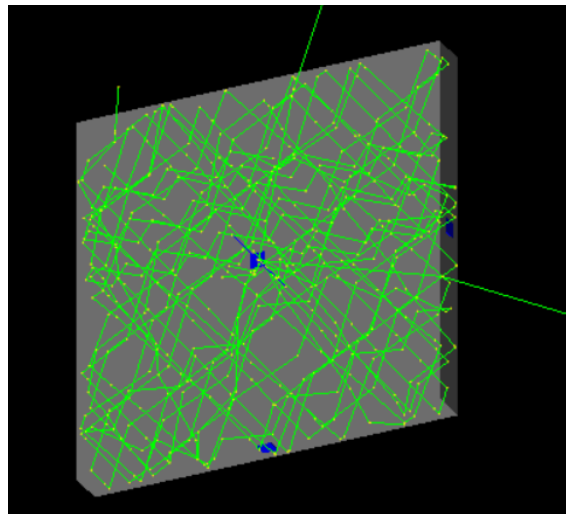


CNAO Ions Simulation

Bari, 29/1/2020

Corrado Altomare, Davide Serini, Fabio Gargano, Leonardo Di Venere

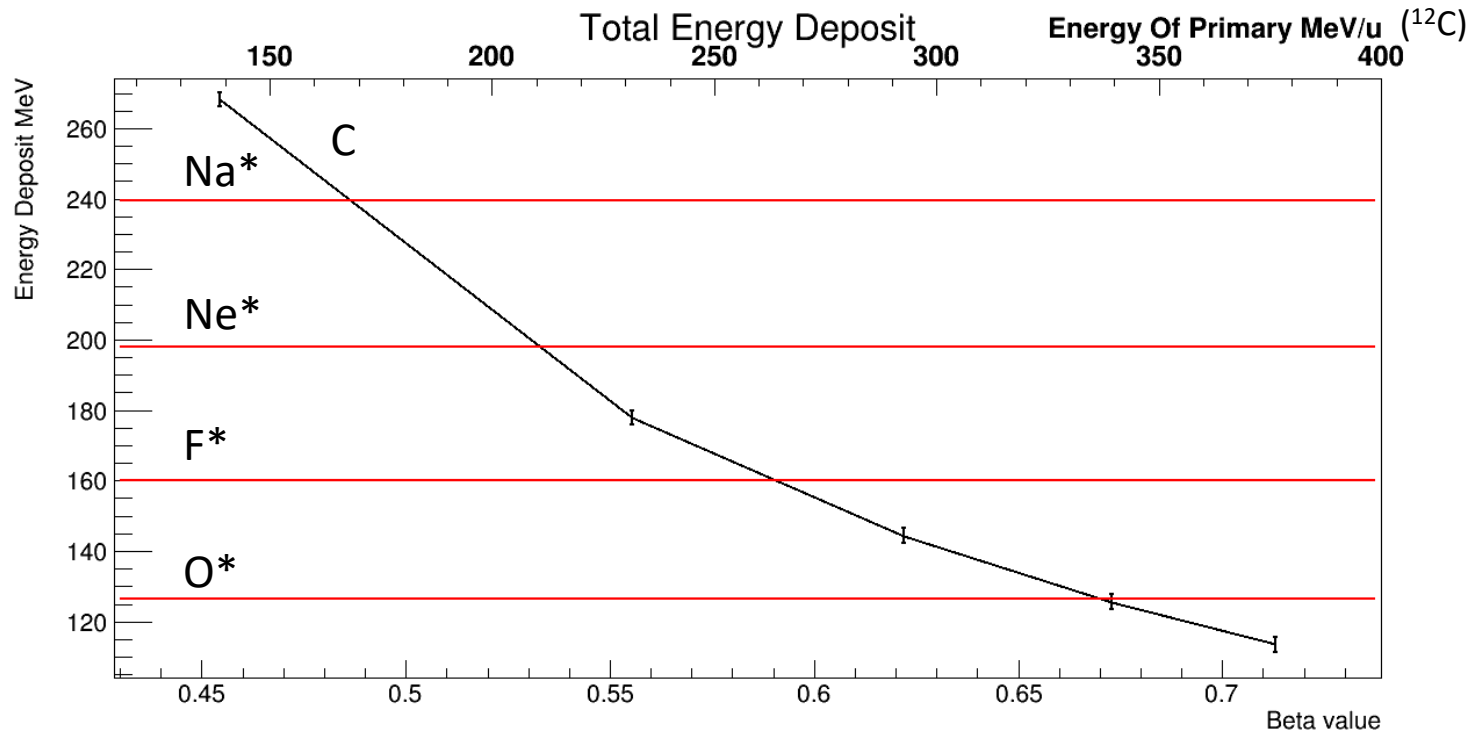


- **Physics**
 - **Physics List for Geant4 FTFP_BERT***
- **Source**
 - **Test1: ^{12}C Ion @ (115,190,260,330,400)MeV/u**
 - **Test2: ^1H Ion @ (70,120,170,226)MeV/u**
 - **Test3: Ions with Z from 1 to 26, A/Z=2, @150GeV/u**
- **Geometrical parameters**
 - **10x10x1 cm³ Tile**
 - **4x4x0.5 mm³ SiPM**
 - **400 μm TiO₂ Wrapping**

*http://geant4-userdoc.web.cern.ch/geant4-userdoc/UsersGuides/PhysicsListGuide/html/reference_PL/FTFP_BERT.html#ftfp-bert

