

- Estimate the absolute TOF (target to hodoscope) using Geant4
- Geant4 is not necessary to calculate the TOF at first order. Knowing the distance and the momentum is enough. But:
 - Good exercise to debug geometry, and the primary generator
 - Good exercise to produce analysis scripts

Formula used:

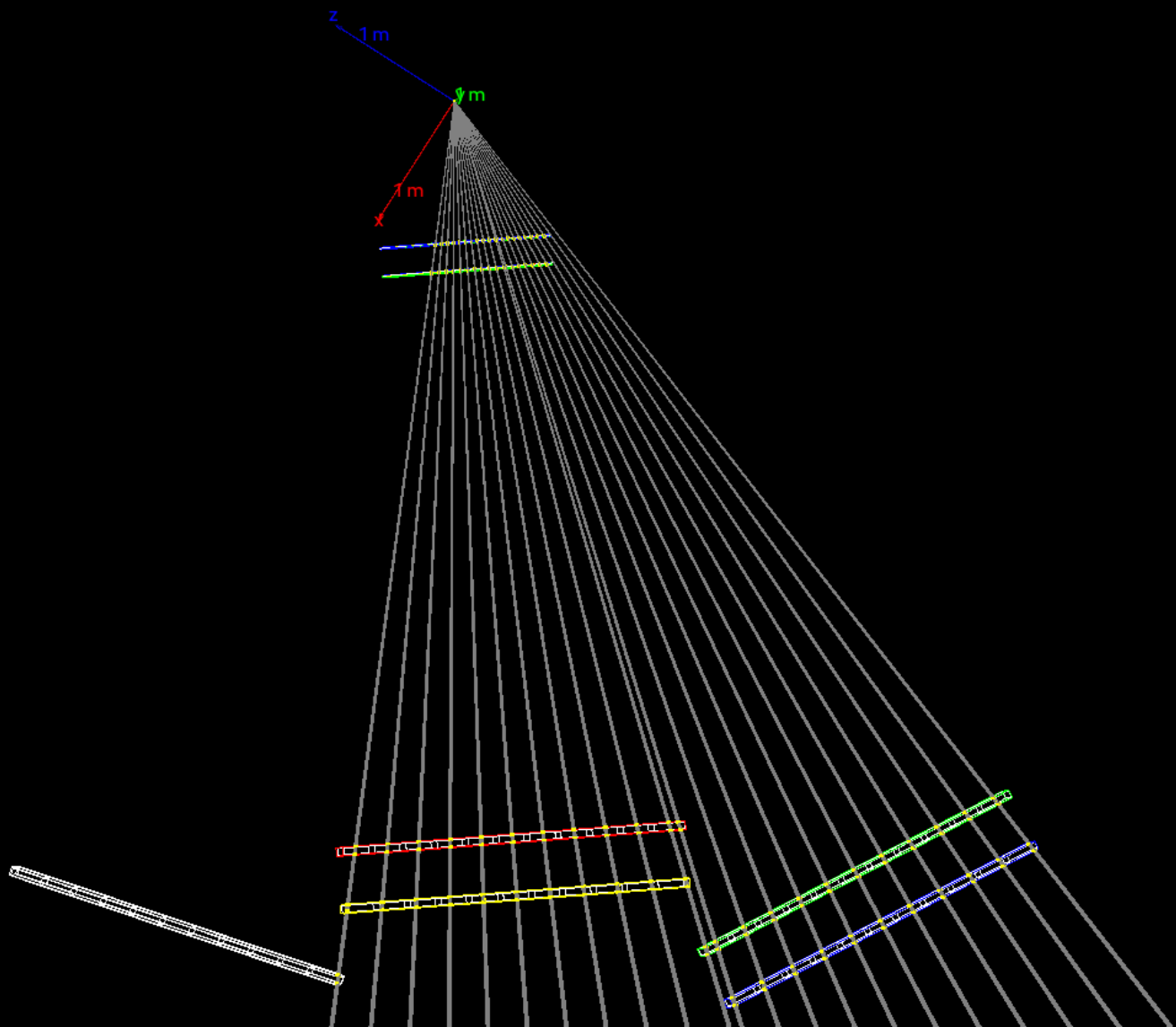
$$TOF = \frac{L}{cp} \sqrt{m_p^2 + p^2}$$

