

# Advances in Ion back bombardment simulation with GPT

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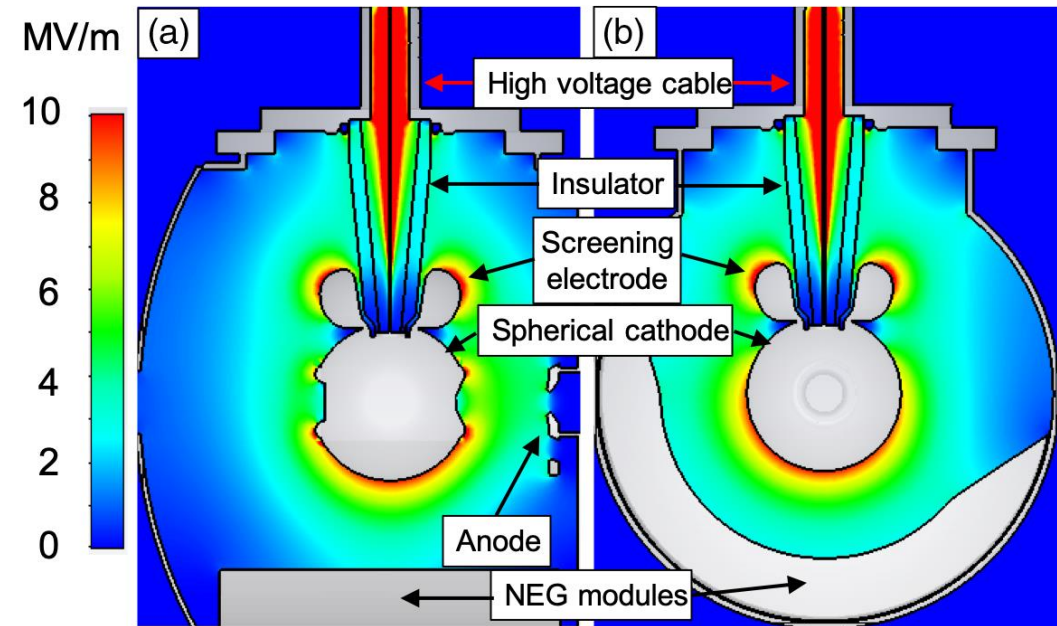


# JLab Electron gun electric field

Electric field map provided by Gabriel

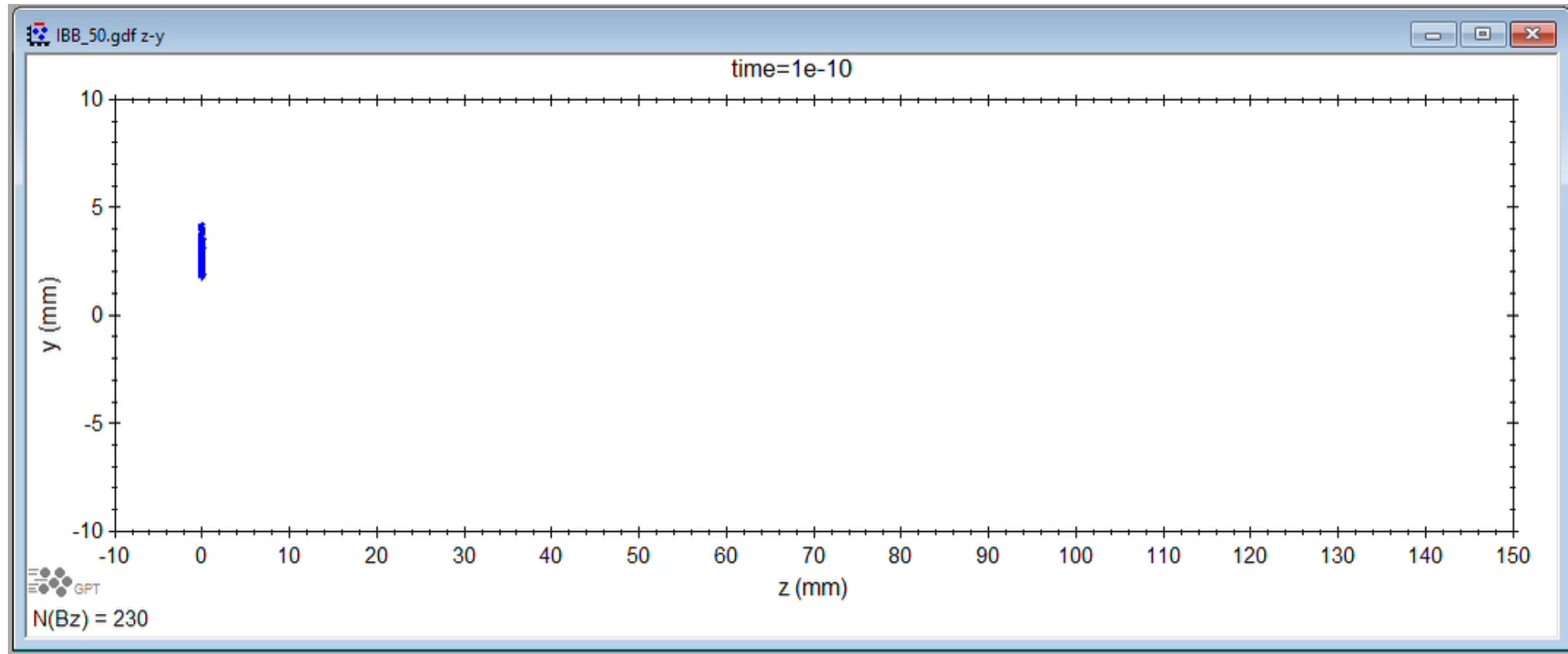
Field maps for both biased and unbiased anode