CNAO Ions Simulation

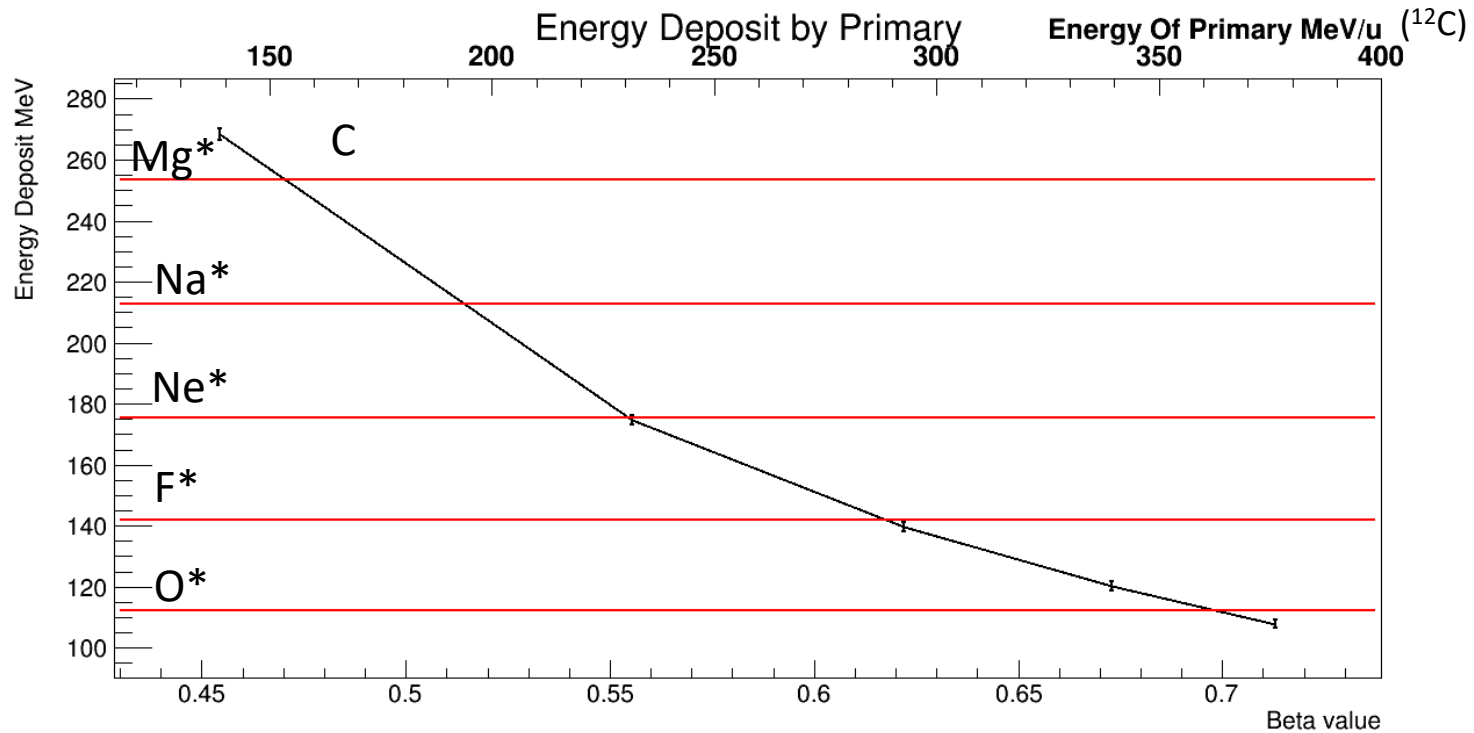
Total Energy Deposit: Ions + Delta



* Kinetic Energy 150GeV/u, $\beta \sim 1$

CNAO Ions Simulation

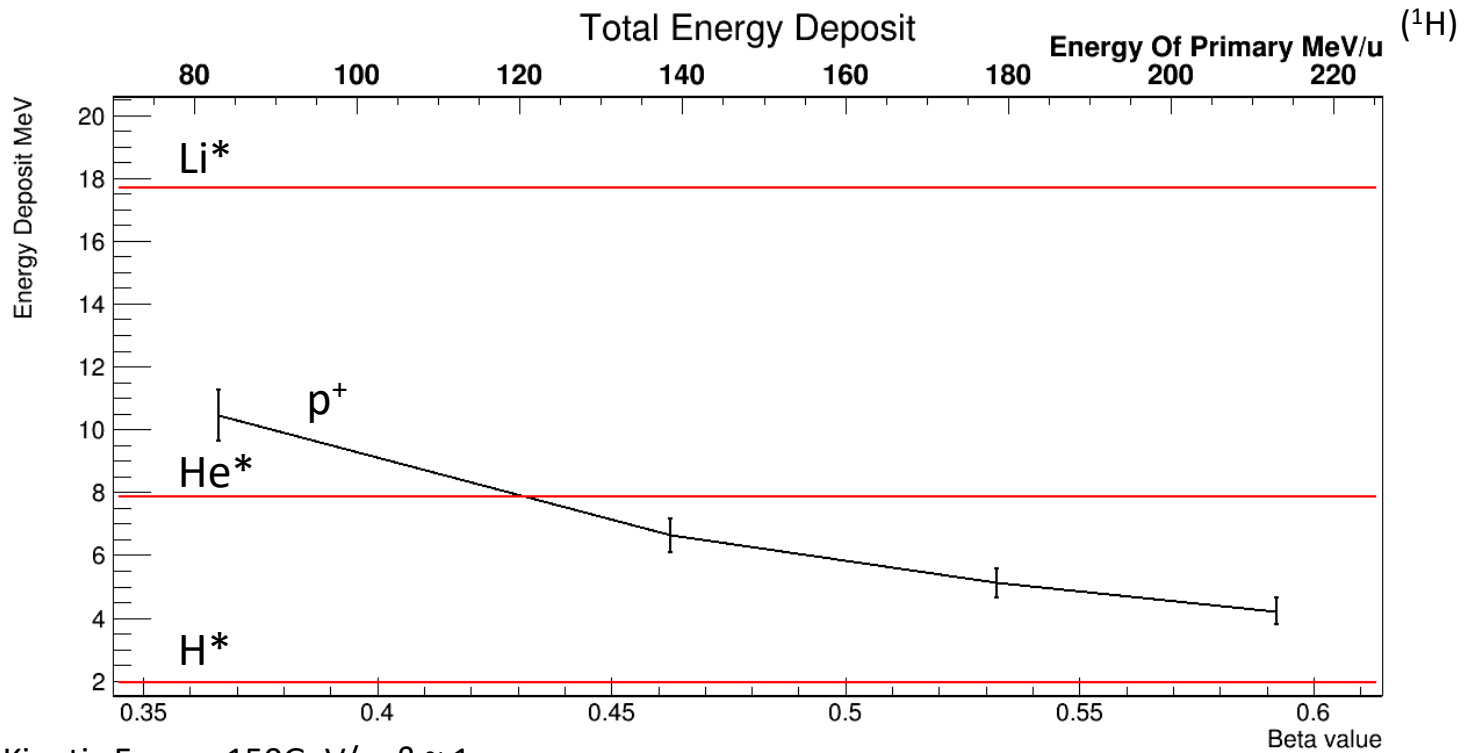
Energy Deposit by Primary: Only Ions



* Kinetic Energy 150GeV/u, $\beta \sim 1$

CNAO Ions Simulation

