SHiP Joint physics and detector meeting - vacuum vessel workshop

Updates on photon transport simulation
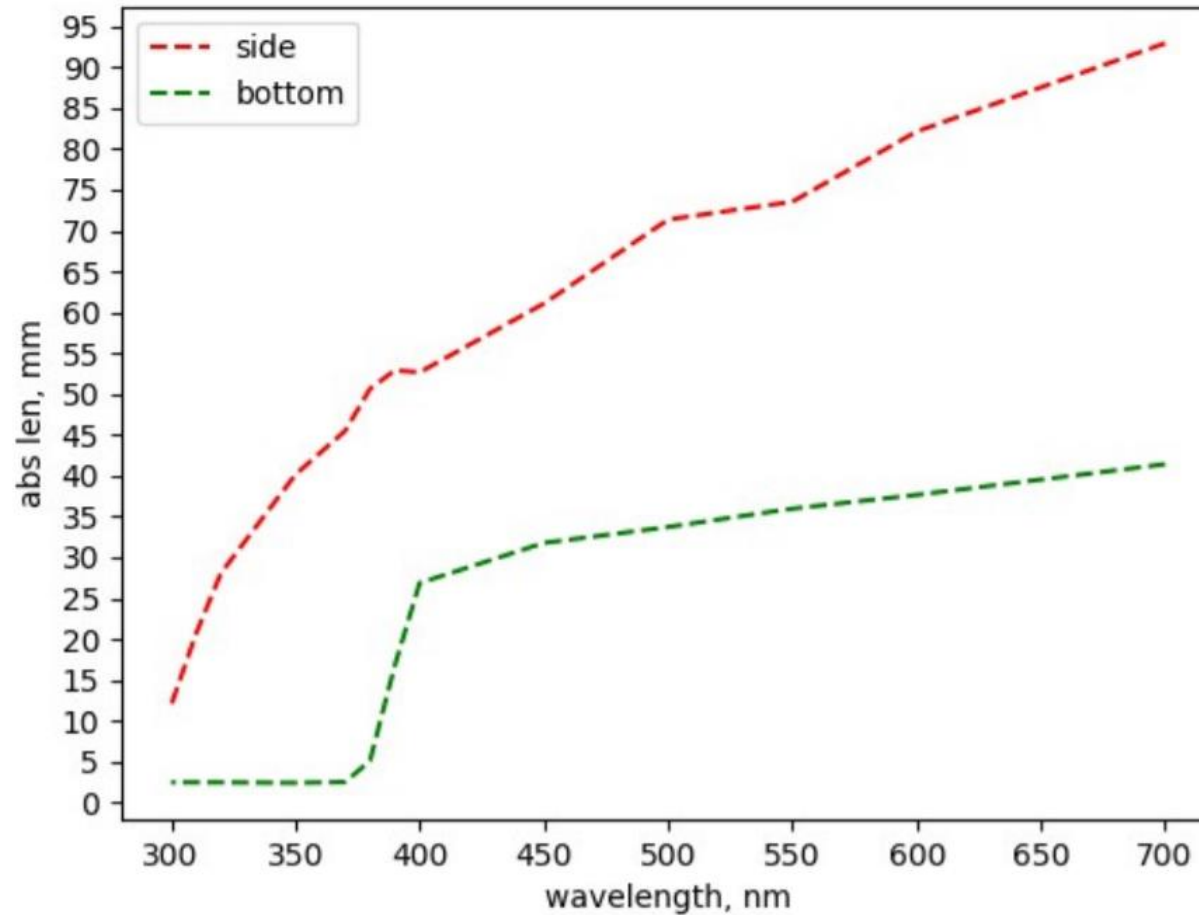
Vladyslav Orlov