Field used for the simulations was related to an unbiased anode with a 100kV voltage



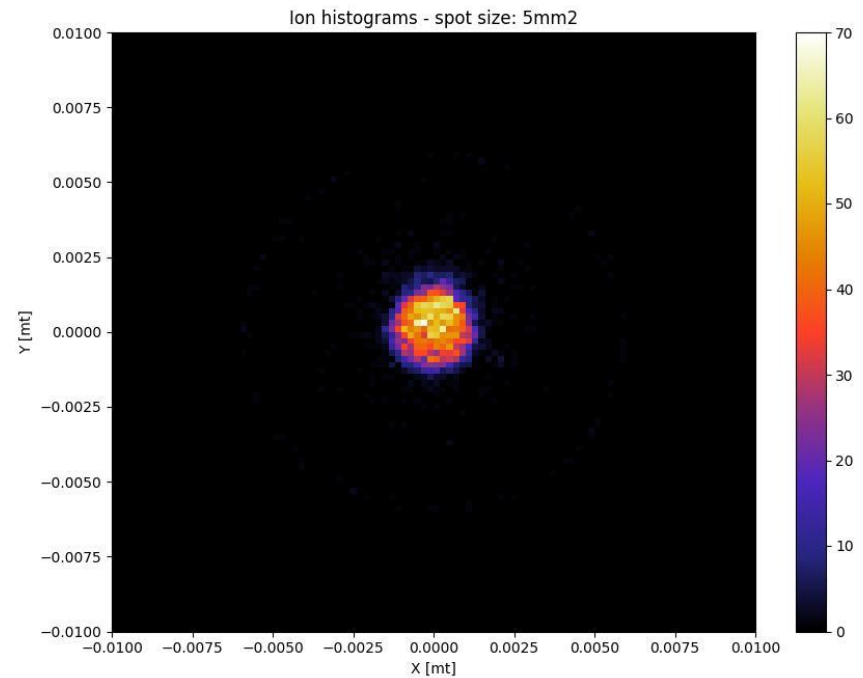
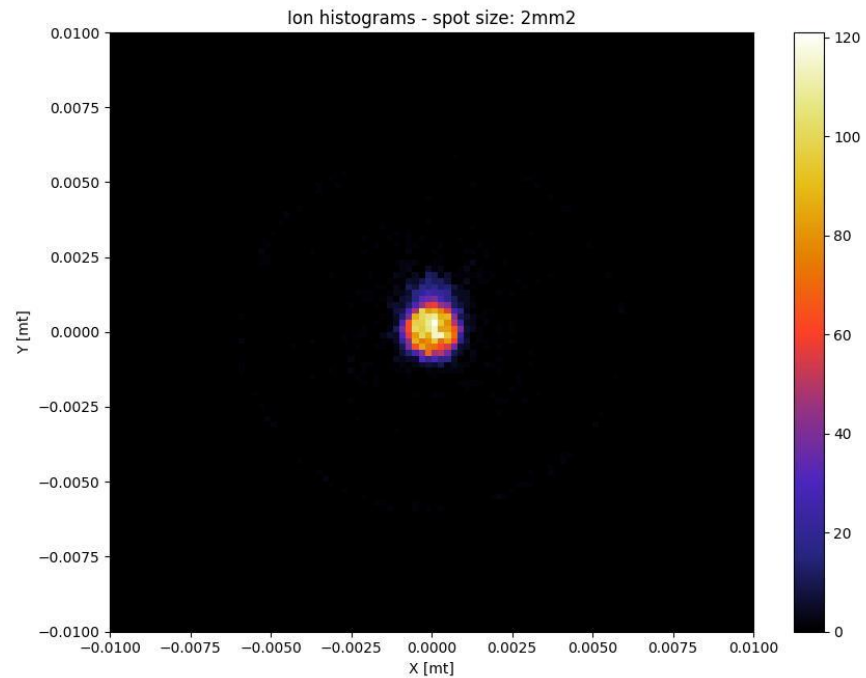
\*For illustrative reasons not the actual field map

