



Study of the distribution of optical photons produced by different particles in a BE-BE hexagonal cell

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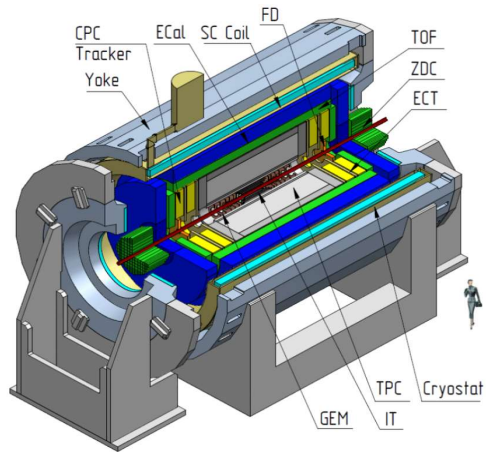
PhD. Heber Zepeda Fernández

Benemérita Universidad Autónoma de Puebla



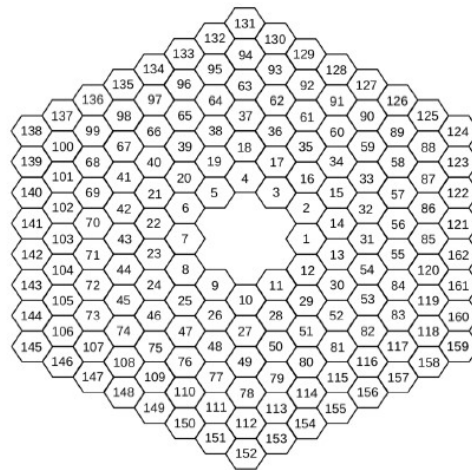
December 2020

Introduction

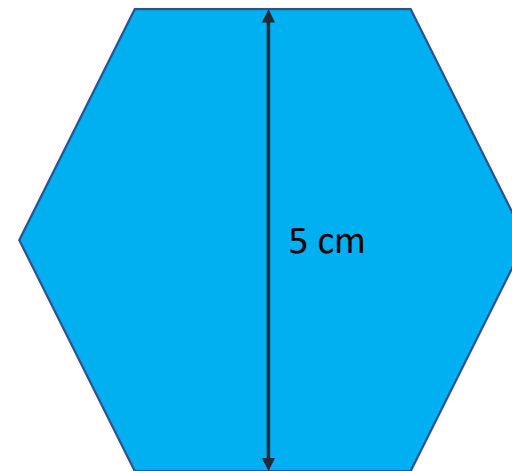


MPD(detector)

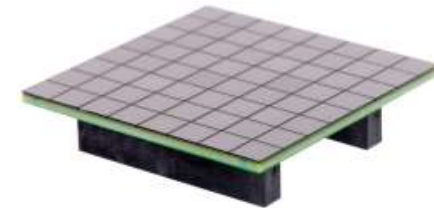
Be-Be Geometry



One of the hodoscopes of the Be-Be design
Geometry.



Individual Be-Be cell prototype
sketch. The hexagonal cell is 5 cm
high and 2 cm wide.