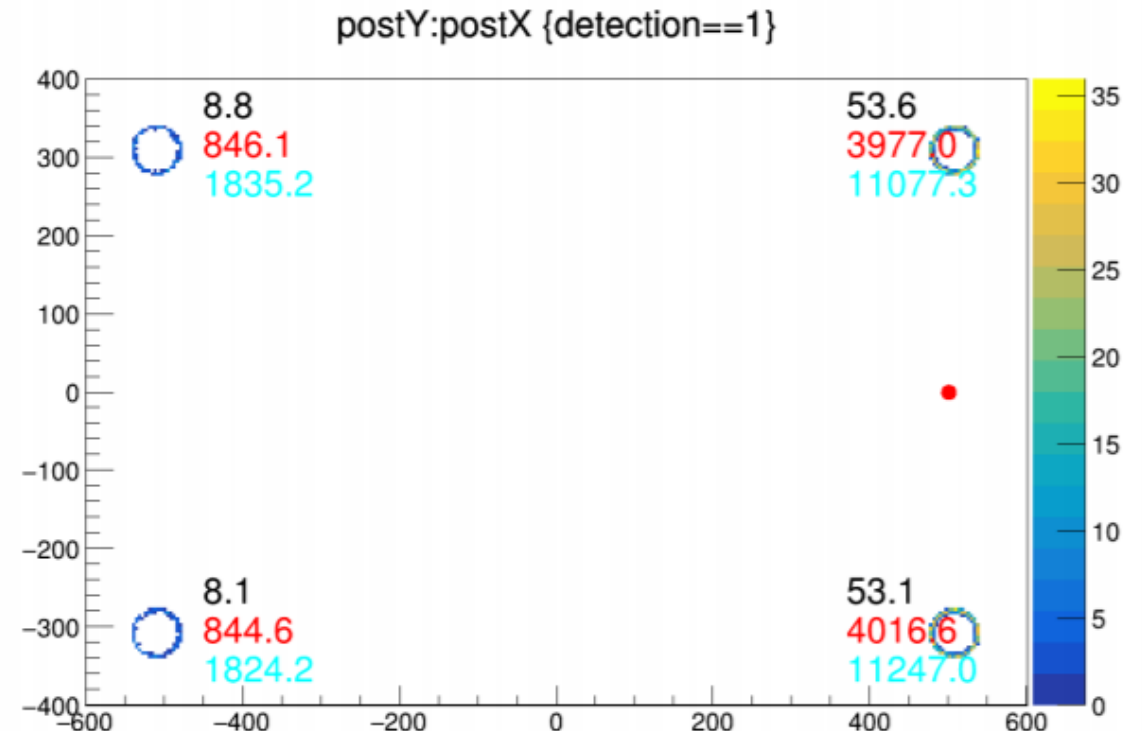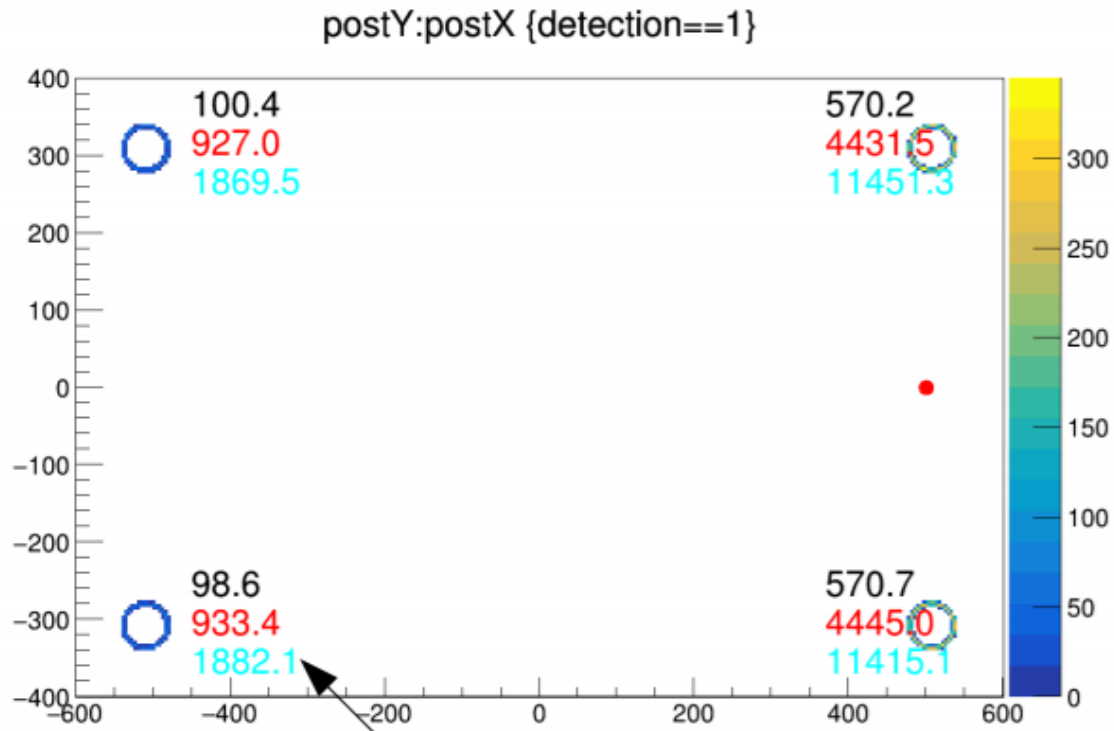**Taras Shevchenko national university of Kyiv, Ukraine**