# Simulation animation



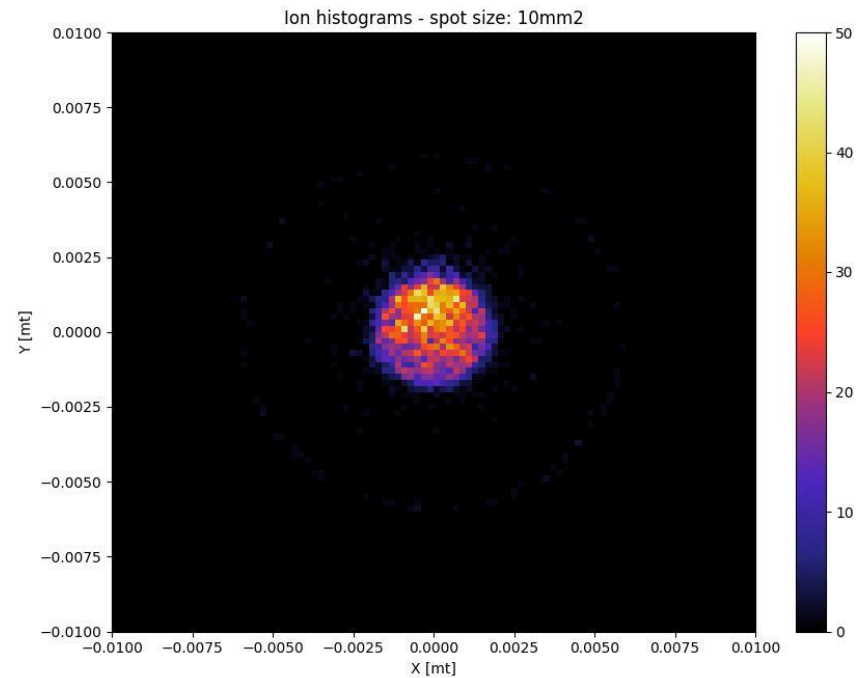
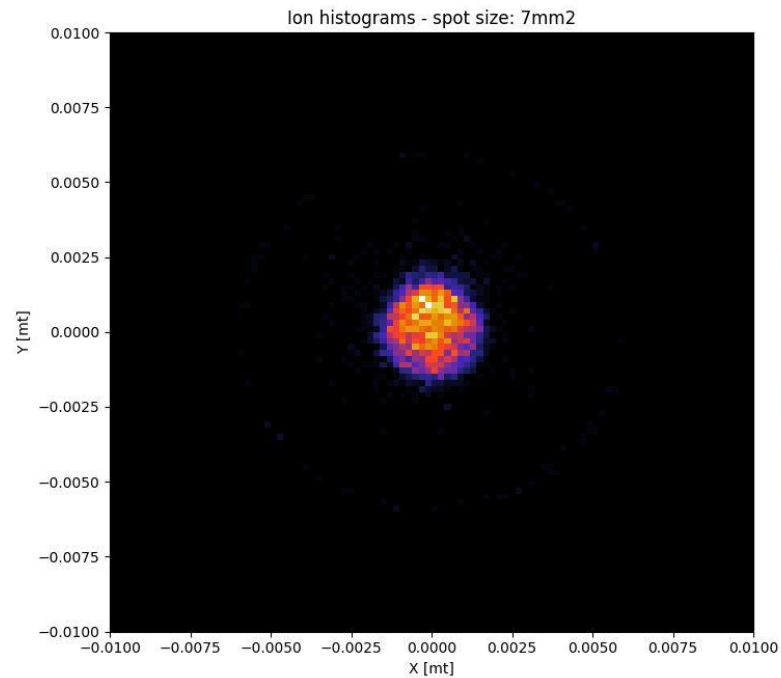
# XY particle distribution - No offset

