

# Comparison of Power Depositions

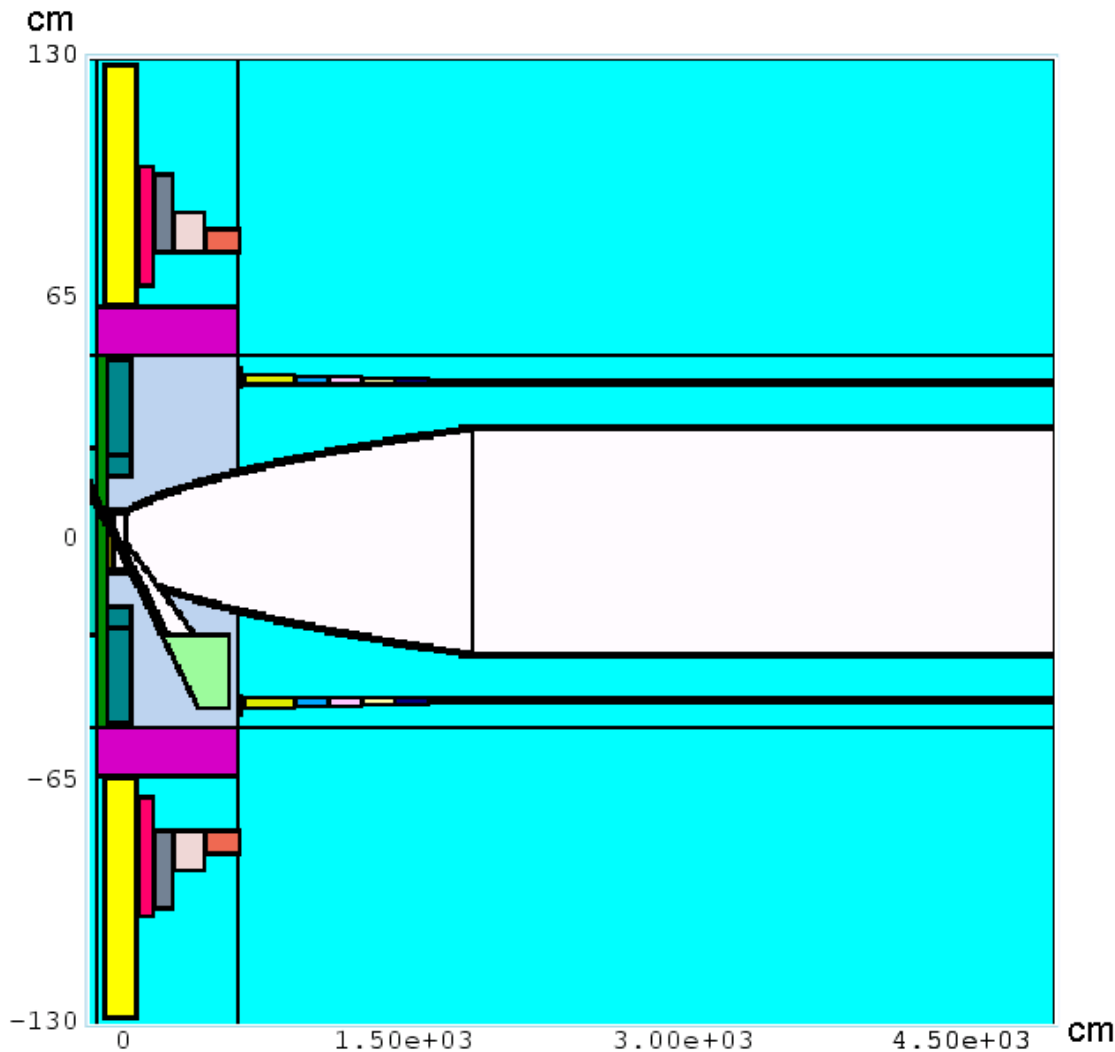
Xiaoping Ding

UCLA

Target Studies Aug. 10, 2010

# Geometry

Standard Shielding: Gray; Enhanced Shielding: Gray+Pink



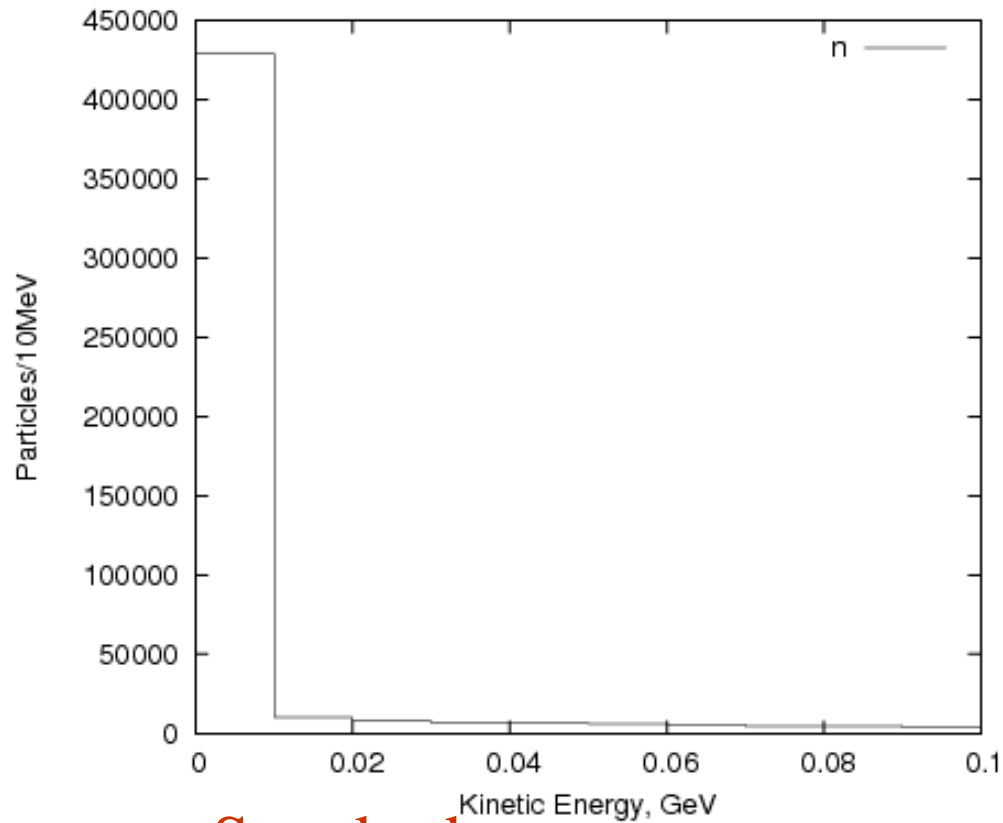
Pure W for shielding

8GeV & 4MW  
Proton beam,  $10^5$   
events

A surface is located  
at the inner radius of  
SC1(r:63.6cm, z: -  
120.3 to 57.8cm).  
All particles  
crossing this surface  
are recorded.