Absorption length study

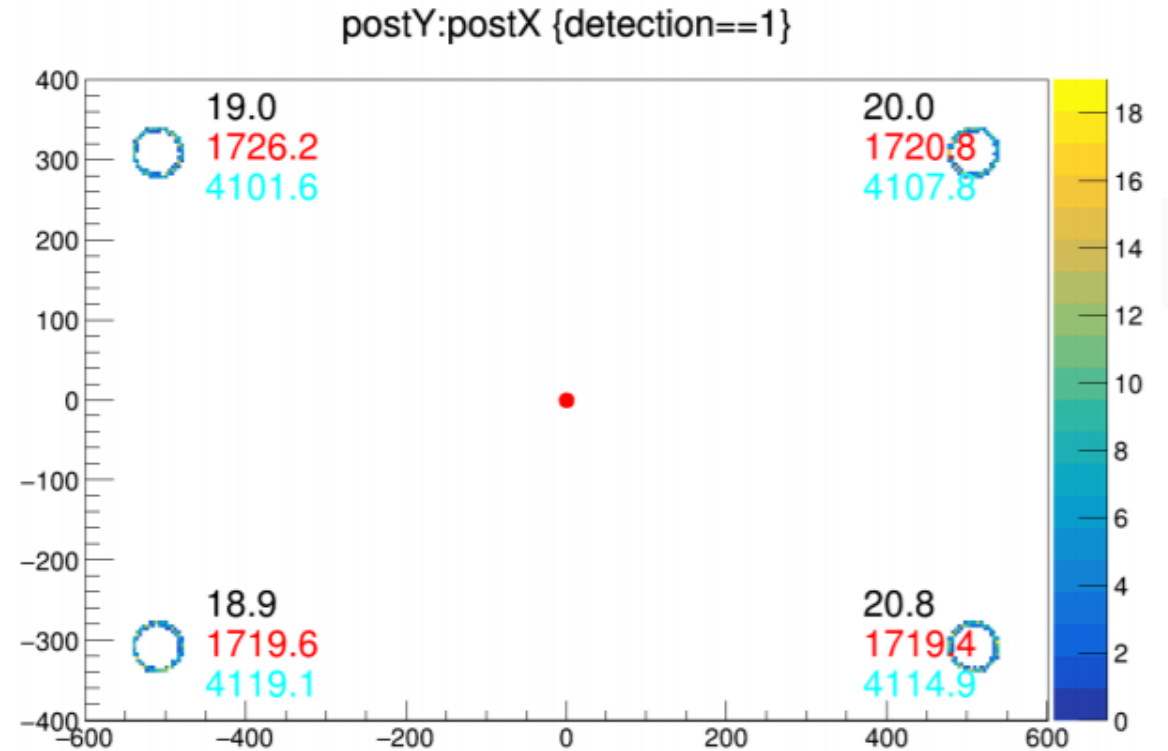# Implementation of the absorption length for PMMA

by Andrii Kotenko

Comparison for 1 GeV muons

postY:postX {detection==1}

postY:postX {detection==1}
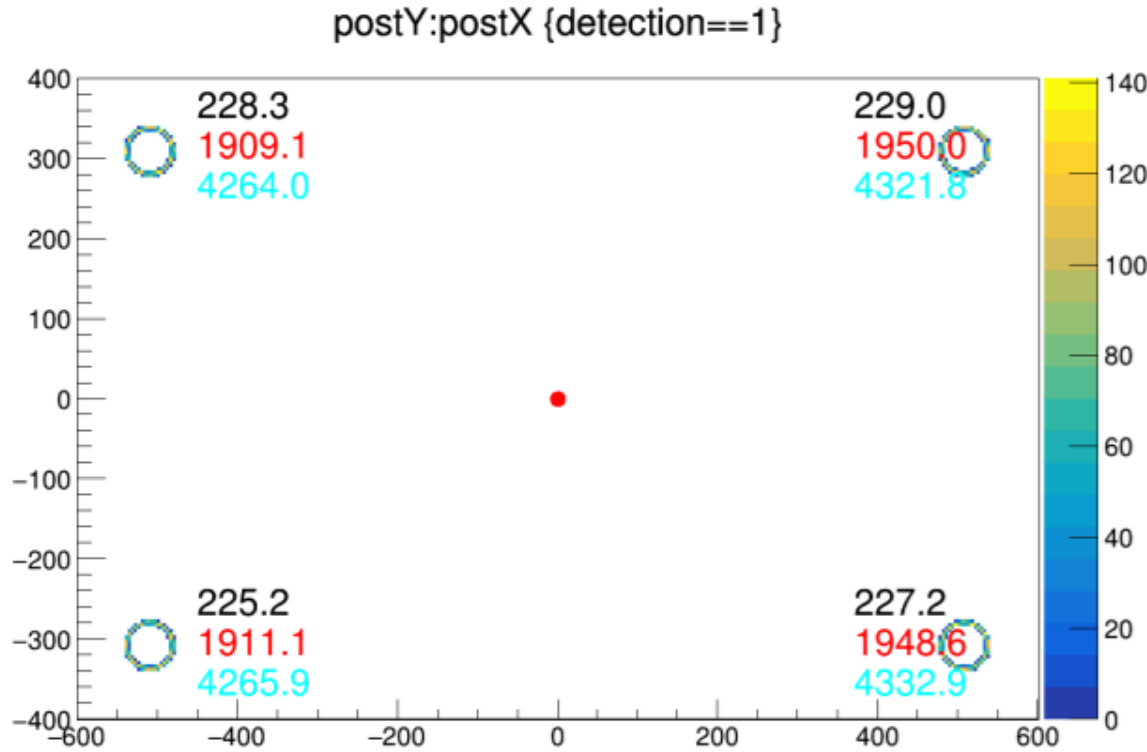
(1) detected, (2) fallen on WOM(3), fallen on PMMA vessel