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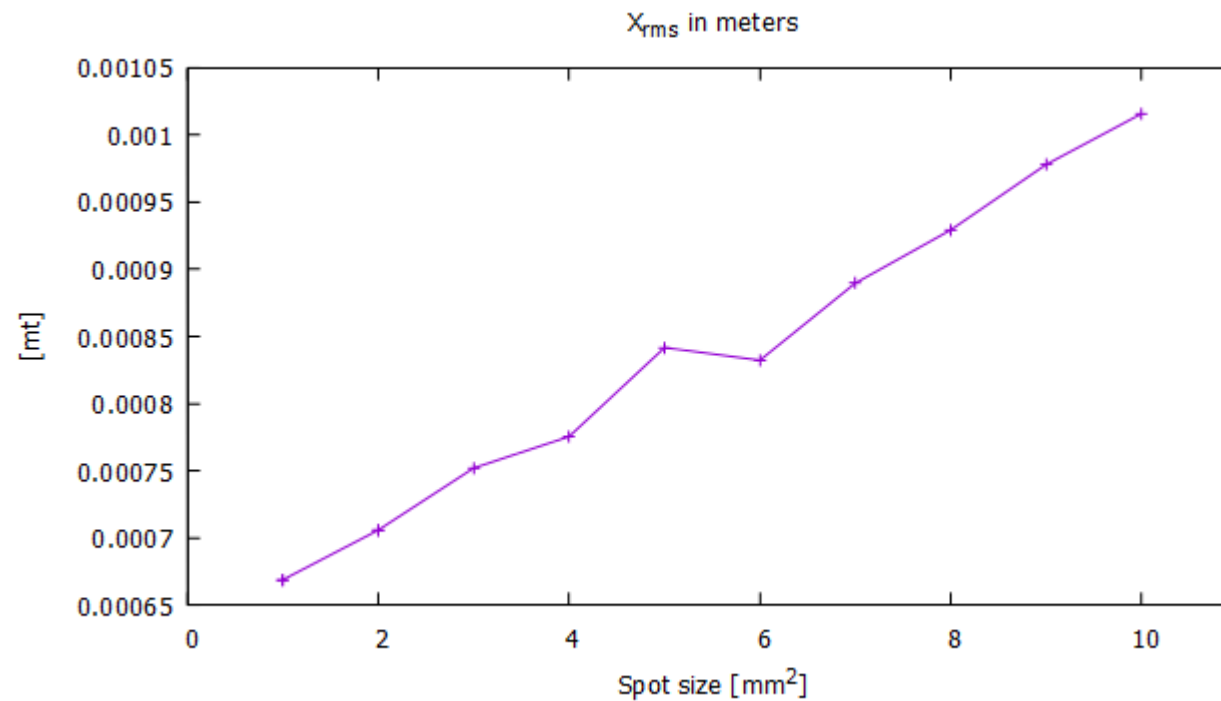
# XY particle distribution - No offset