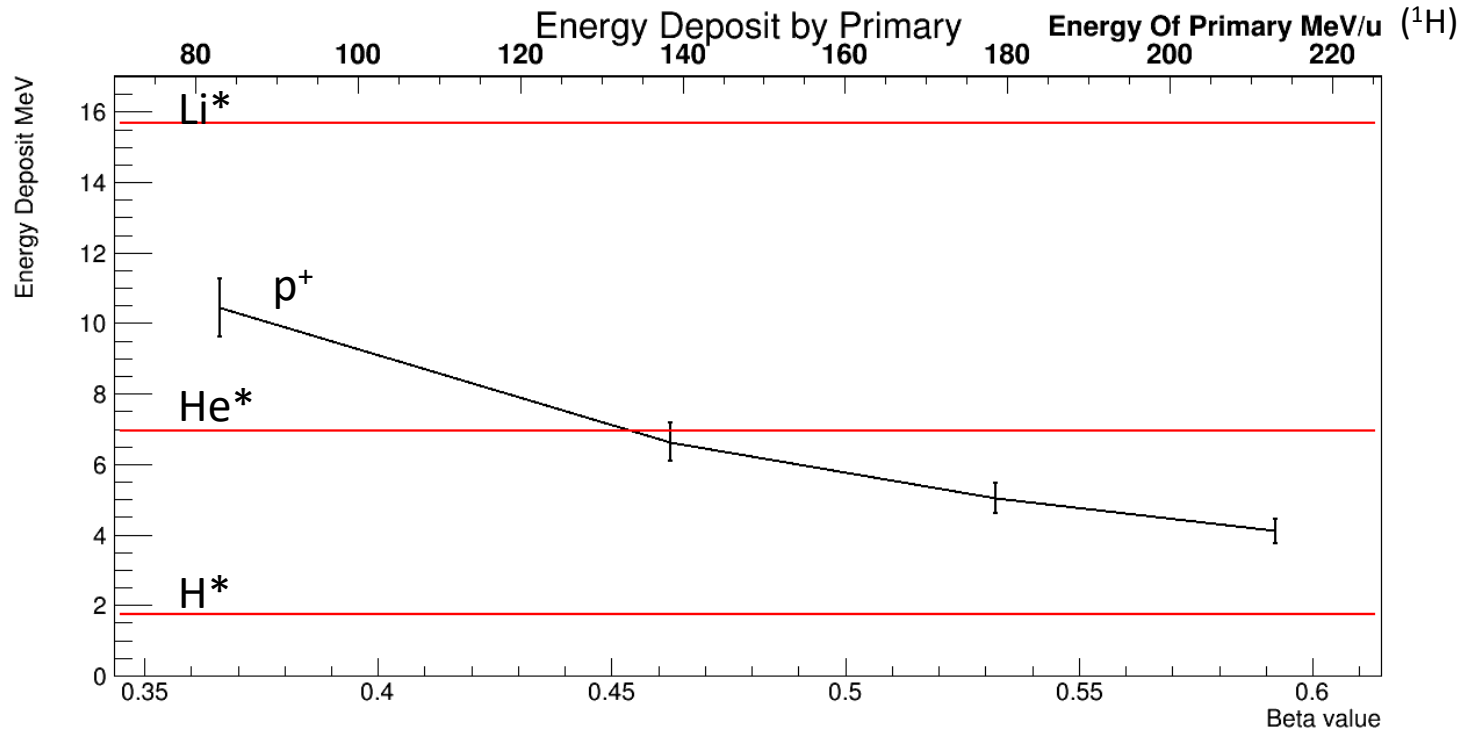
Total Energy Deposit: Ions + Delta



* Kinetic Energy 150GeV/u, $\beta \sim 1$

CNAO Ions Simulation

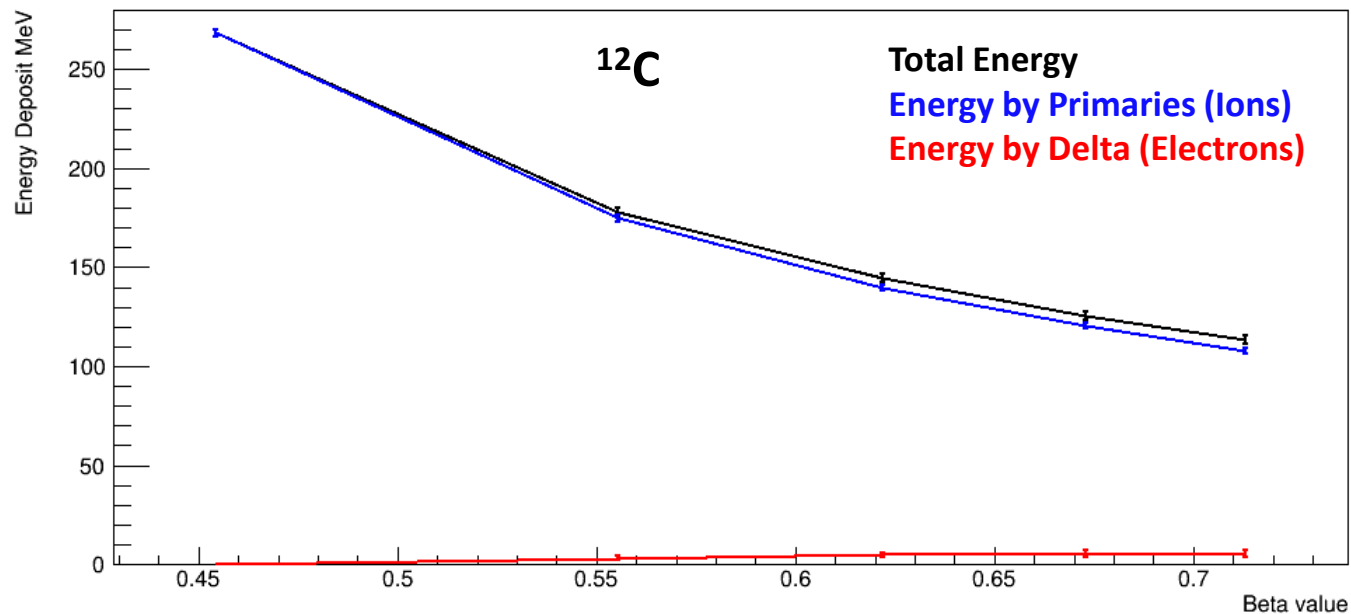
Energy Deposit by Primary: Only Ions



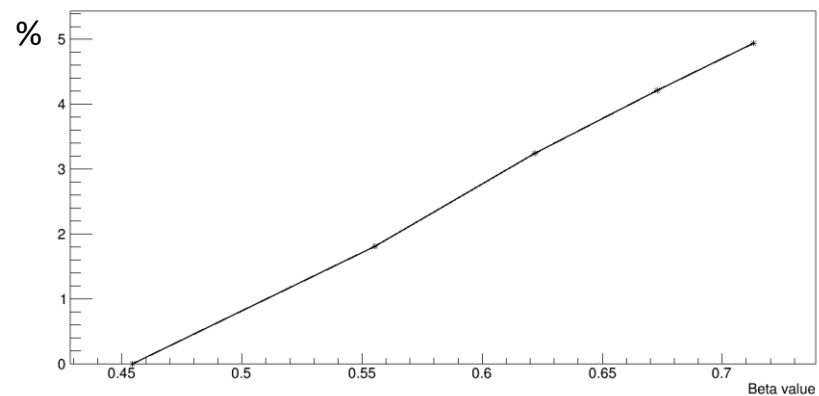
* Kinetic Energy 150GeV/u, $\beta \sim 1$