by Andrii Kotenko

Comparison for 1 GeV muons

by Andrii Kotenko

Comparison for 1 GeV muons

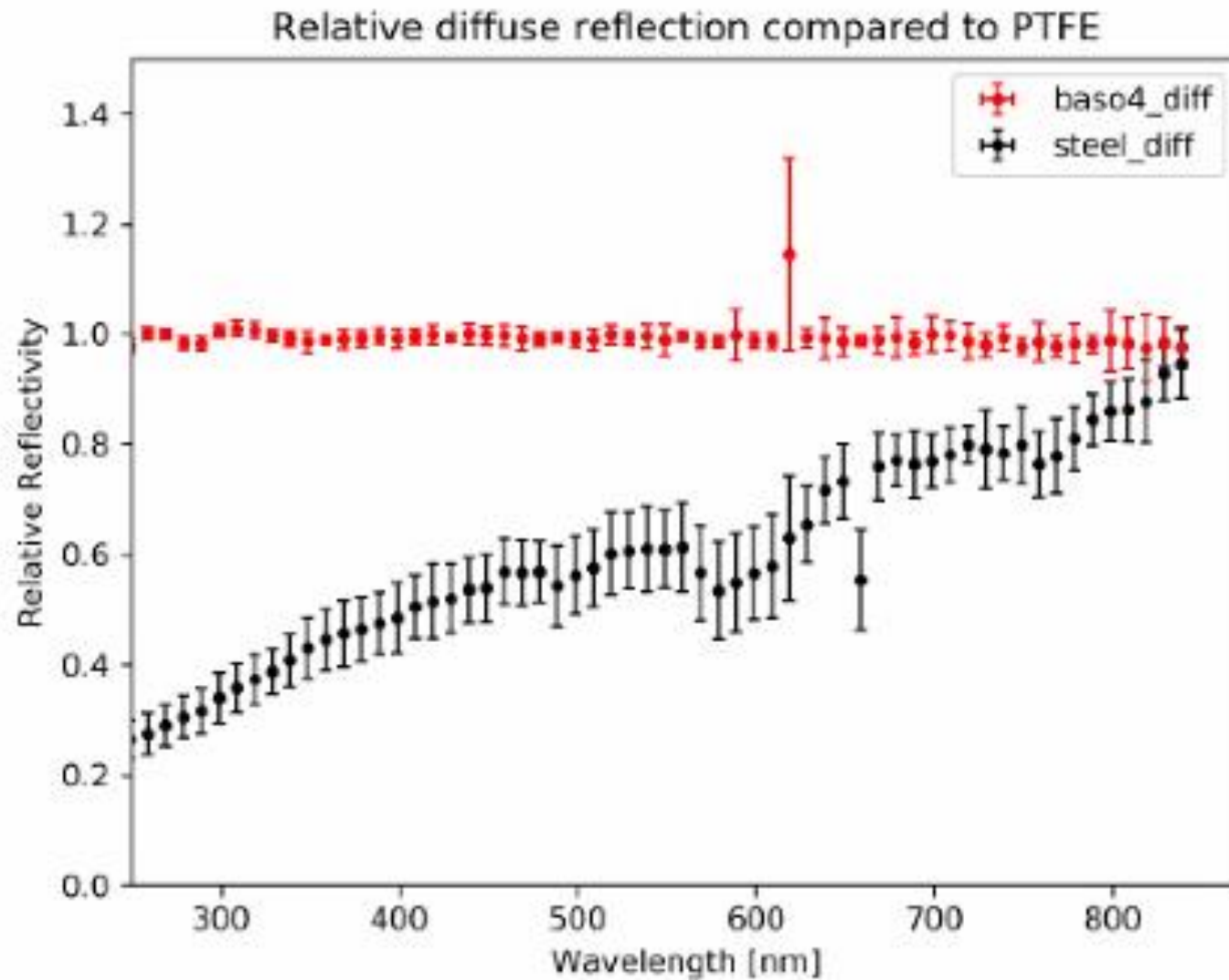postY:postX {detection==1}