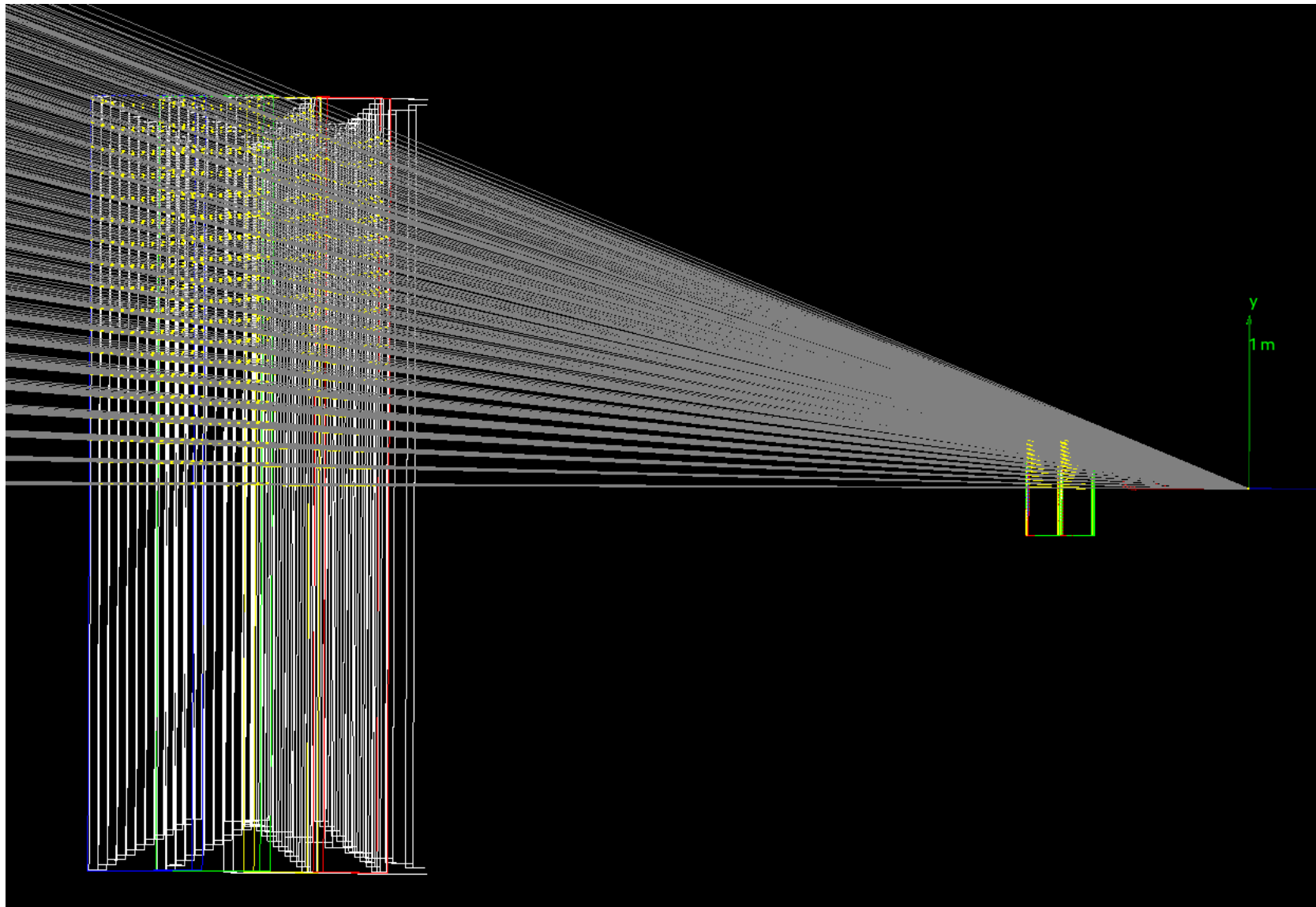
L: distance target-front face of the paddle (m)

c: speed of light (m/s)