CNAO Ions Simulation

Total Energy Deposit

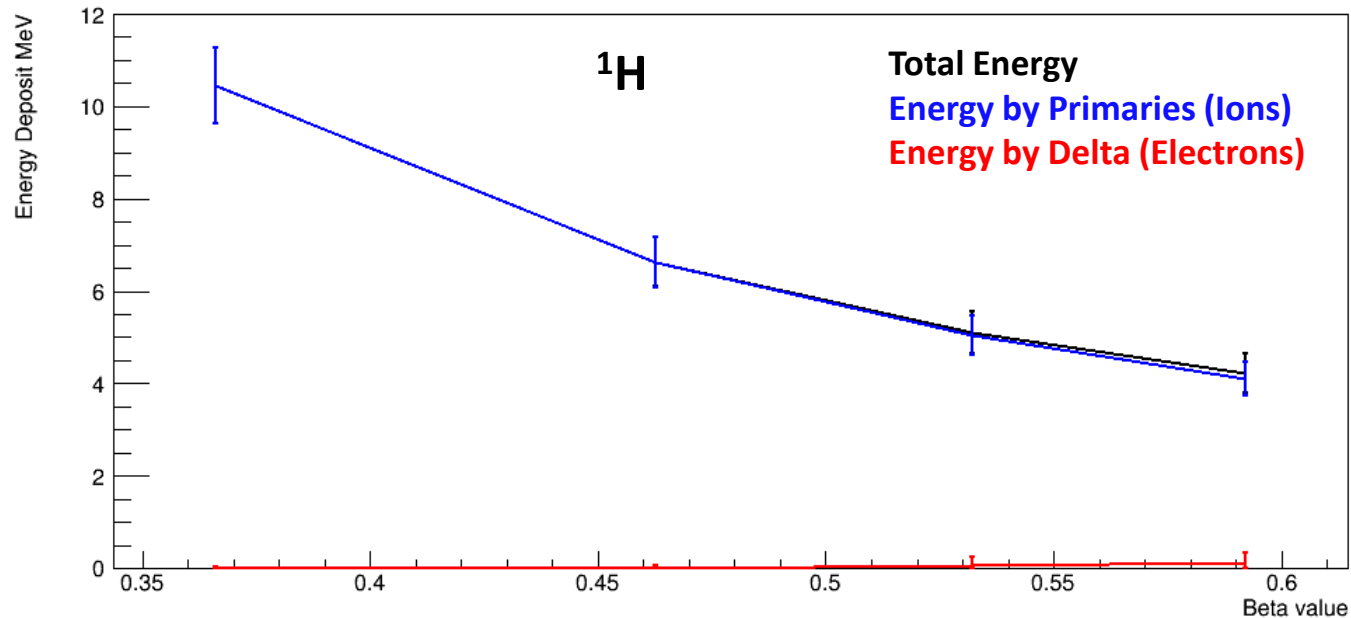


Energy Deposited By Electrons

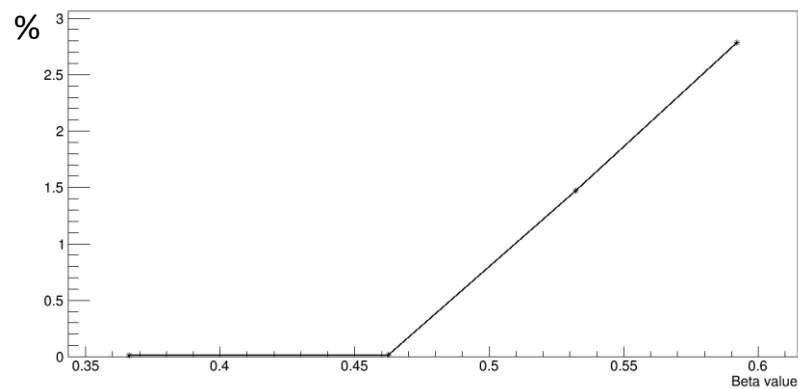


CNAO Ions Simulation

Total Energy Deposit

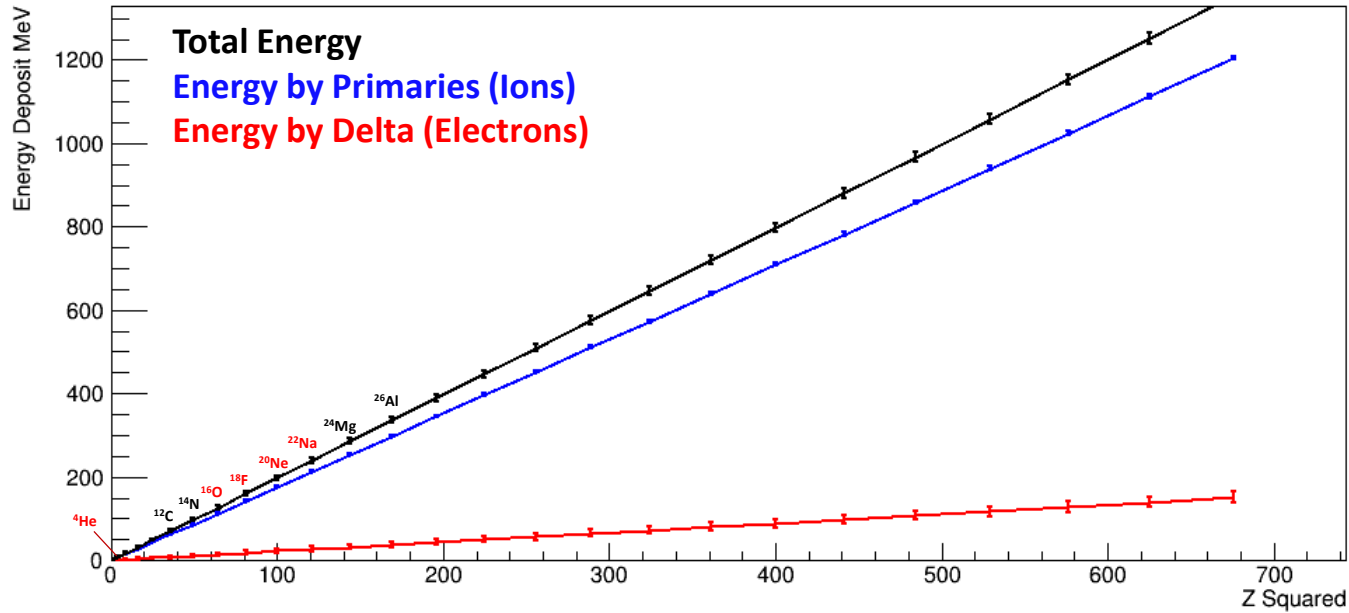