postY:postX {detection==1}
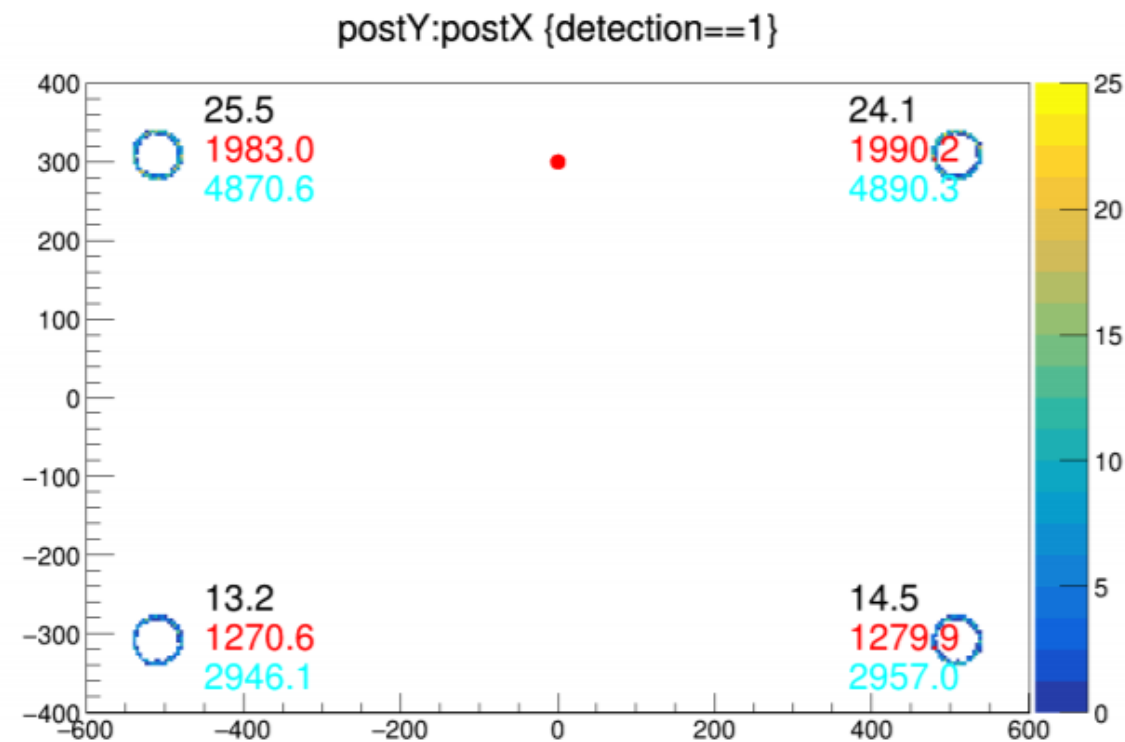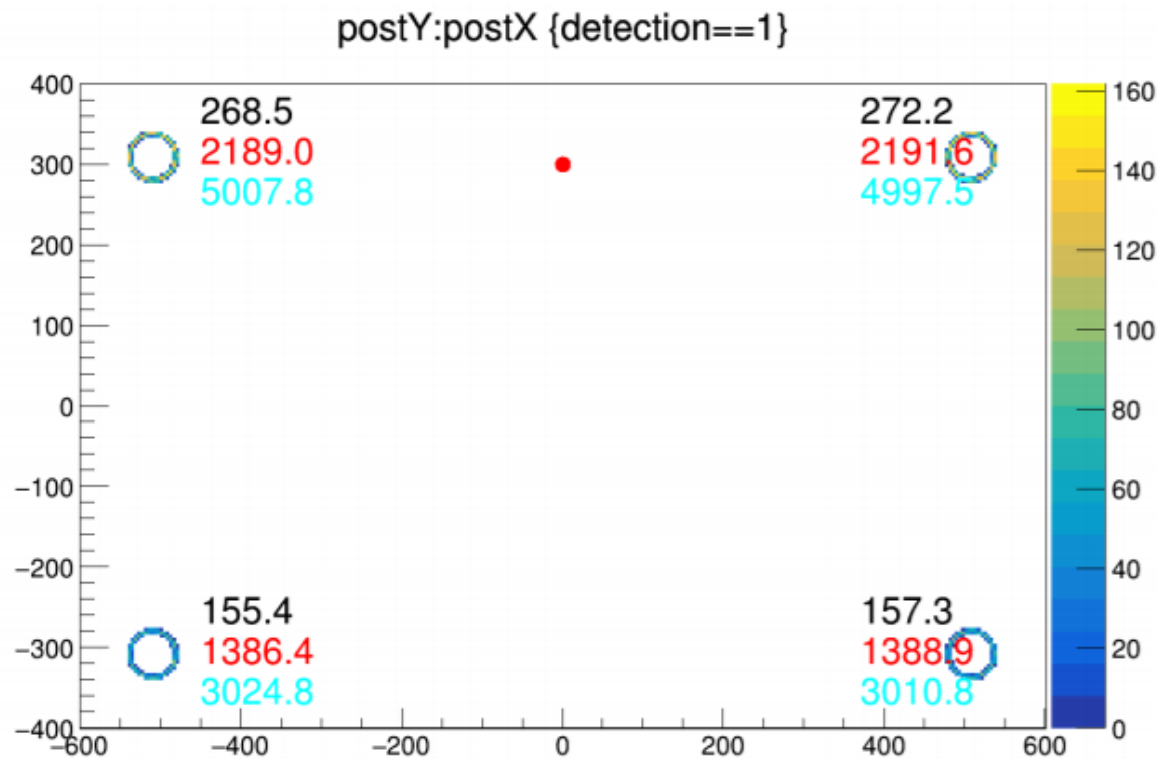
by Andrii Kotenko