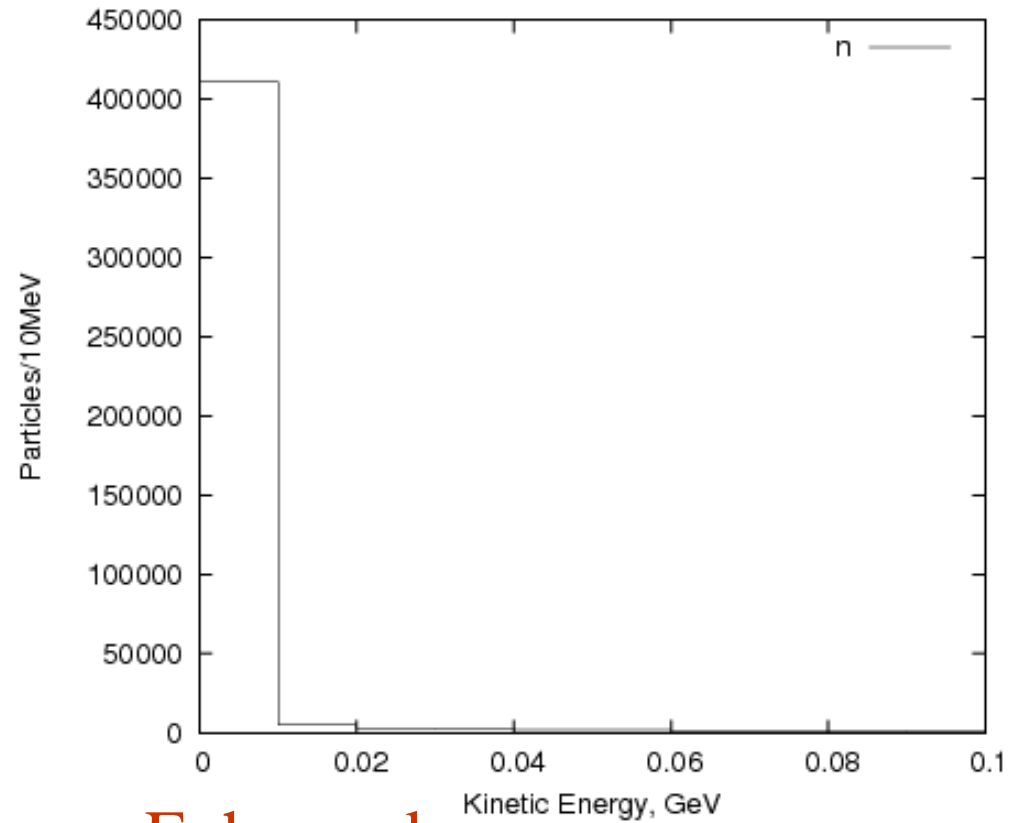
# Neutron

Binned plot of neutrons at R=63.6cm



Standard

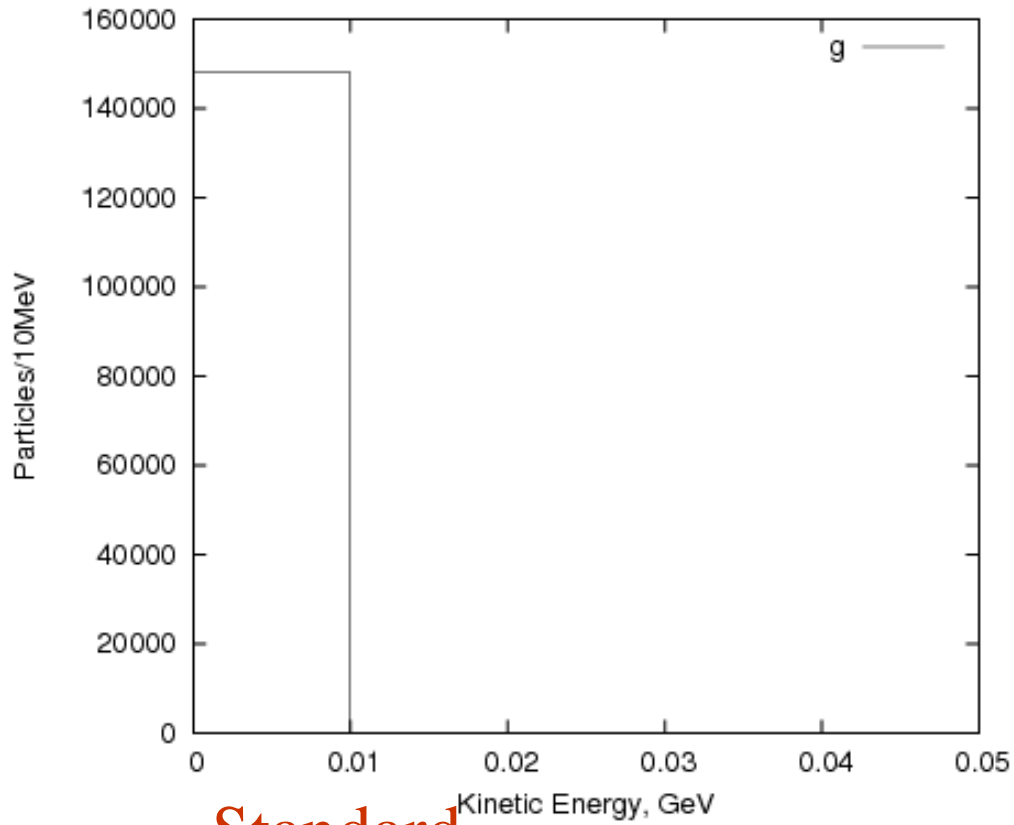
Binned plot of neutrons at R=63.6cm