Energy Deposited By Electrons

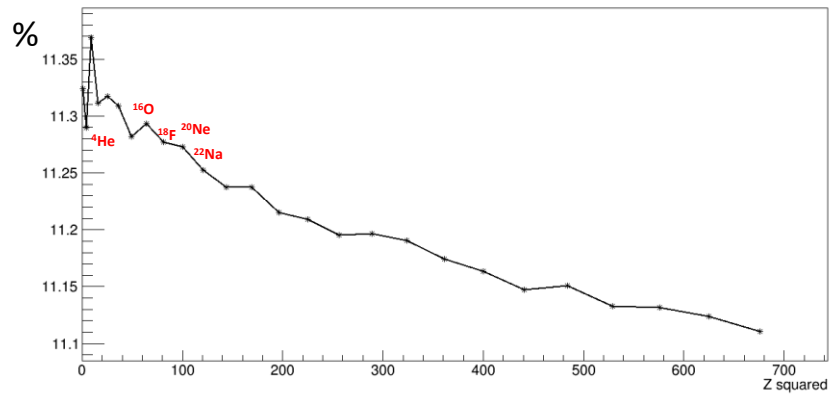


CNAO Ions Simulation

Energy Deposit by Primary

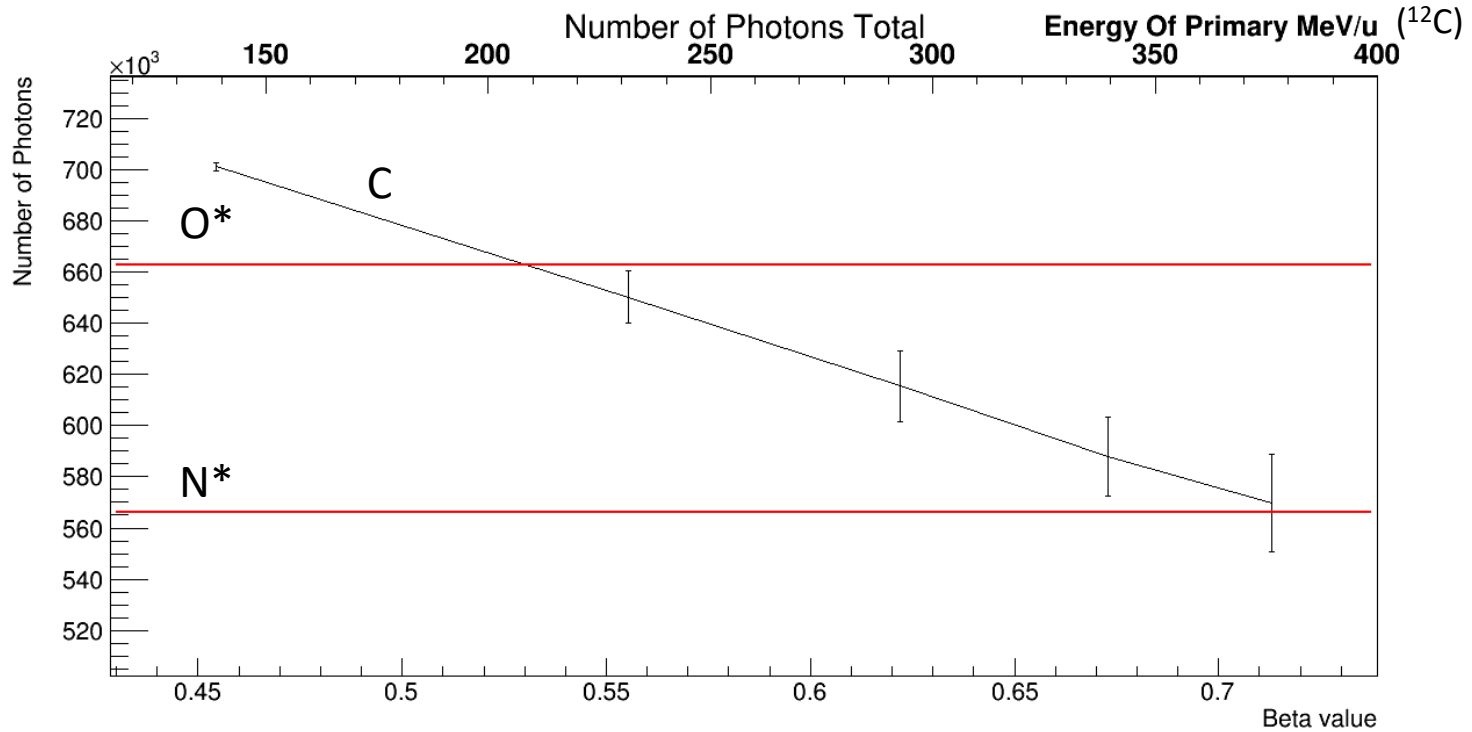


Energy Deposited By Electrons



CNAO Ions Simulation