Reflectivity of the coating

Implemented reflectivity of $BaSO_4$ coating

Relative diffuse reflection compared to PTFE
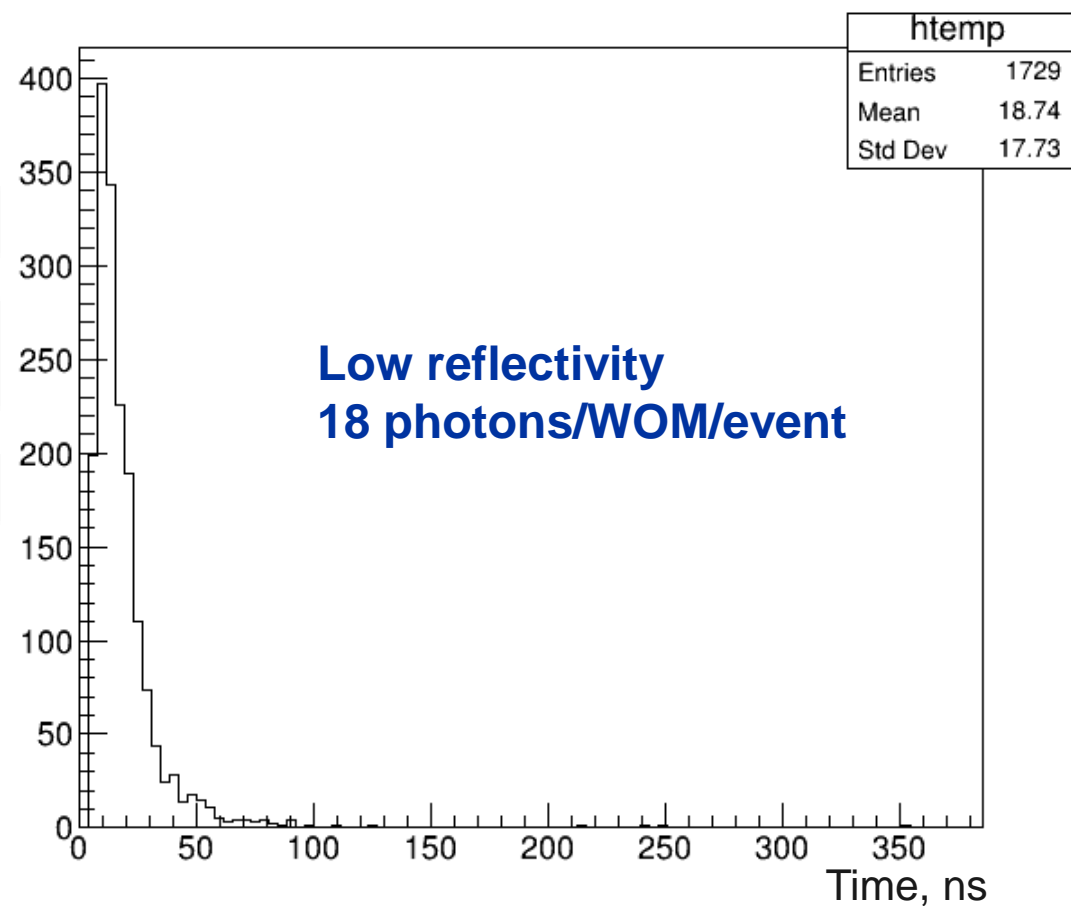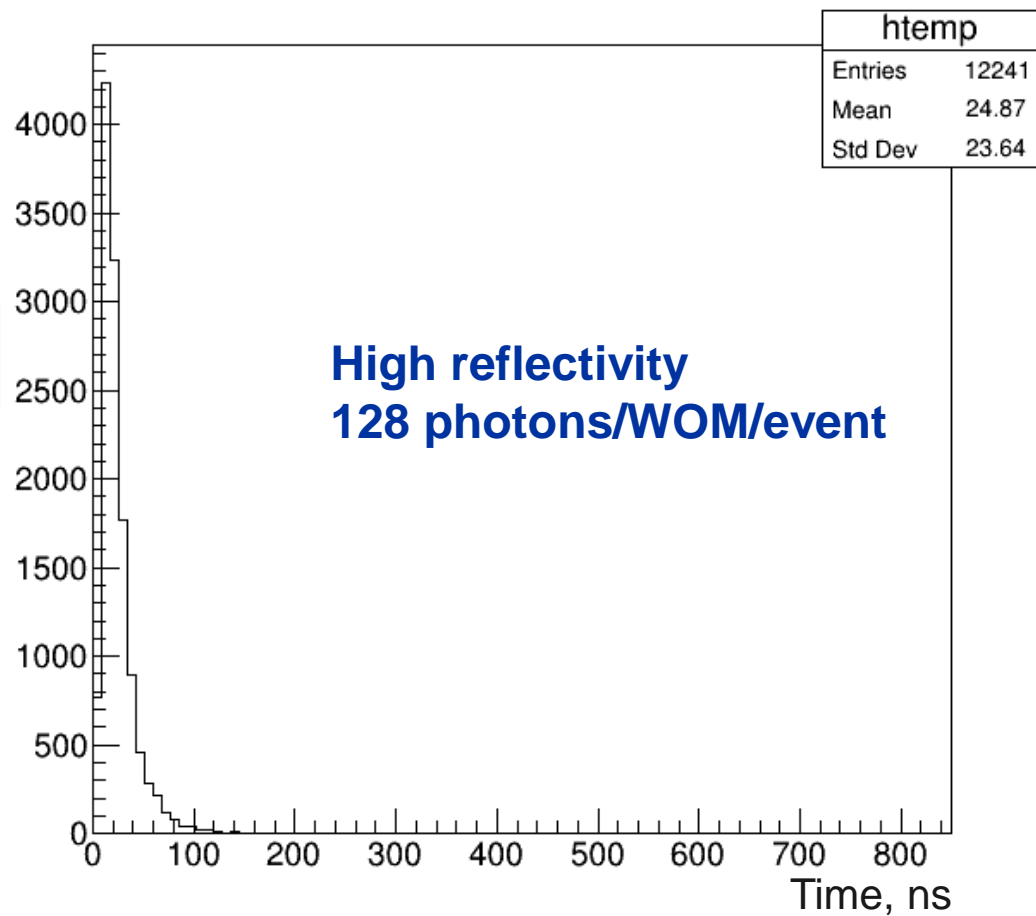
by Patrick Deucher (Mainz)