SiPM

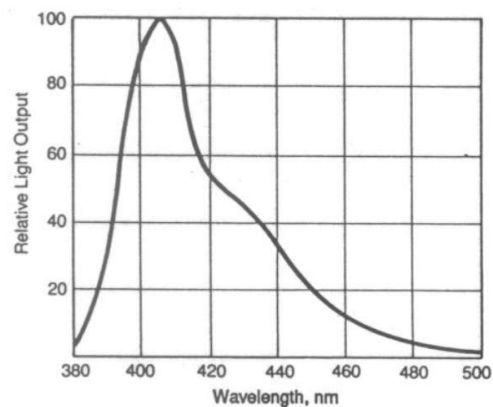
Methodology

BC-404

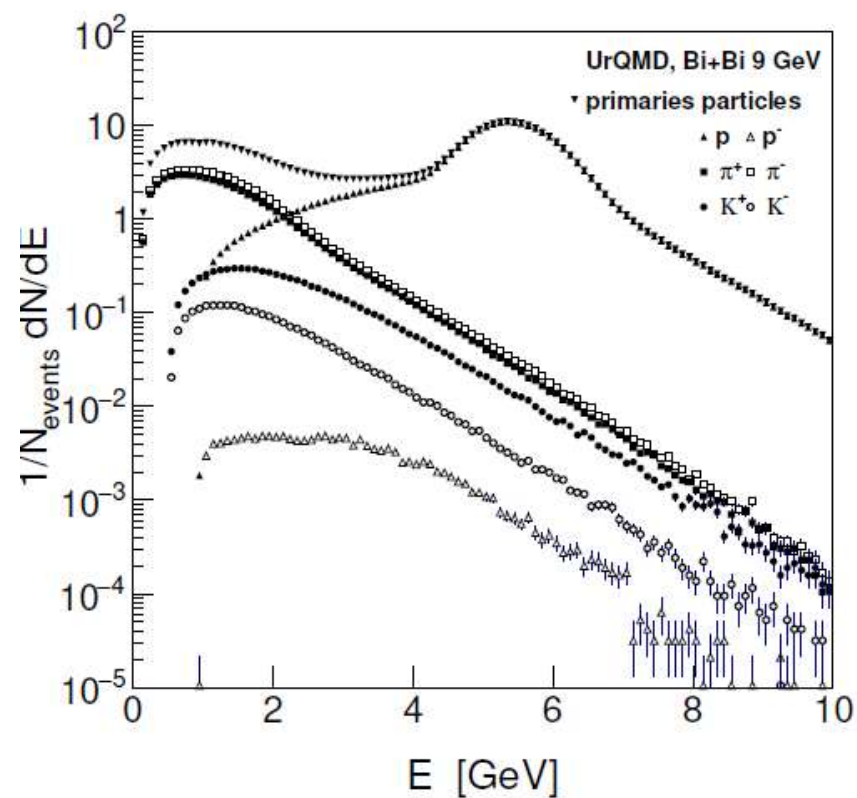


Scintillator plastic.

BC-404

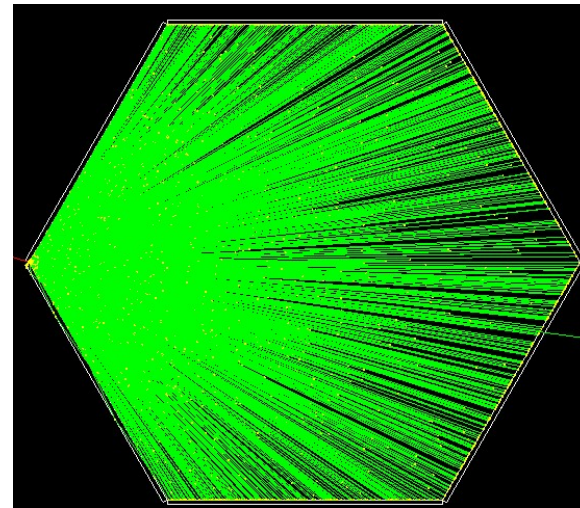
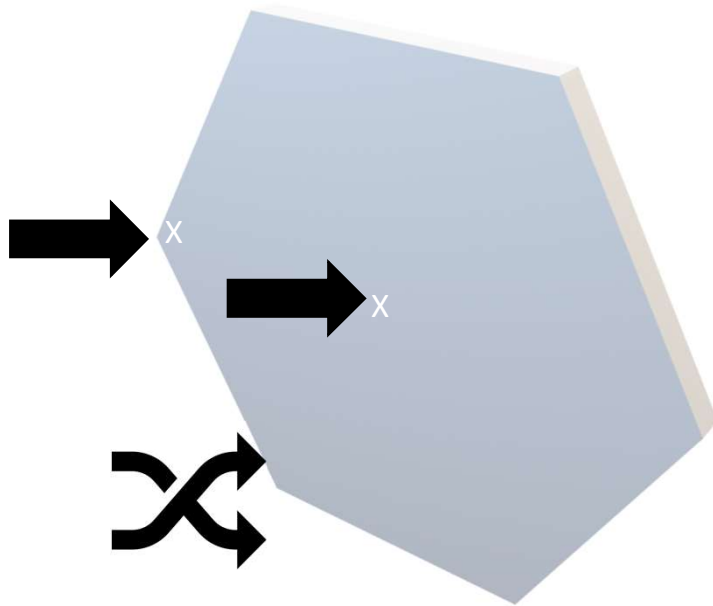


Emission spectrum.

