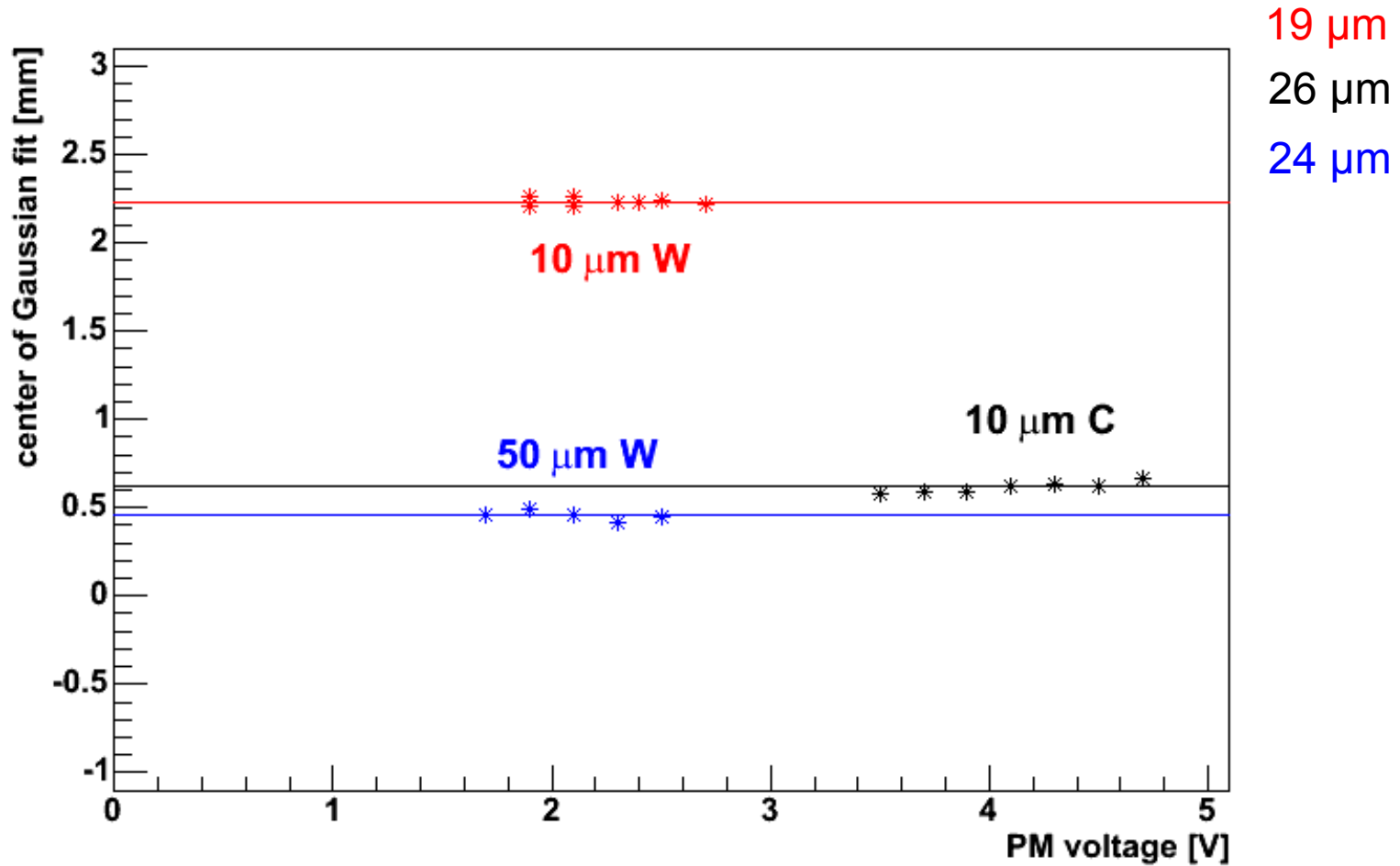


# Profile width versus photomultiplier voltage