Enhanced

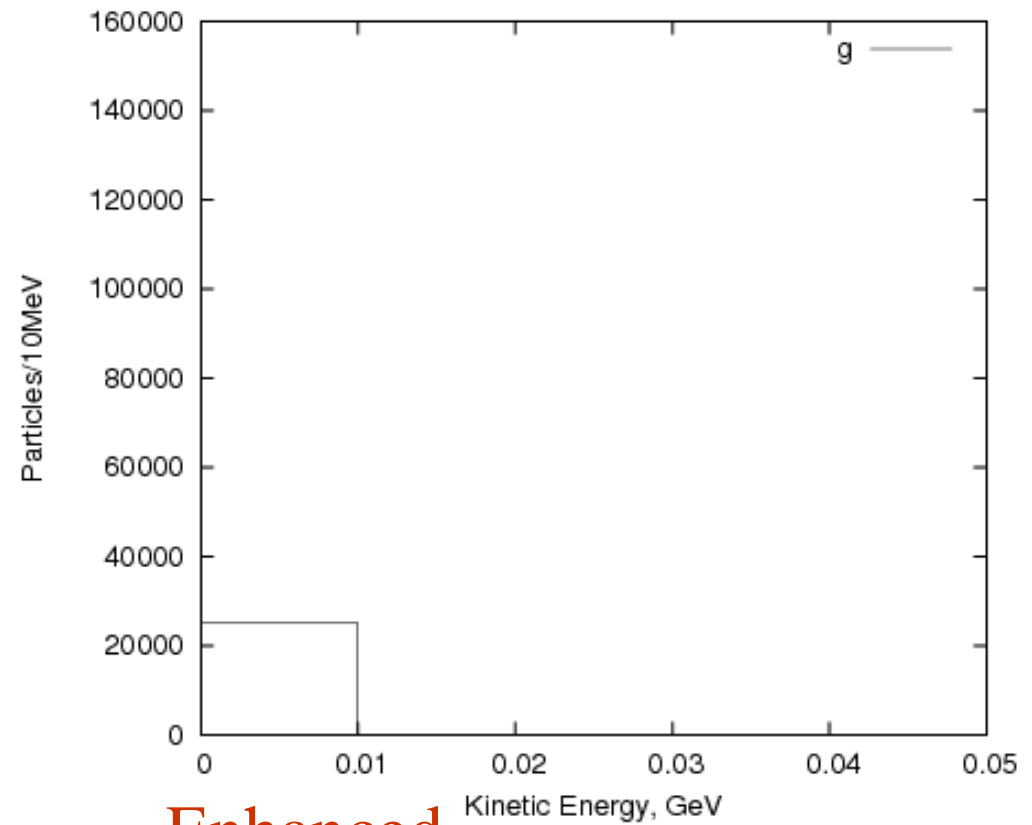
# Gamma

Binned plot of gammas at R=63.6cm



Standard

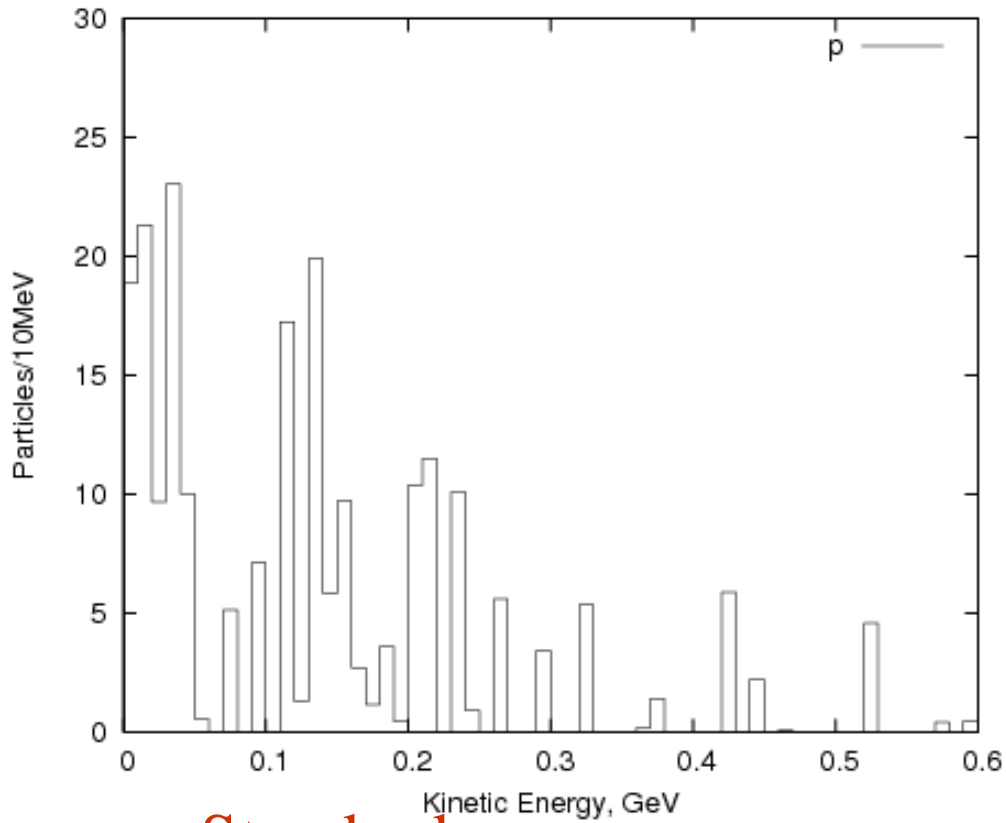
Binned plot of gammas at R=63.6cm