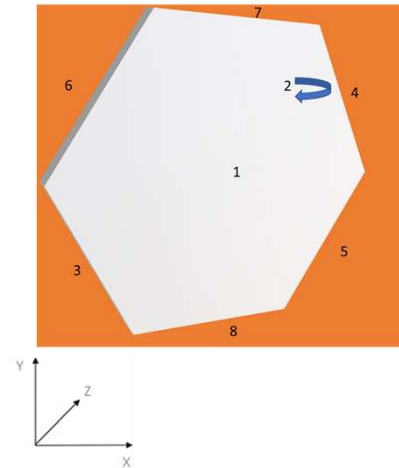
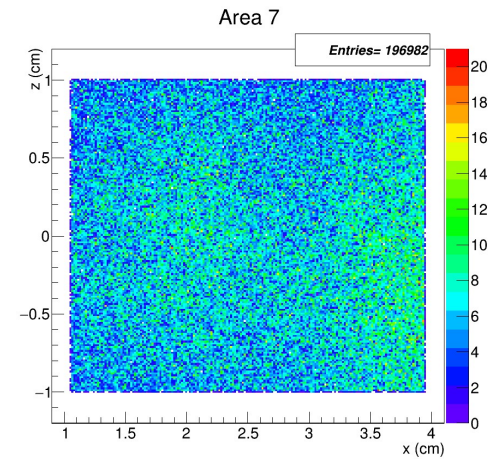
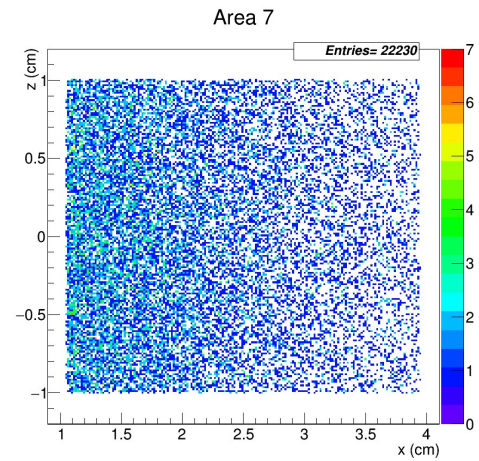
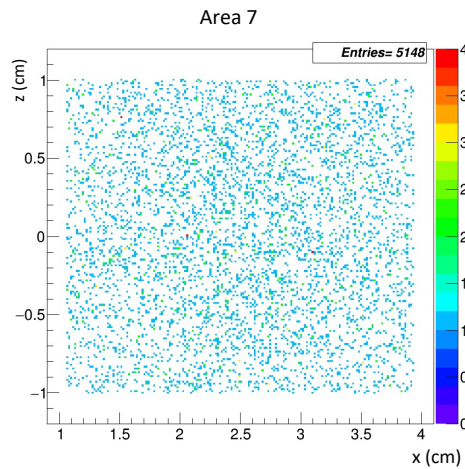
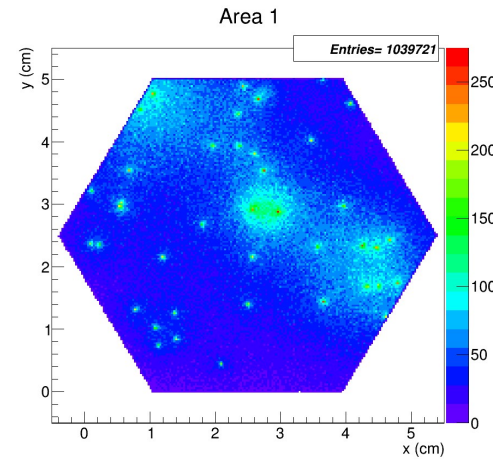
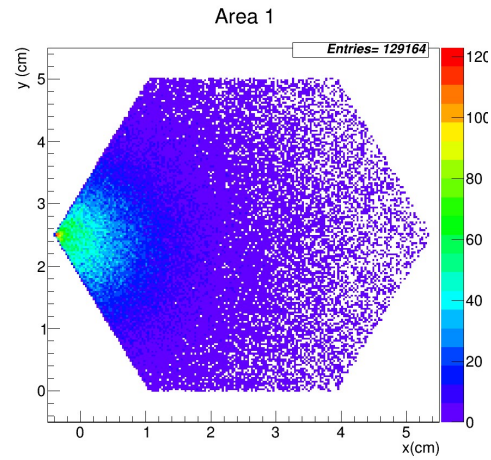
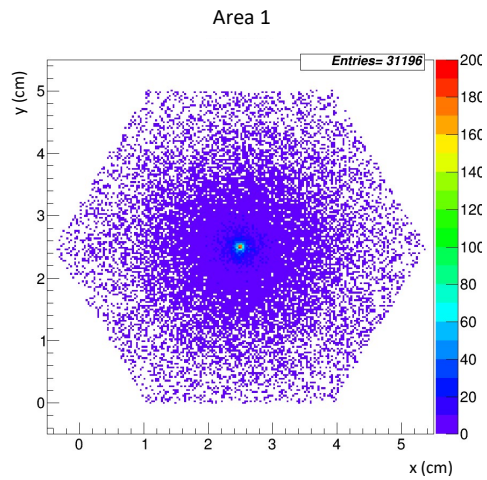