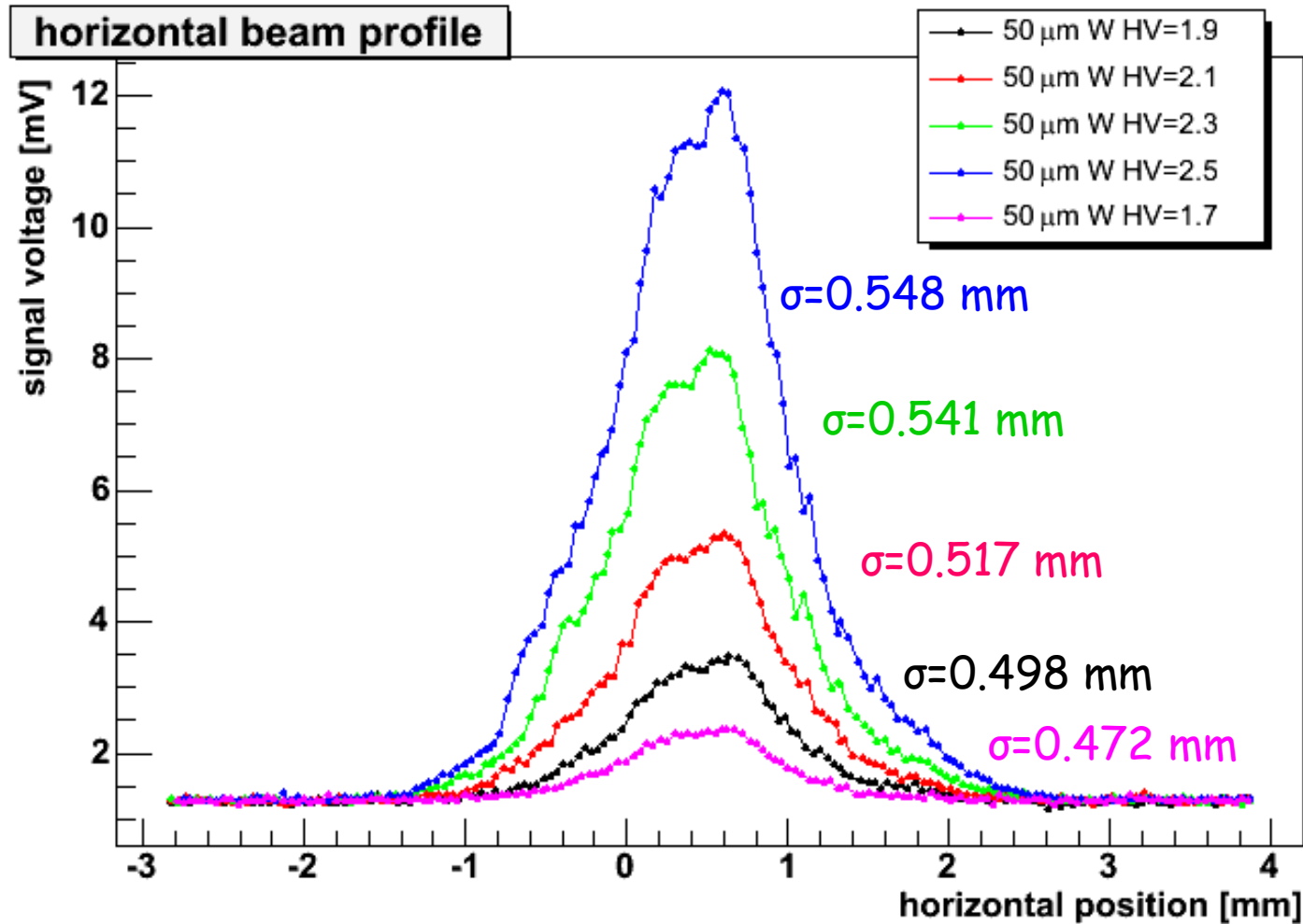
# Profile center versus photomultiplier voltage