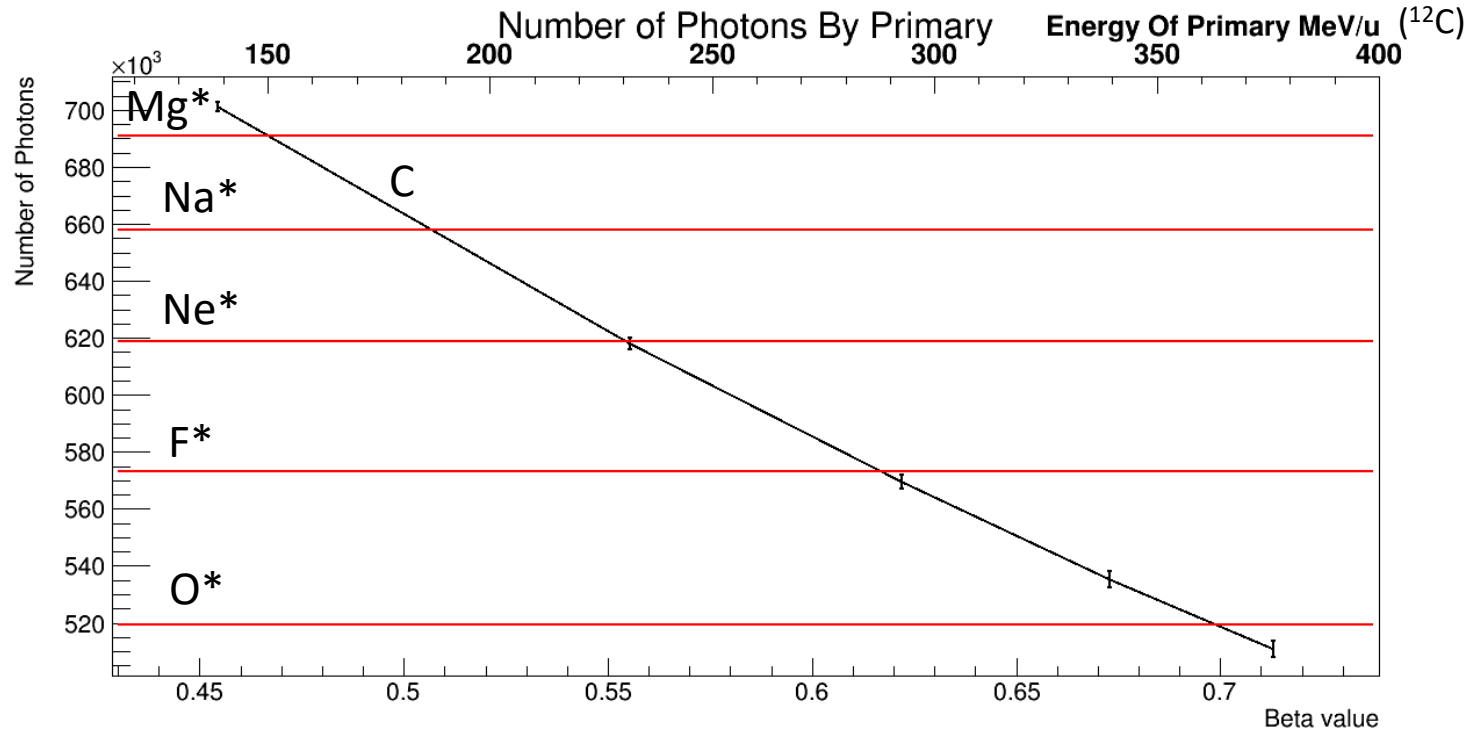
Number of Photons: Ions + Delta



* Kinetic Energy 150GeV/u, $\beta \sim 1$

CNAO Ions Simulation

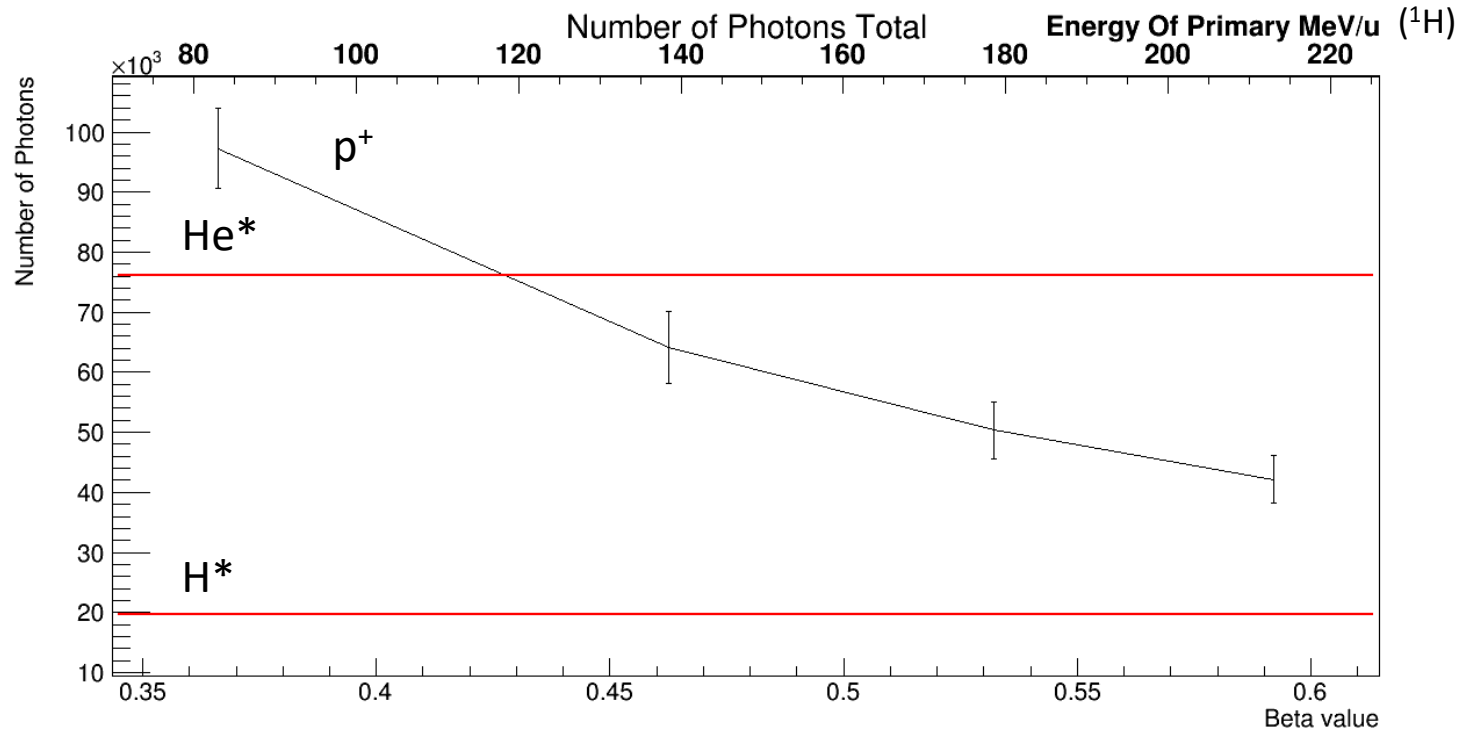
Number of Photons: Only Ions



* Kinetic Energy 150GeV/u, $\beta \sim 1$