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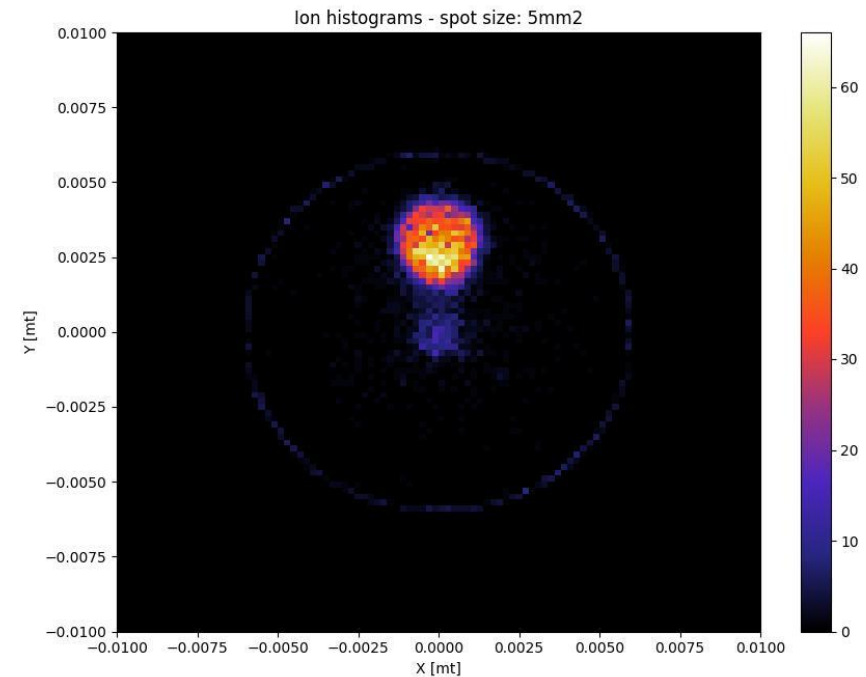
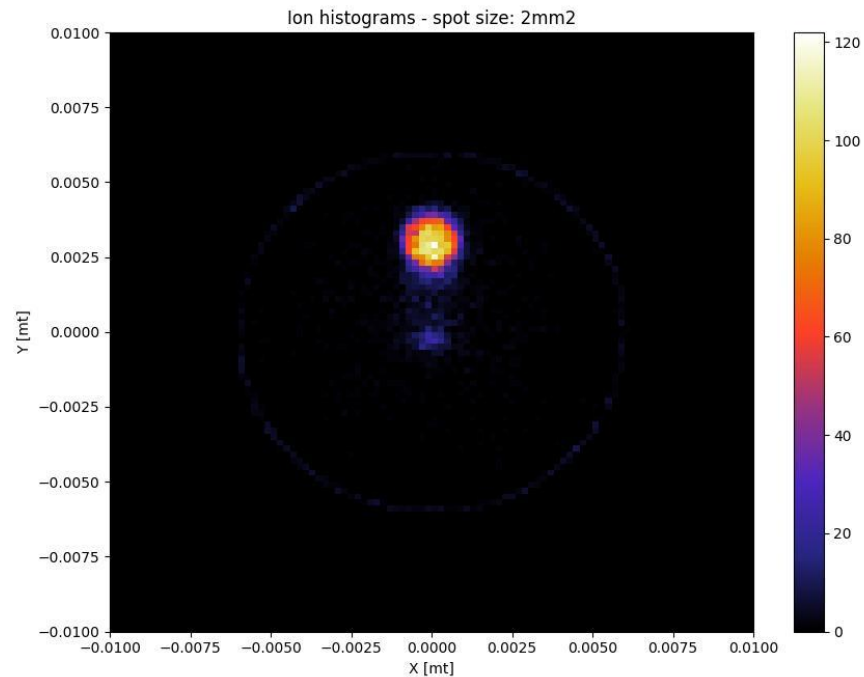