Simulation with 4 WOM tubes at the corners

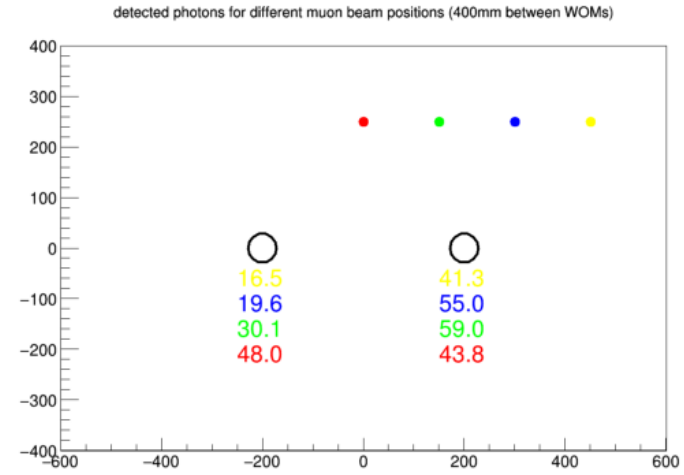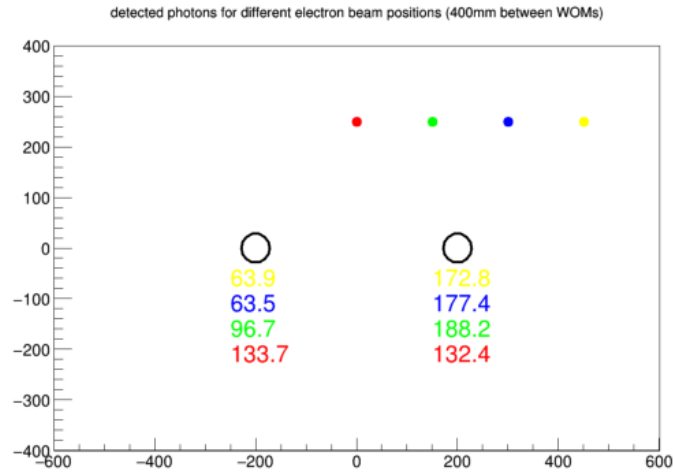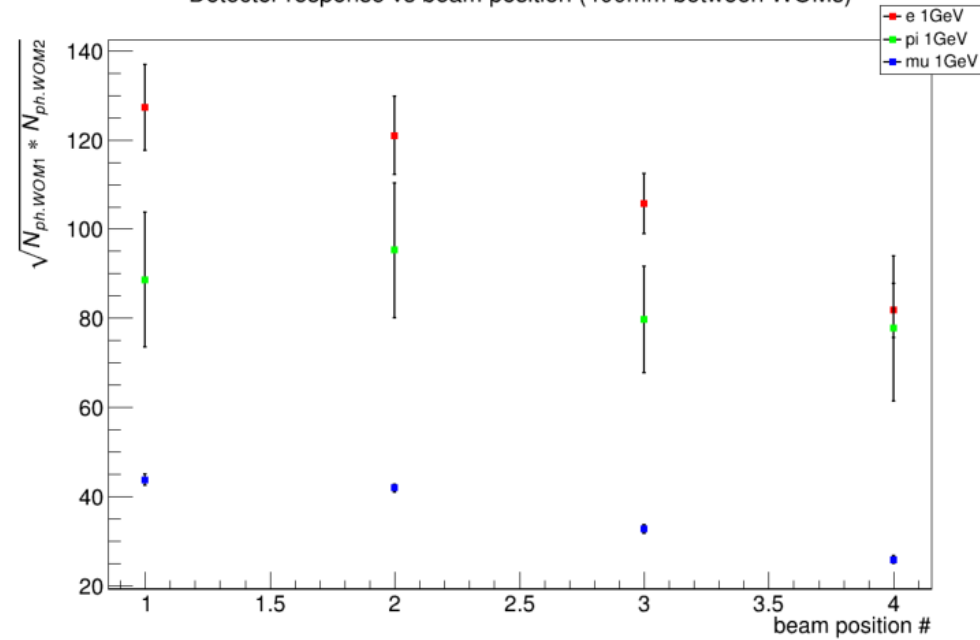# 1 GeV μ^+ hitting at the center