CNAO Ions Simulation

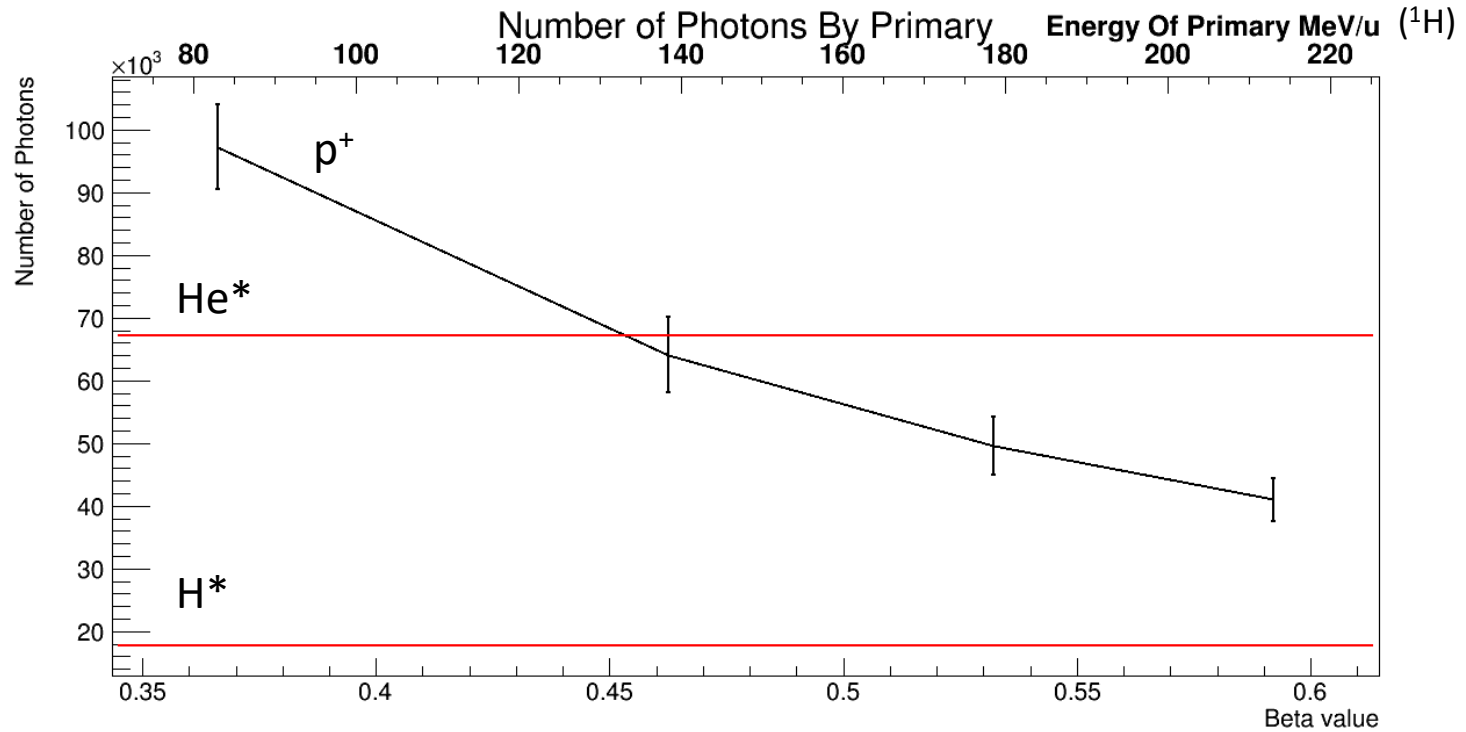
Number of Photons: Ions + Delta



* Kinetic Energy 150GeV/u, $\beta \sim 1$

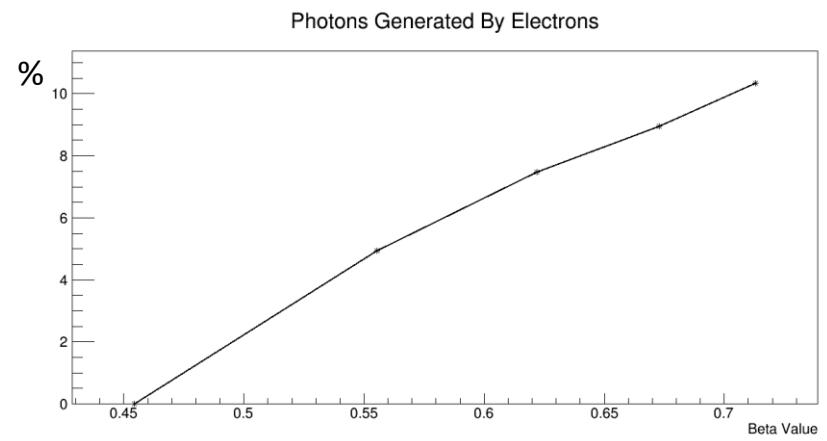
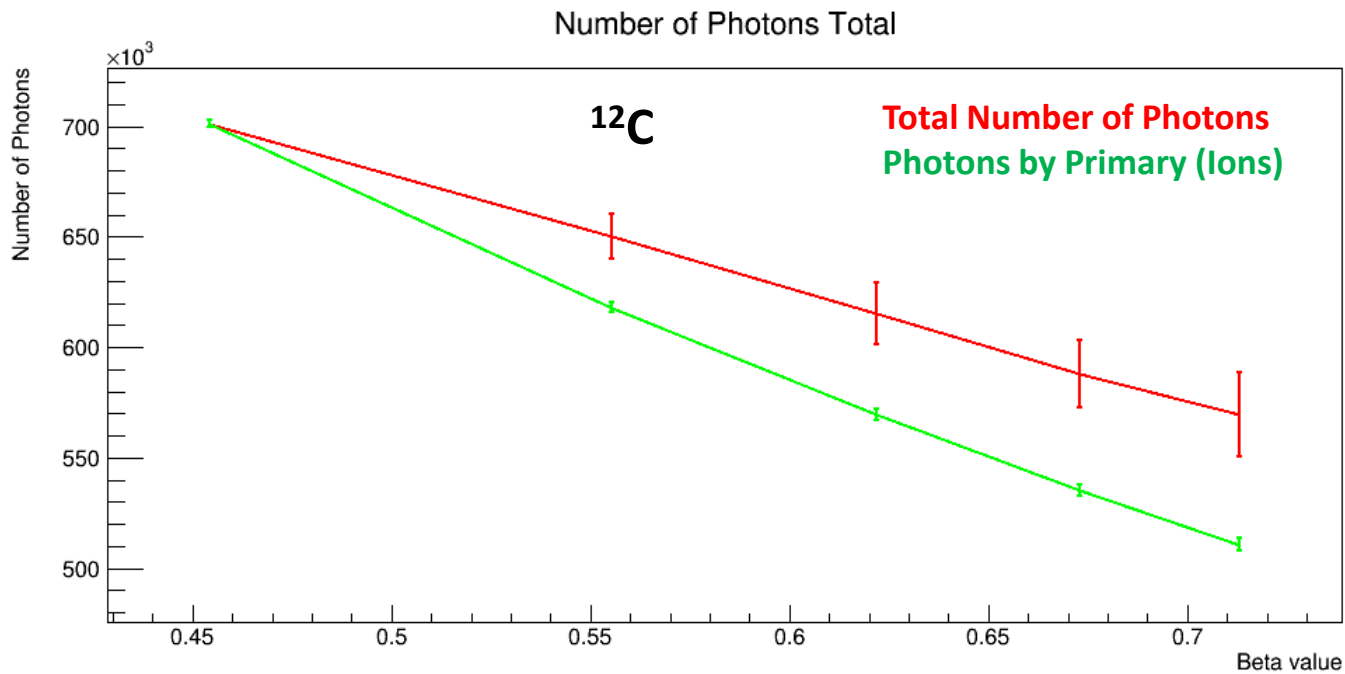
CNAO Ions Simulation