Energy Distribution for Be-Be¹

Simulation



Results



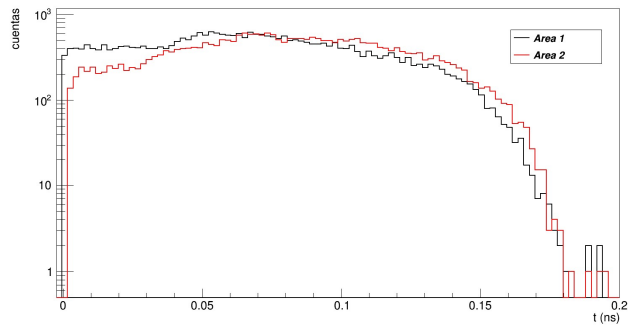
Center beam simulations (protons)

Corner beam simulations (protons)

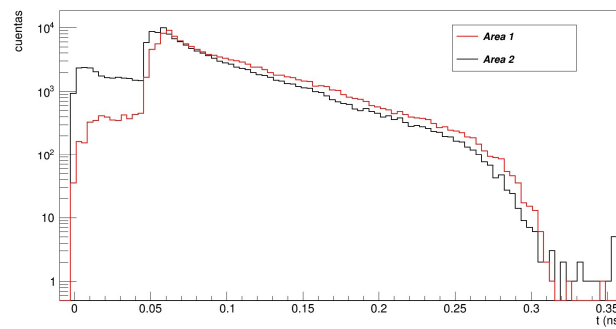
Random simulations (protons)

Results (arrival time of photons)

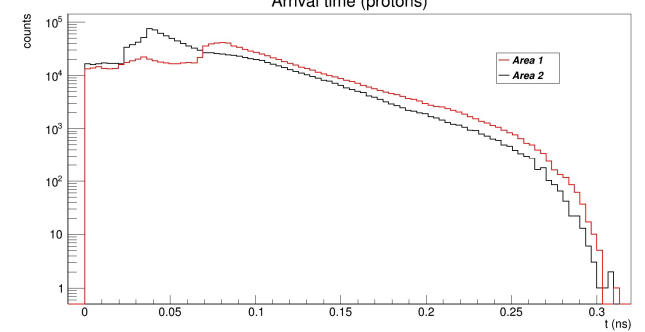
Arrival time (protons)



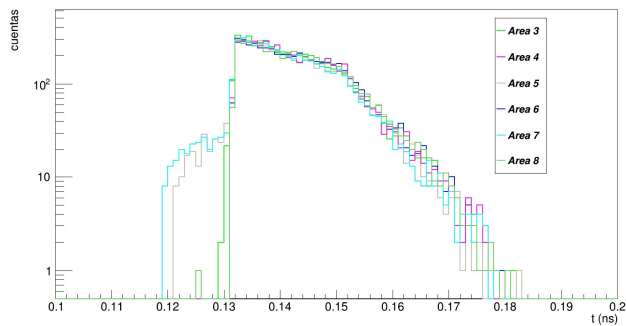
Arrival time (protons)



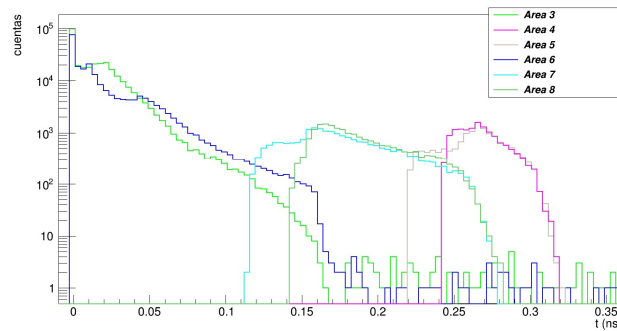
Arrival time (protons)



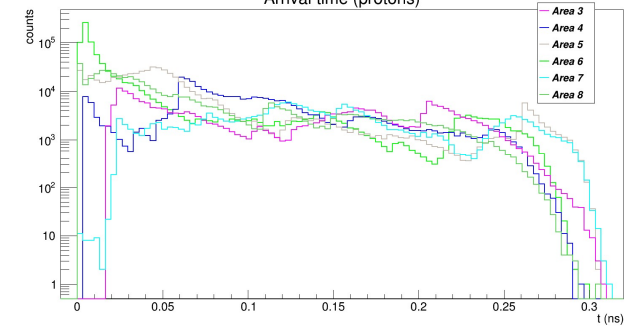
Arrival time (protons)



Arrival time (protons)



Arrival time (protons)



Center beam simulations (protons)

Corner beam simulations (protons)

Random simulations (protons)

Conclusions

- We can place the pmt or sipm in any of the areas of the perimeter of the hexagon.

Thank for your attention!!!