**High reflectivity
128 photons/WOM/event**

htemp	
Entries	12241
Mean	24.87
Std Dev	23.64

**Low reflectivity
18 photons/WOM/event**

htemp	
Entries	1729
Mean	18.74
Std Dev	17.73
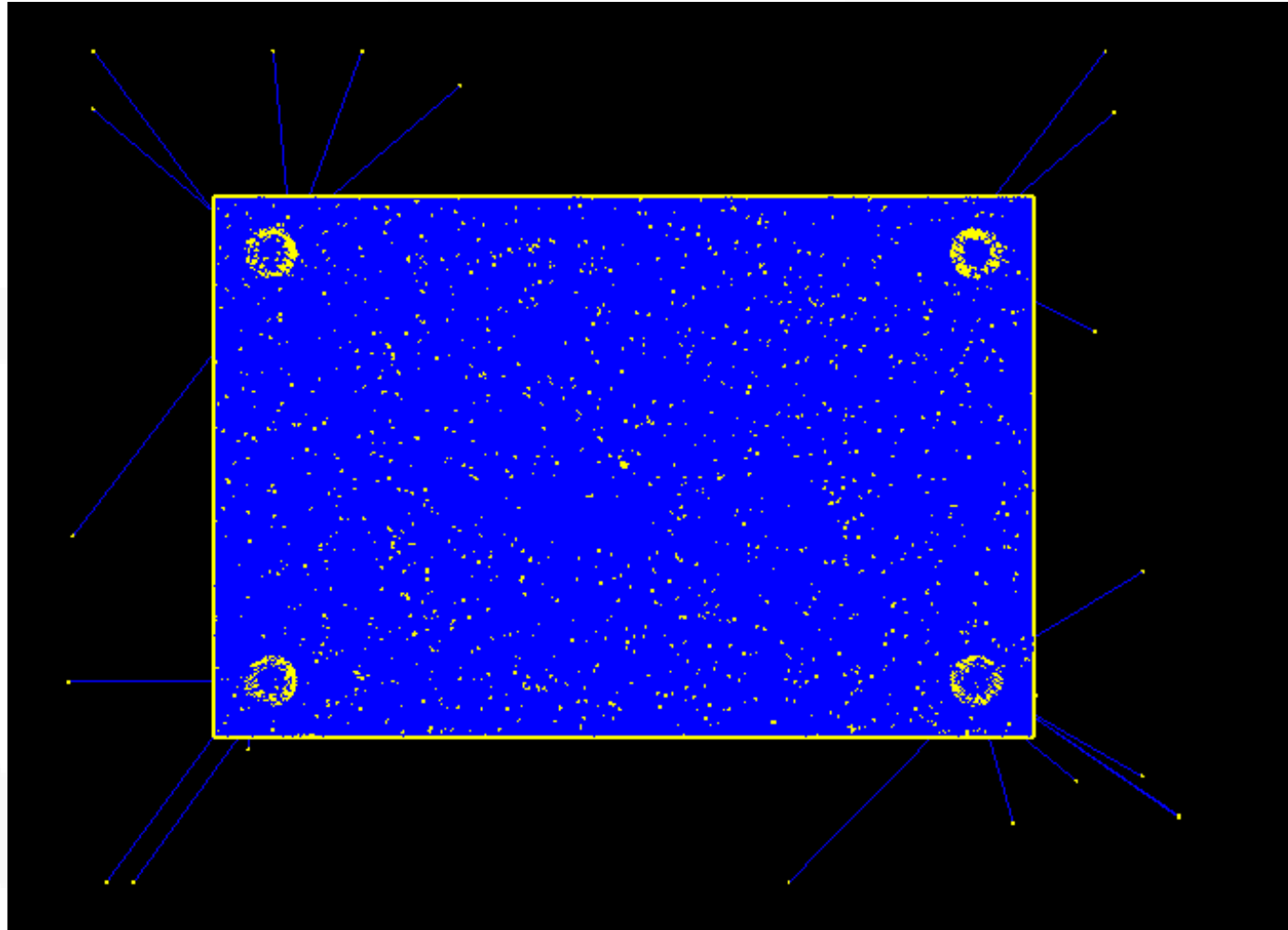
Geometry optimization for 2 WOMs

detected photons for different electron beam positions (400mm between WOMs)

detected photons for different muon beam positions (400mm between WOMs)

detected photons for different pion beam positions (400mm between WOMs)
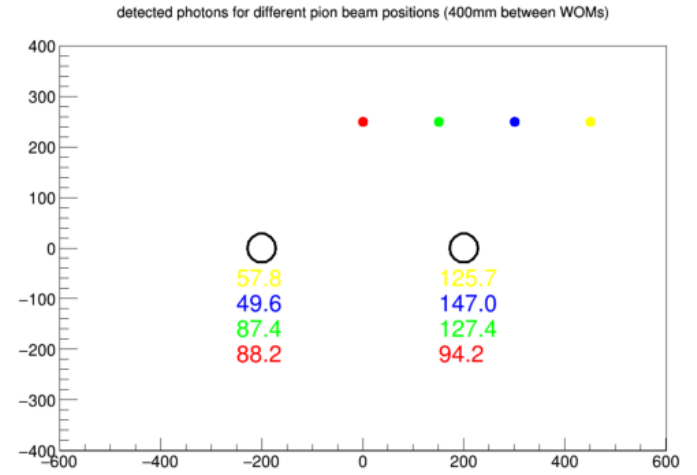
Detector response vs beam position (400mm between WOMs)

by Andrii Kotenko

Thank you!