reproducibility  
of the  
measurement



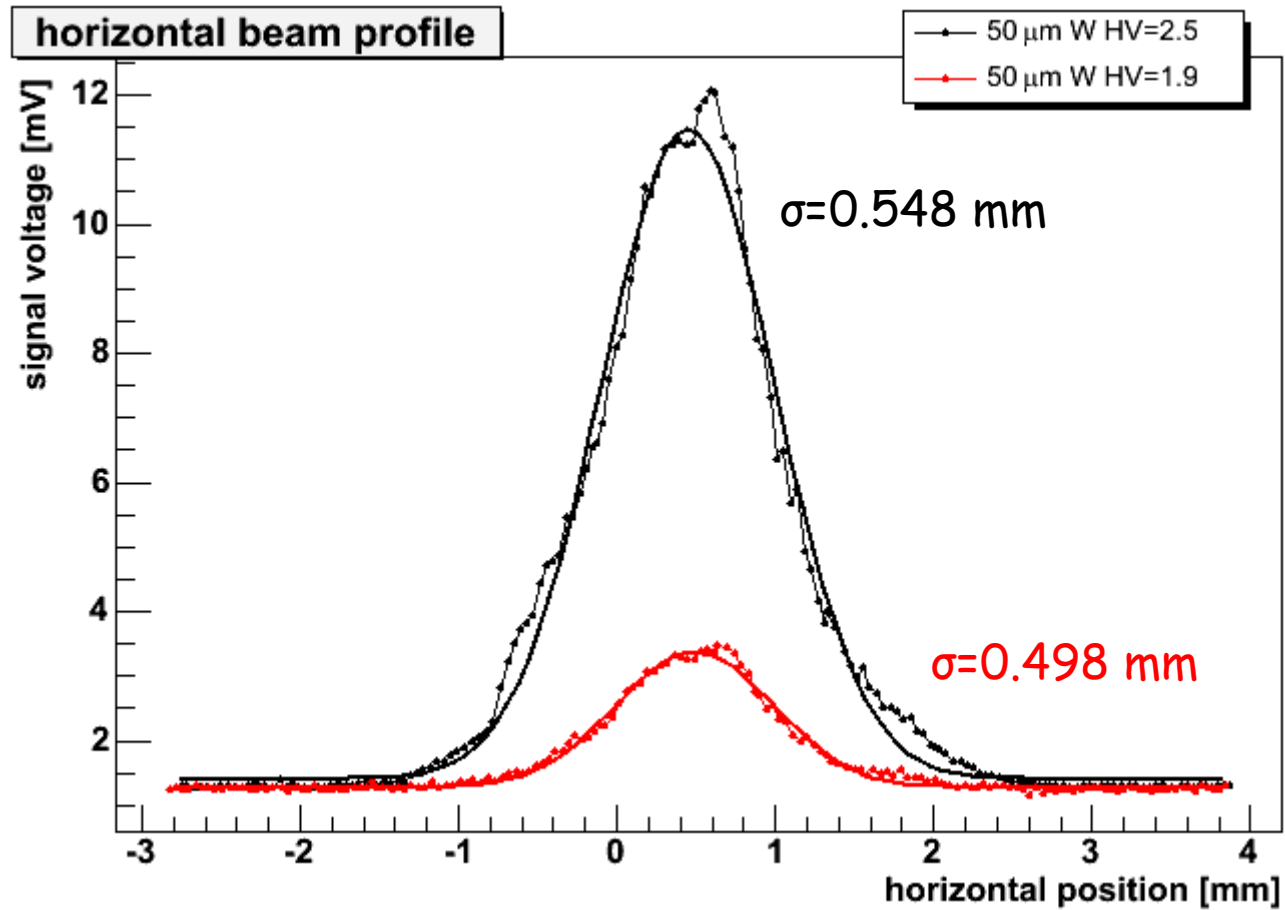


# Scans taken with a 50 $\mu\text{m}$ Tungsten (Wolfram) wire