# $X_{rms}$ as function of spot size - No offset

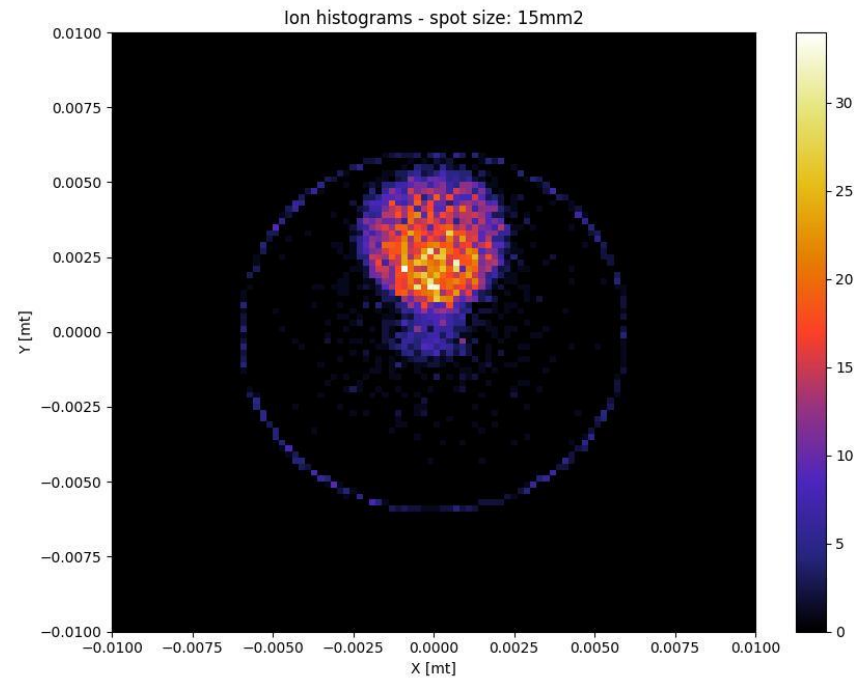
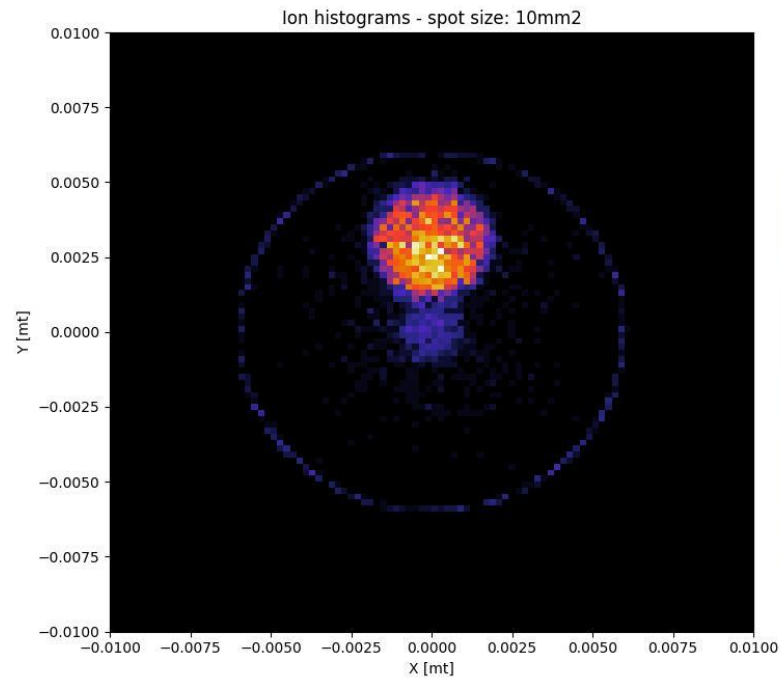
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# XY particle distribution – 3mm vertical offset



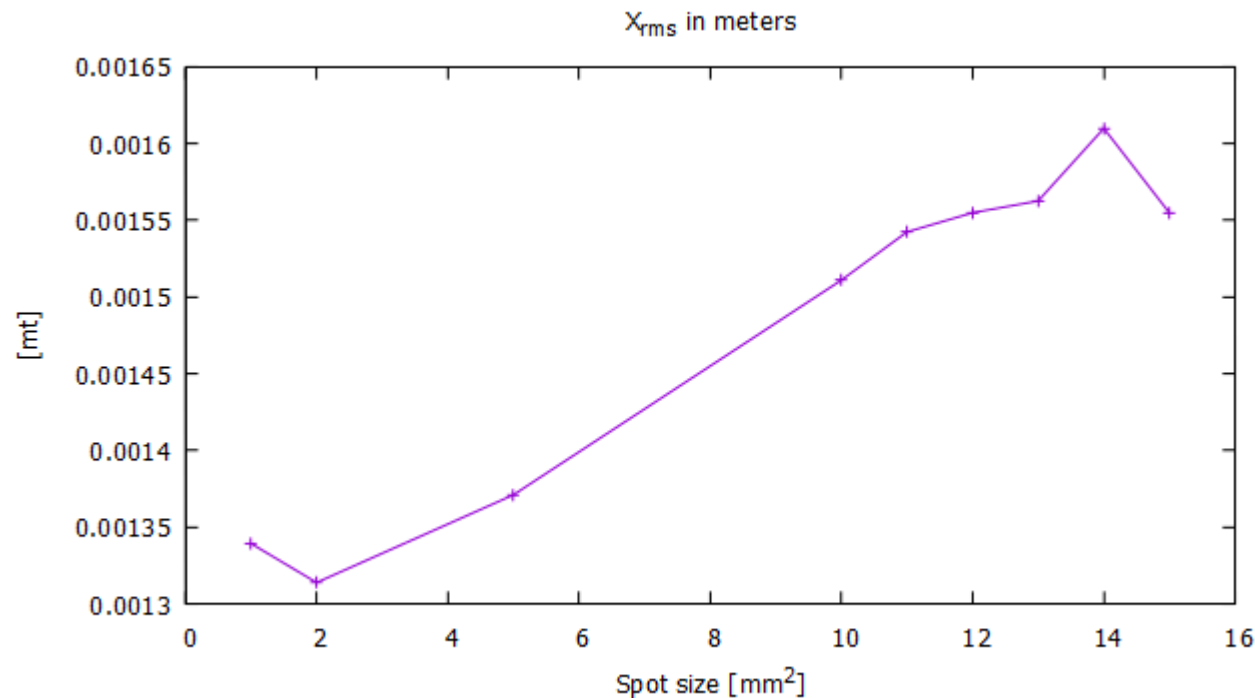
# XY particle distribution – 3mm vertical offset