Number of Photons: Only Ions



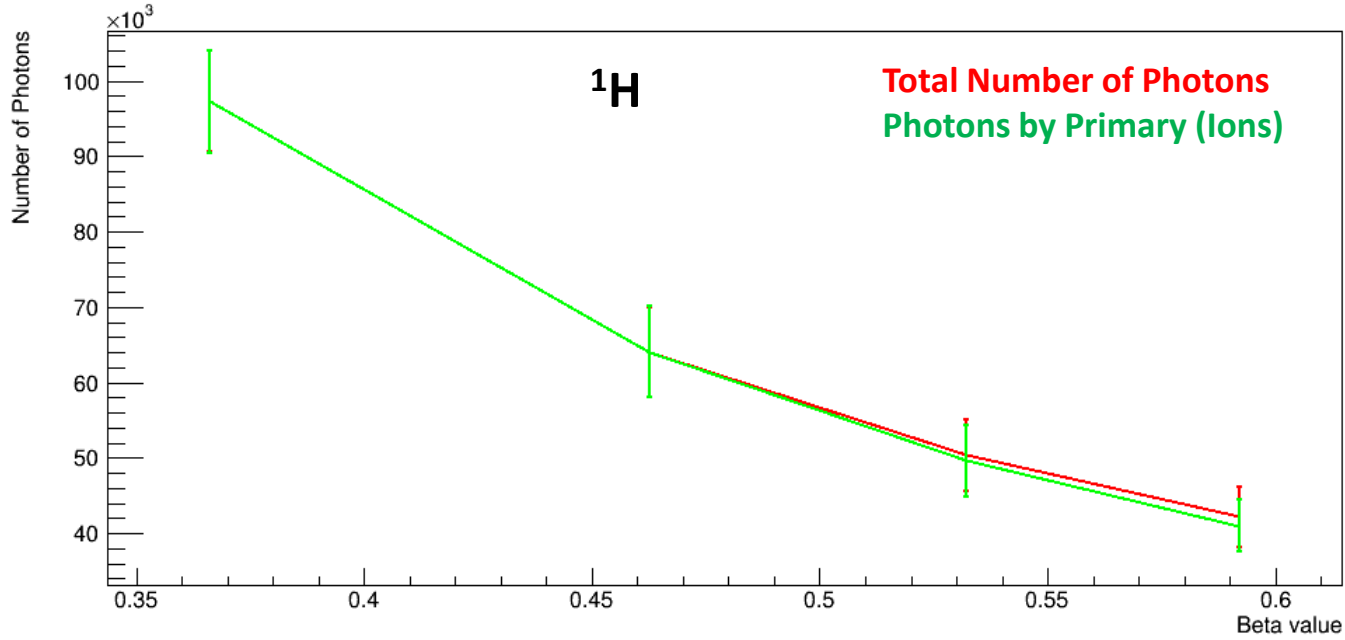
* Kinetic Energy 150GeV/u, $\beta \sim 1$

CNAO Ions Simulation

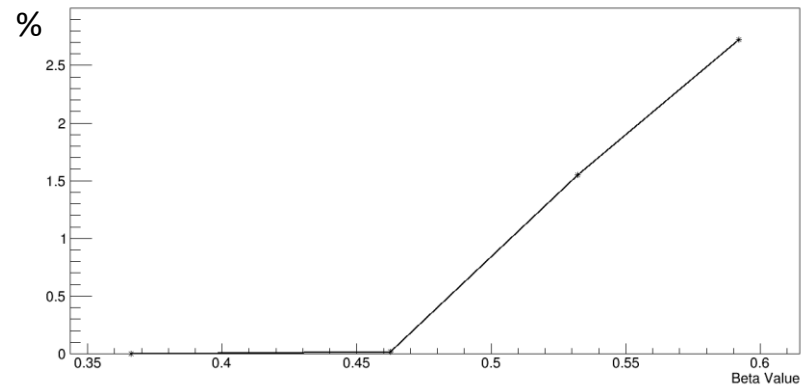


CNAO Ions Simulation

Number of Photons Total

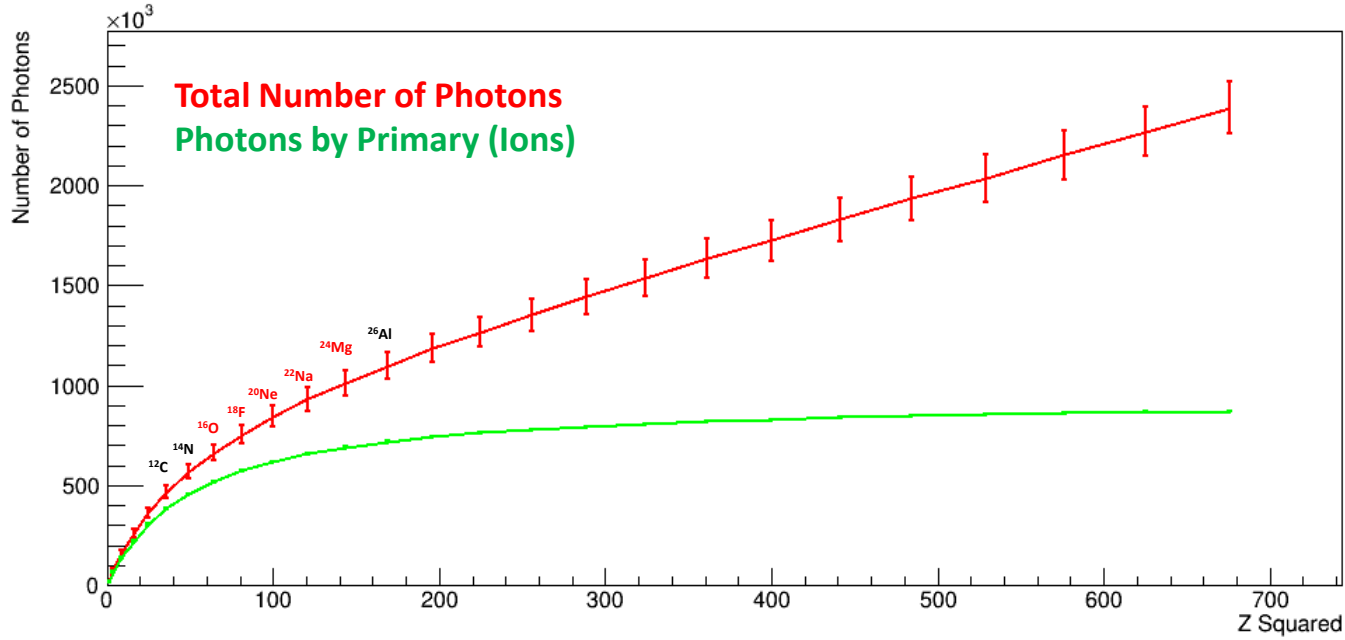


Photons Generated By Electrons



CNAO Ions Simulation

Number of Photons Total



Photons Generated By Electrons