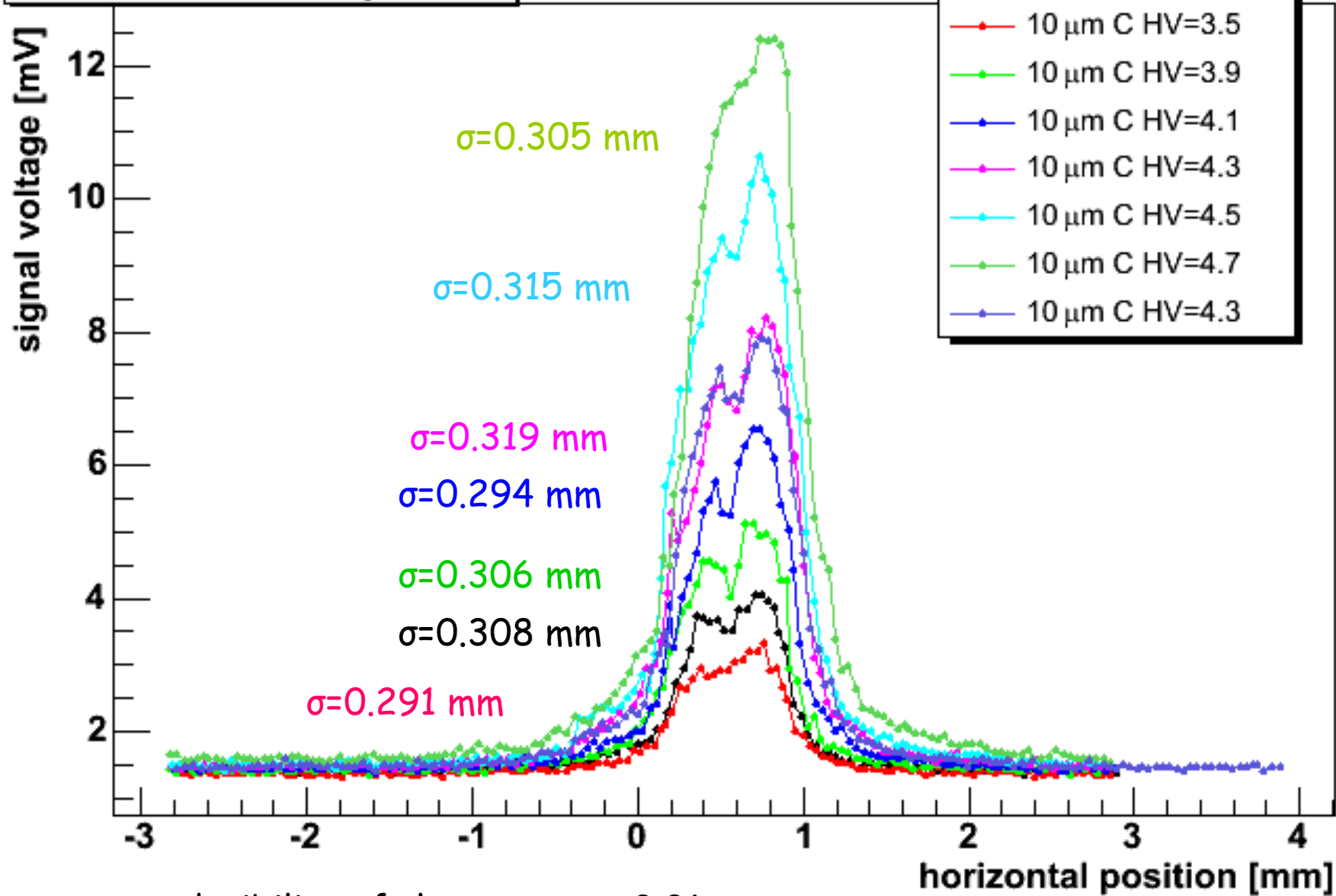


Results from  
Gaussian fits

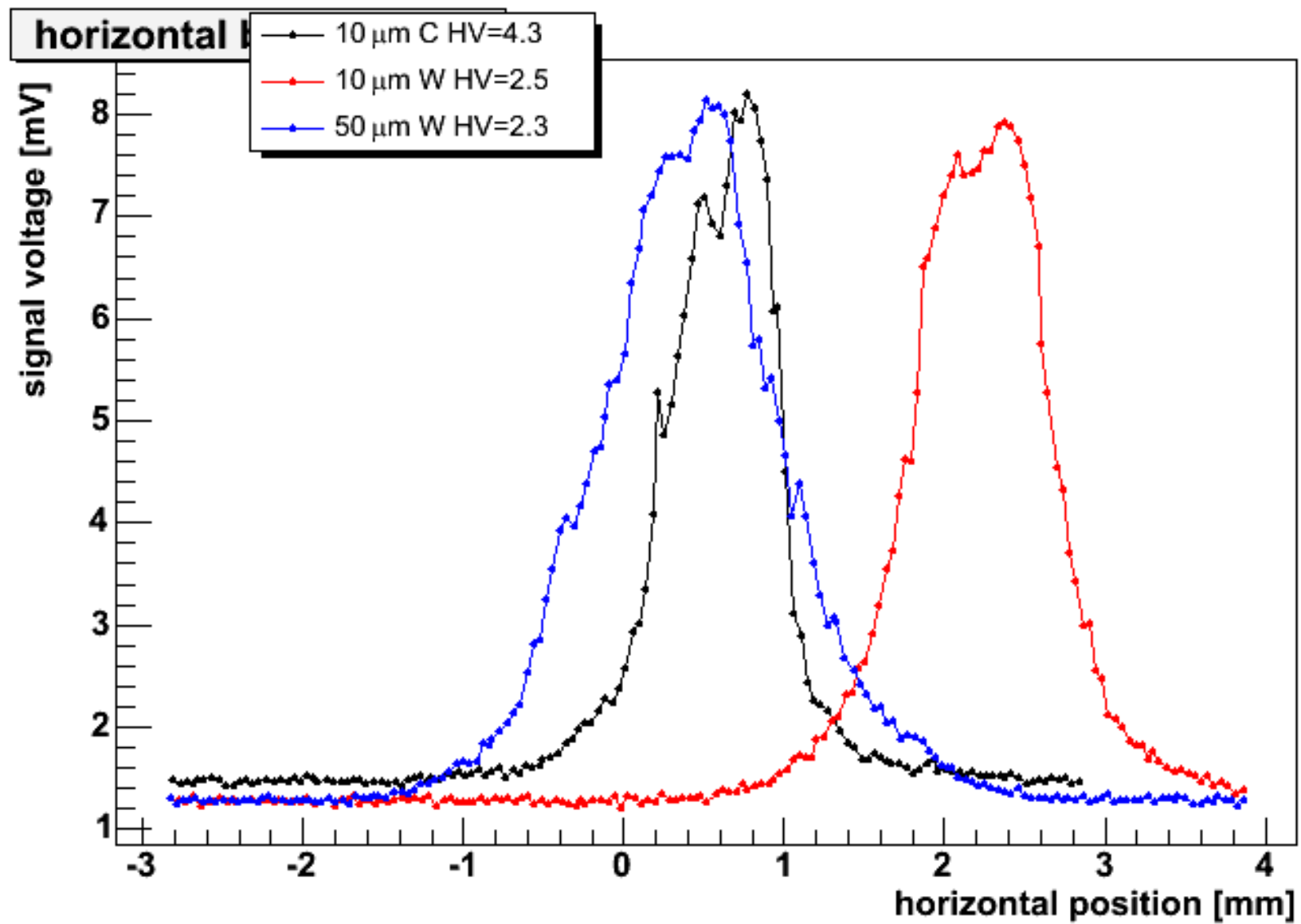
Are Gaussian fits representative for the beam profile?