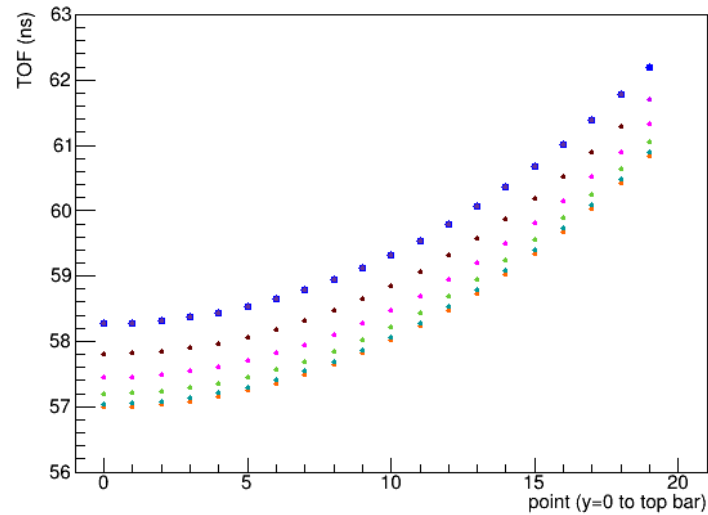
m_p : proton mass (MeV)

p: proton momentum (MeV)

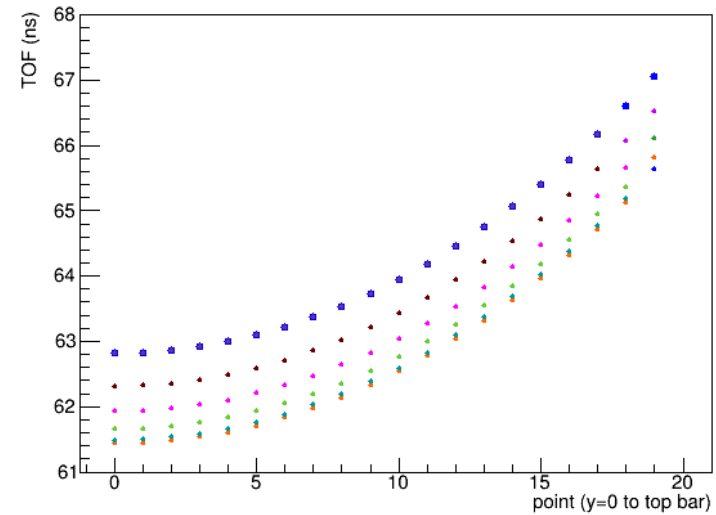




Wall 1, Layer 0 (central front)

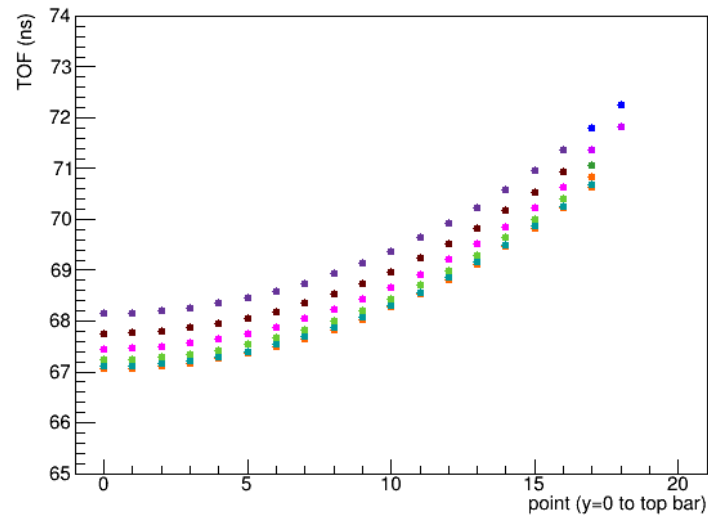


Wall 1, Layer 1 (central back)