Enhanced

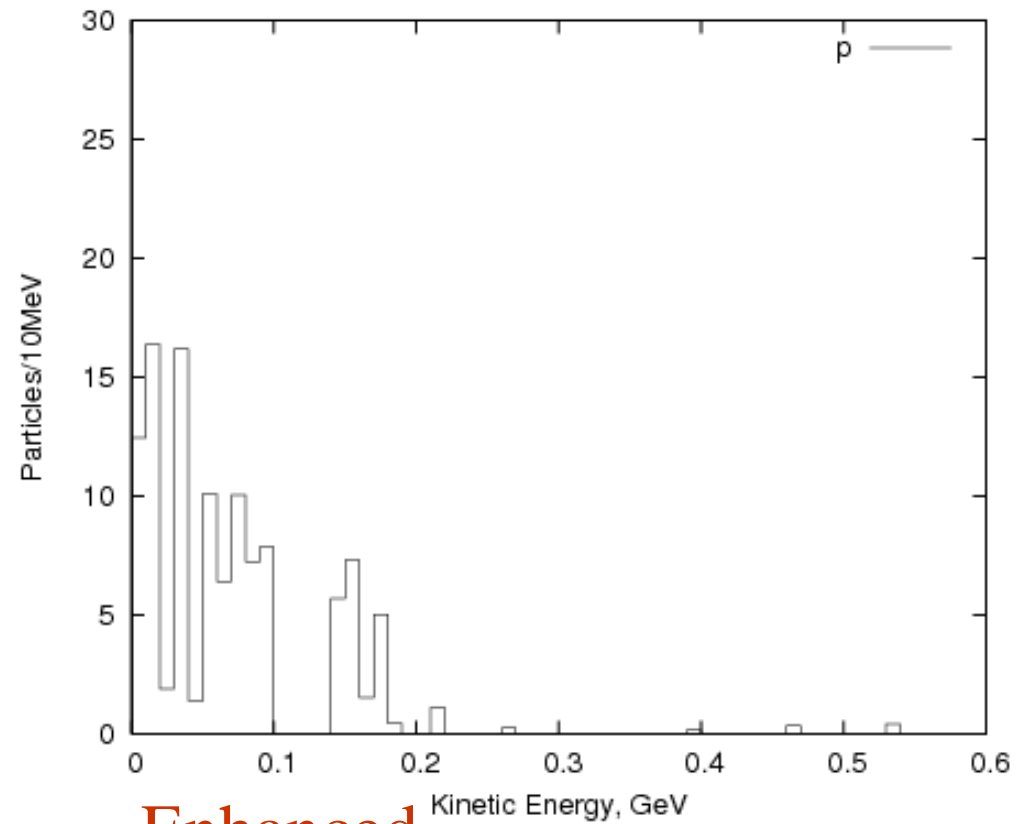
# Proton

Binned plot of protons at R=63.6cm



Standard

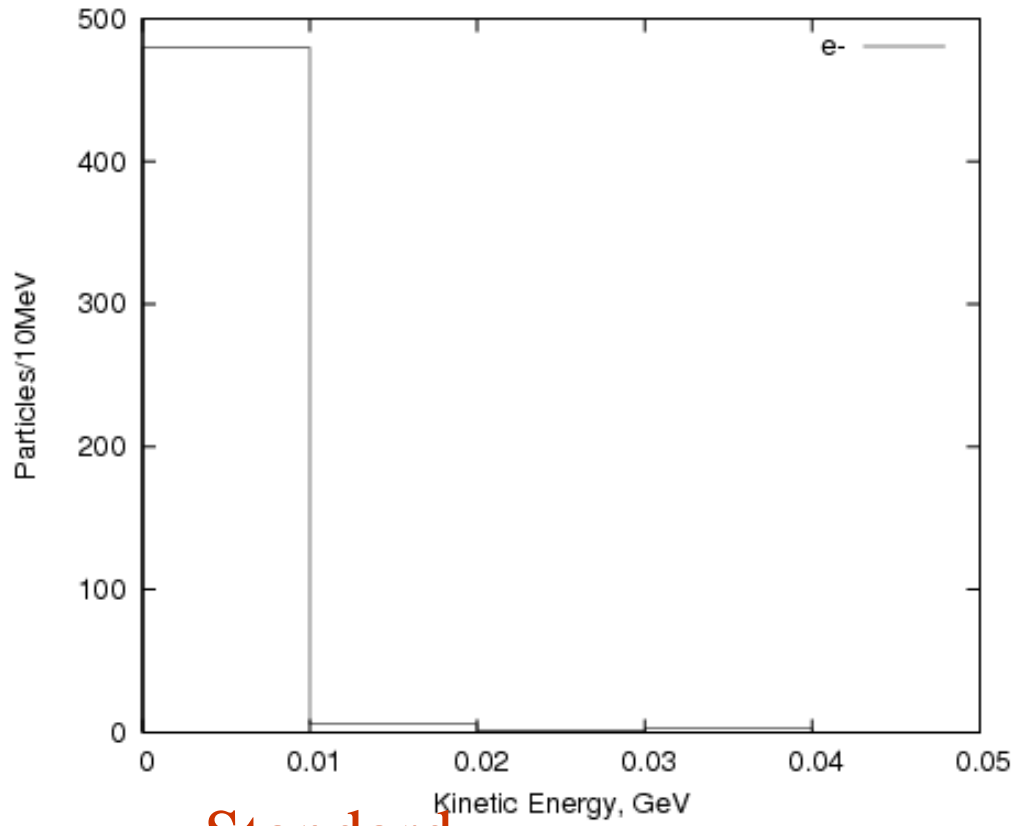
Binned plot of protons at R=63.6cm