# horizontal beam profile

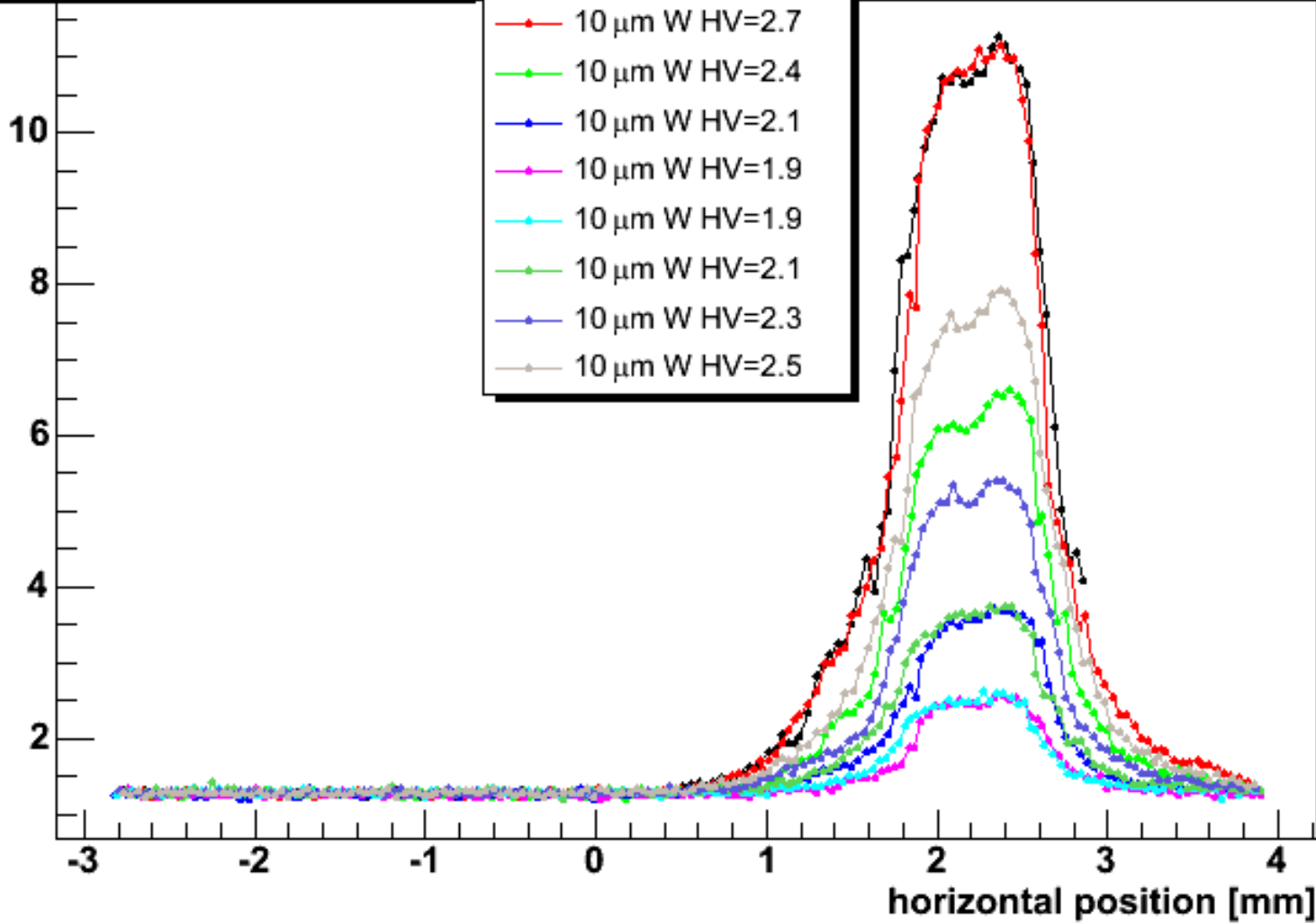


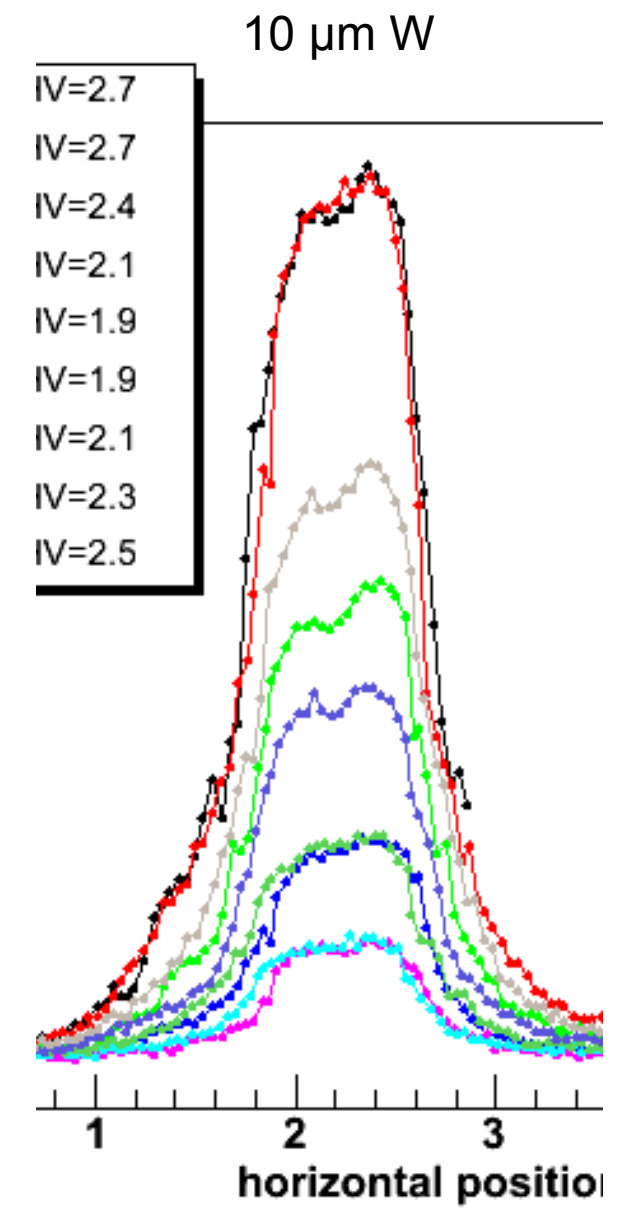