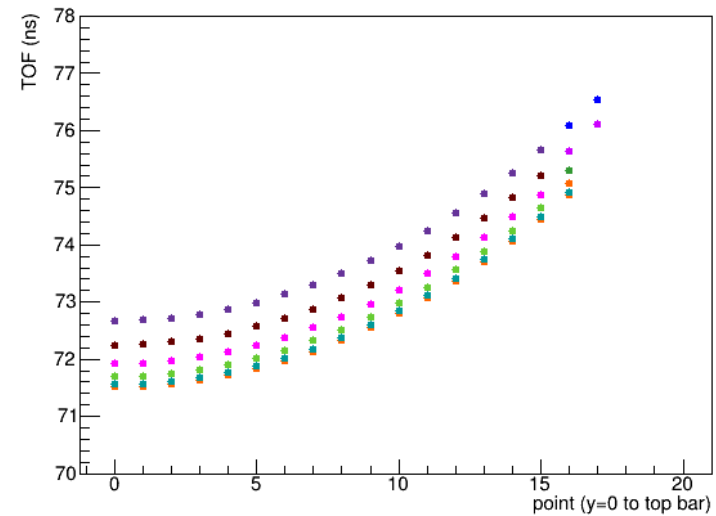


300 MeV protons

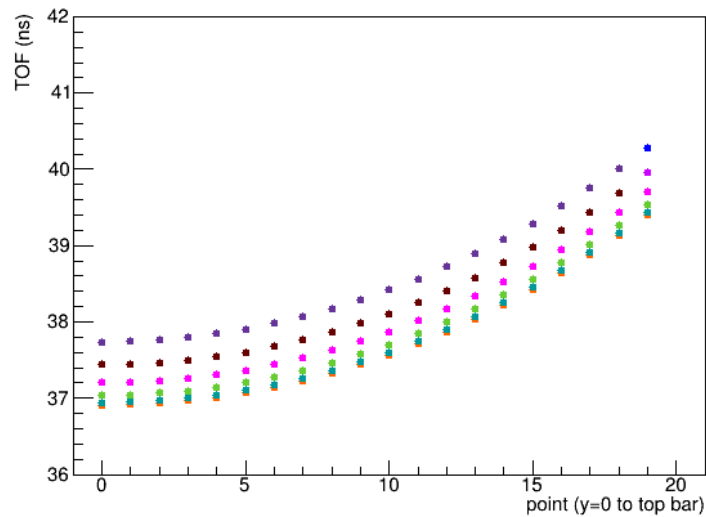
Wall 0, Layer 0 (right front)



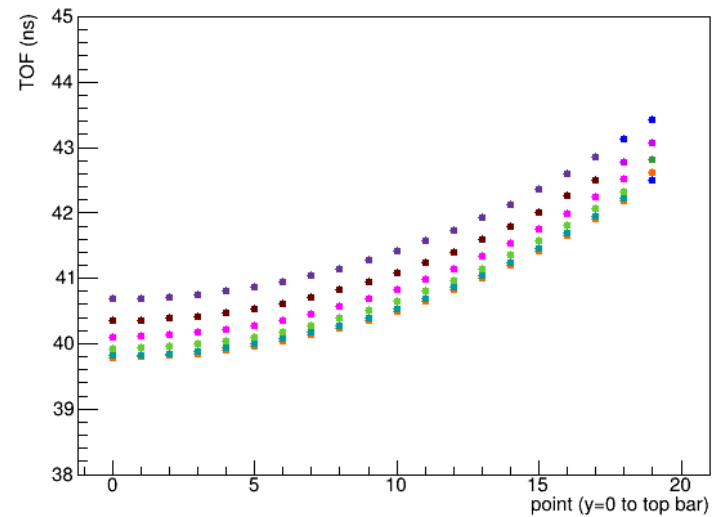
Wall 0, Layer 1 (right back)



Wall 1, Layer 0 (central front)

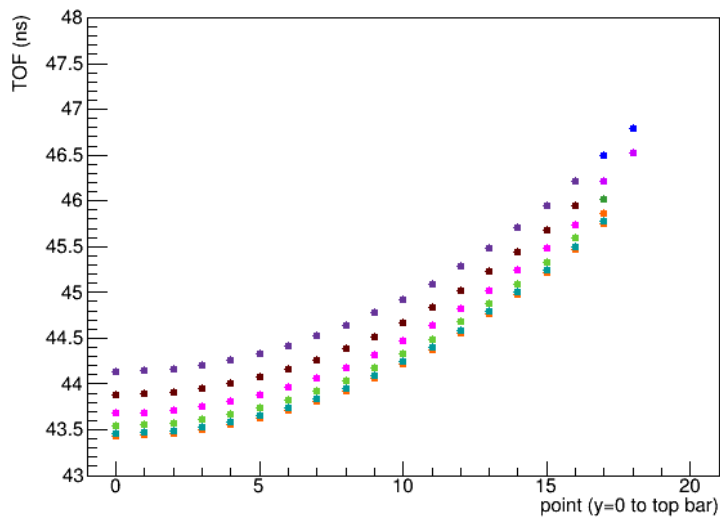


Wall 1, Layer 1 (central back)



600 MeV protons

Wall 0, Layer 0 (right front)



Wall 0, Layer 1 (right back)