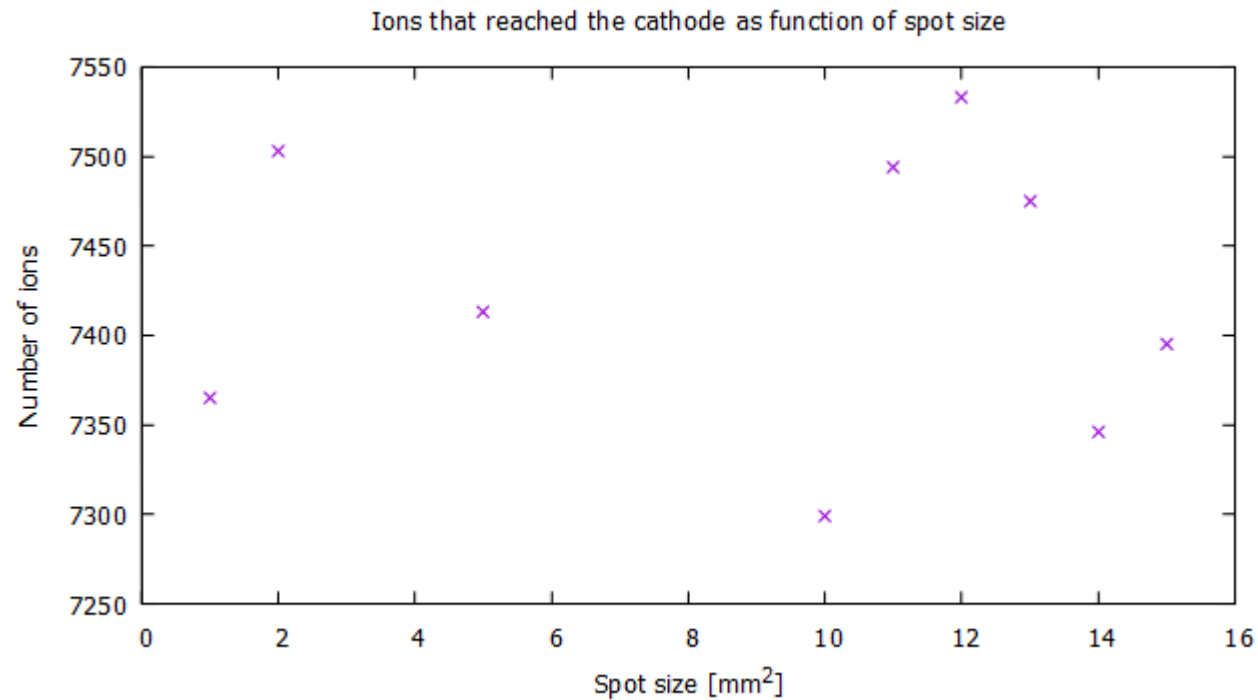
# $X_{rms}$ as function of spot size – 3mm vertical offset

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# Number of ions per spot size

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50 runs for each spot size  
Less than 5% difference