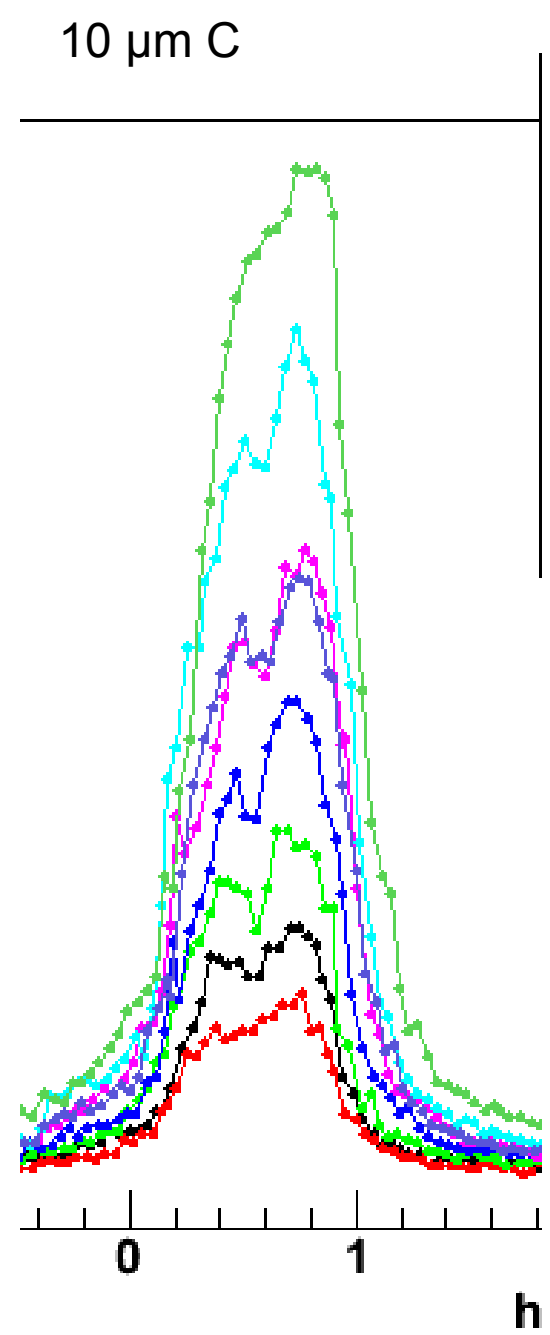
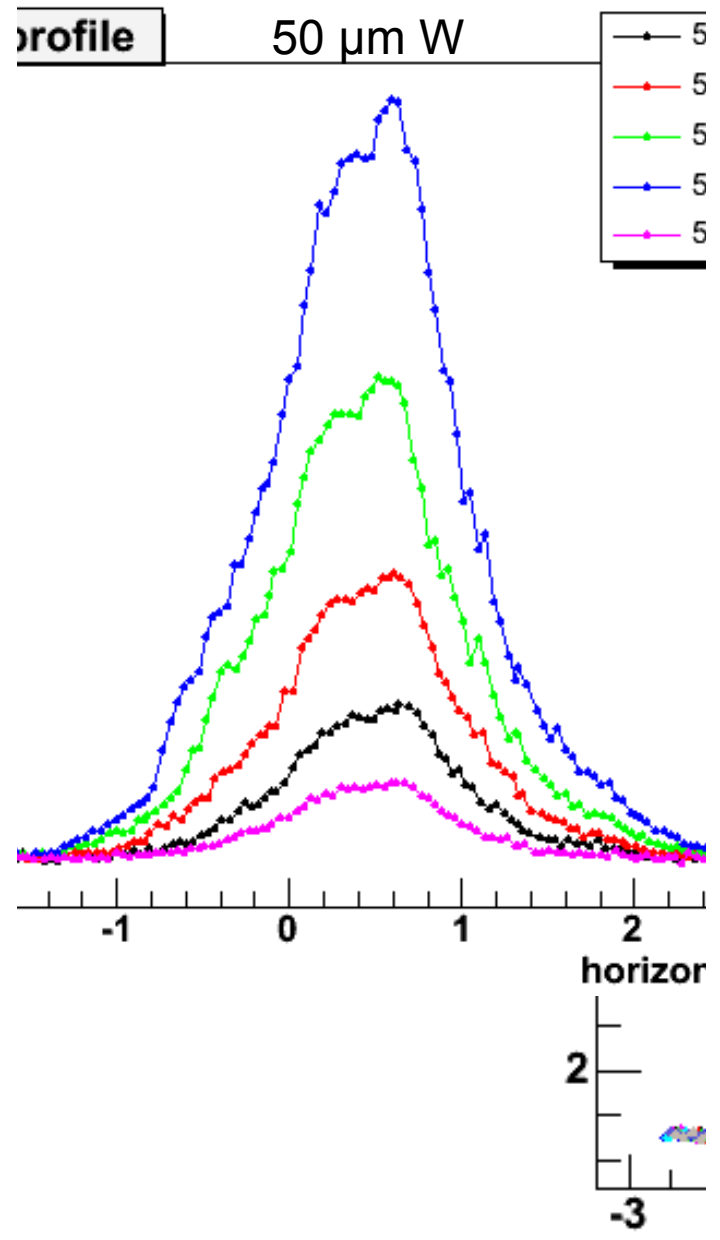
reproducibility of the measure: 0.01 mm