Enhanced

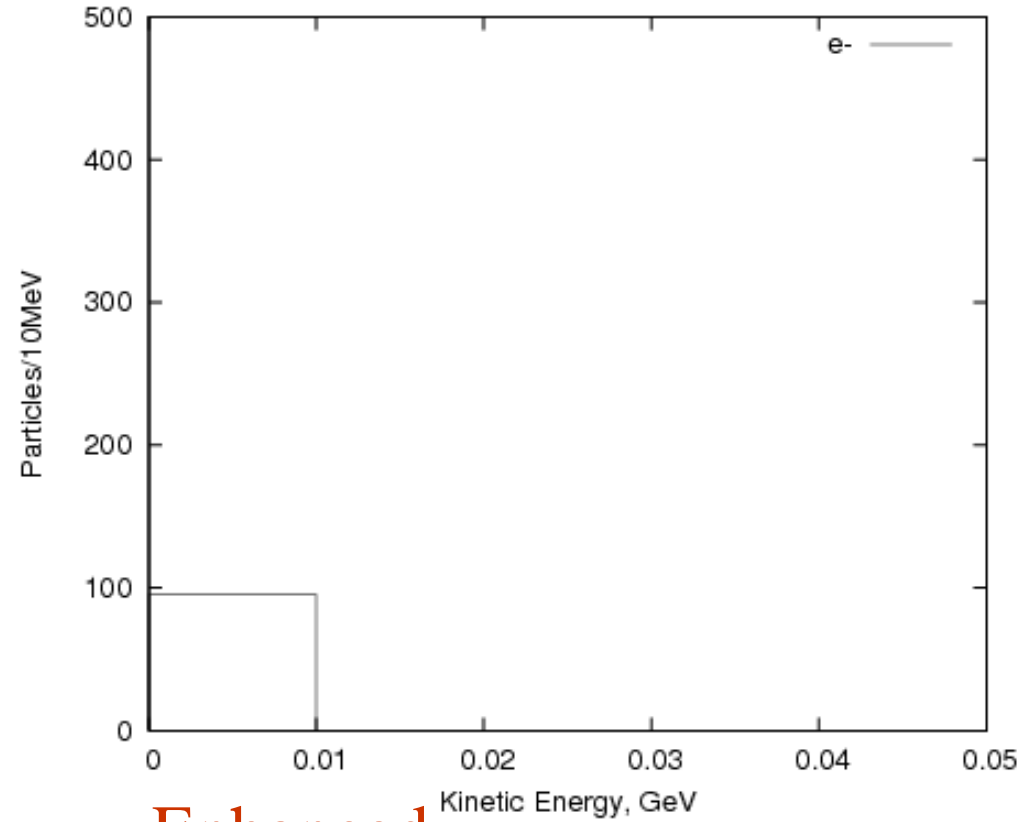
# Electron

Binned plot of electrons at R=63.6cm



Standard

Binned plot of electrons at R=63.6cm



Enhanced

# Power Deposition in SC coils

	Standard			Enhanced		
	Total (kW)	Neutron (kW)	Muon (kW)	Total (kW)	Neutron (kW)	Muon (kW)
SC1	21.06	5.83	<0.001	6.63	2.34	<0.001
SC2- SC13	10.36	1.406	0.559	7.585	0.428	0.573