### horizontal beam profile

signal voltage [mV]





## Summary:

- beam position and profile was stable enough for the measurements
  - beam size: reproducible within 10  $\mu\text{m}$  RMS
  - beam center: reproducible within 20  $\mu\text{m}$  RMS
- Gaussian sigma is a valid representation of the beam size
- size of profile obtained with W wire depend on PM voltage

## To do:

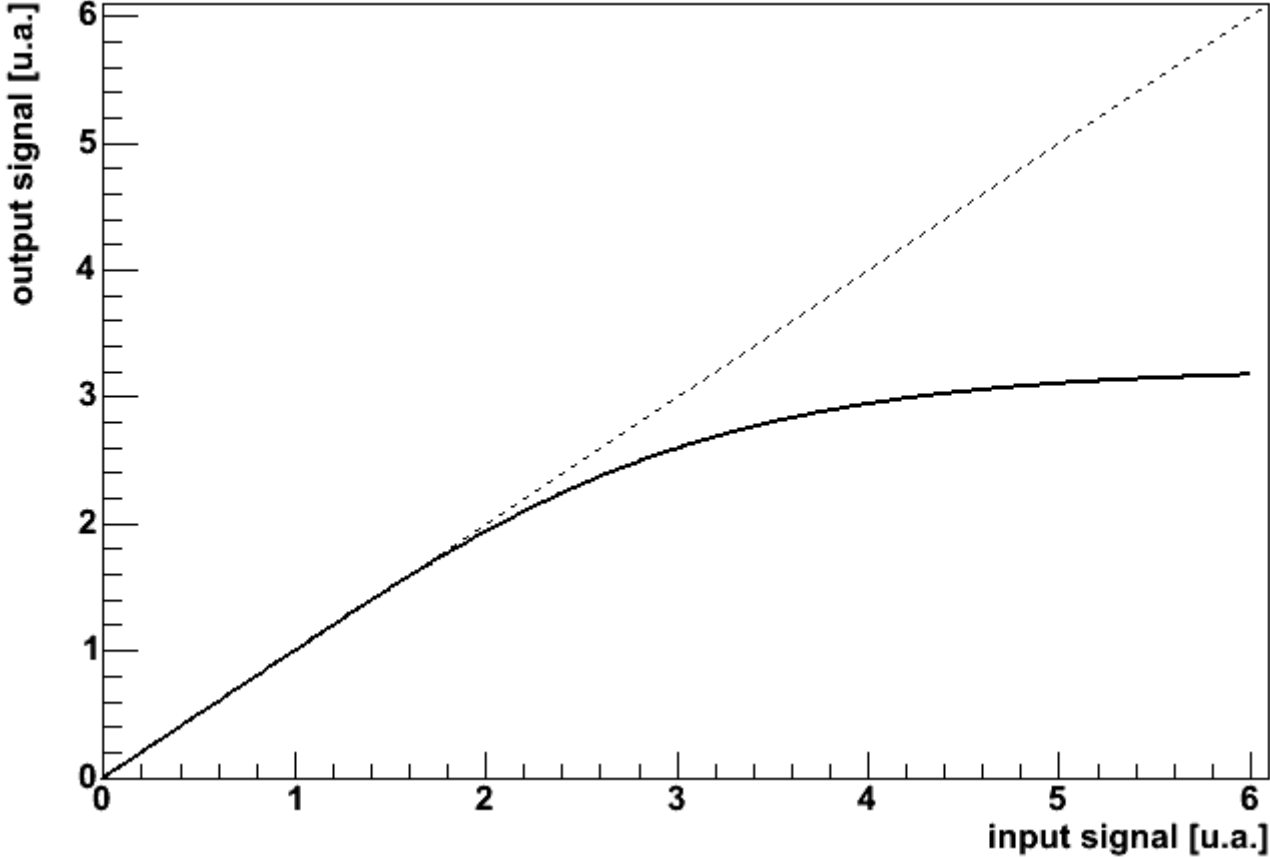
- repeat same measurements with other wirescanners
- apply grey filters to avoid saturation

"The studies currently made by E.Prat stresses the importance to understand the wirescanner signals in detail"

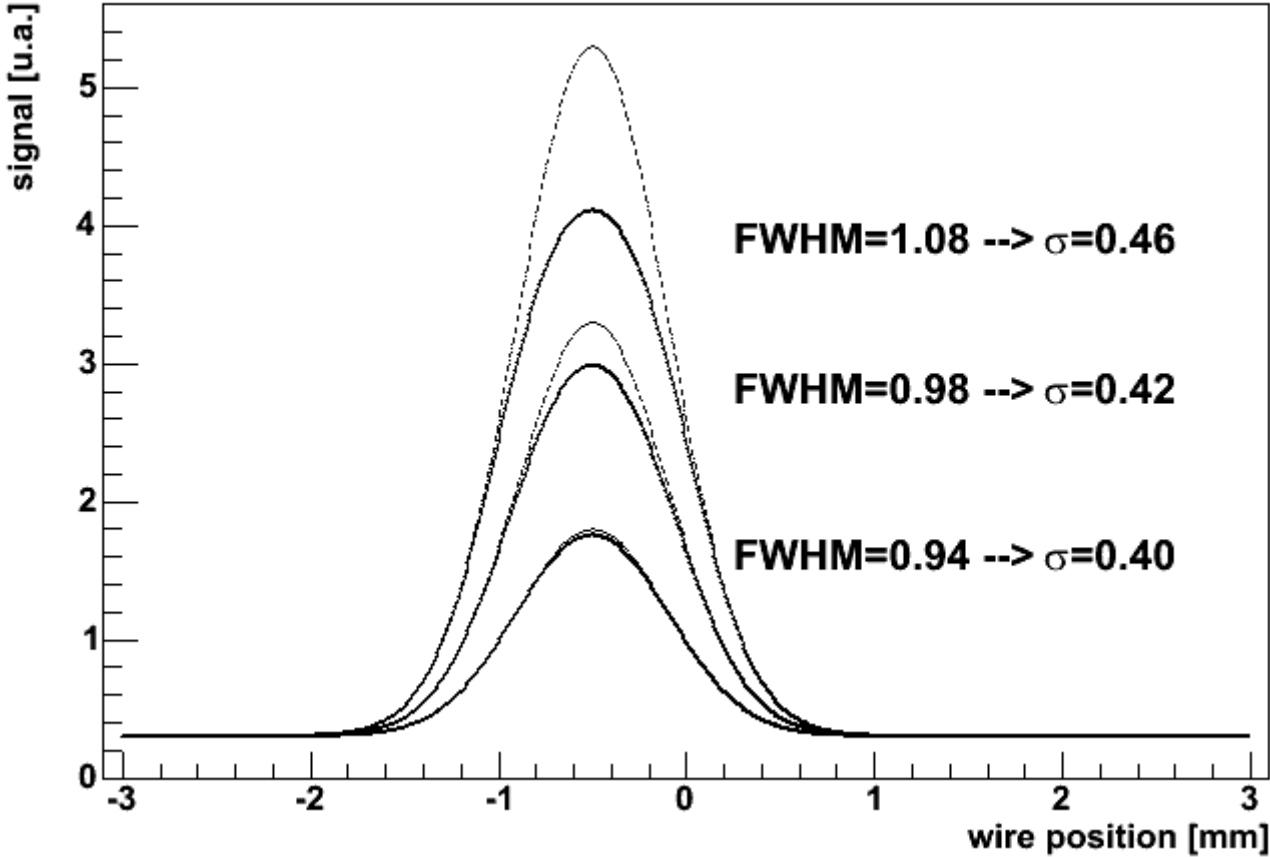
THANK YOU FOR YOUR ATTENTION!



SIMULATION



SIMULATION



# SIMULATION

