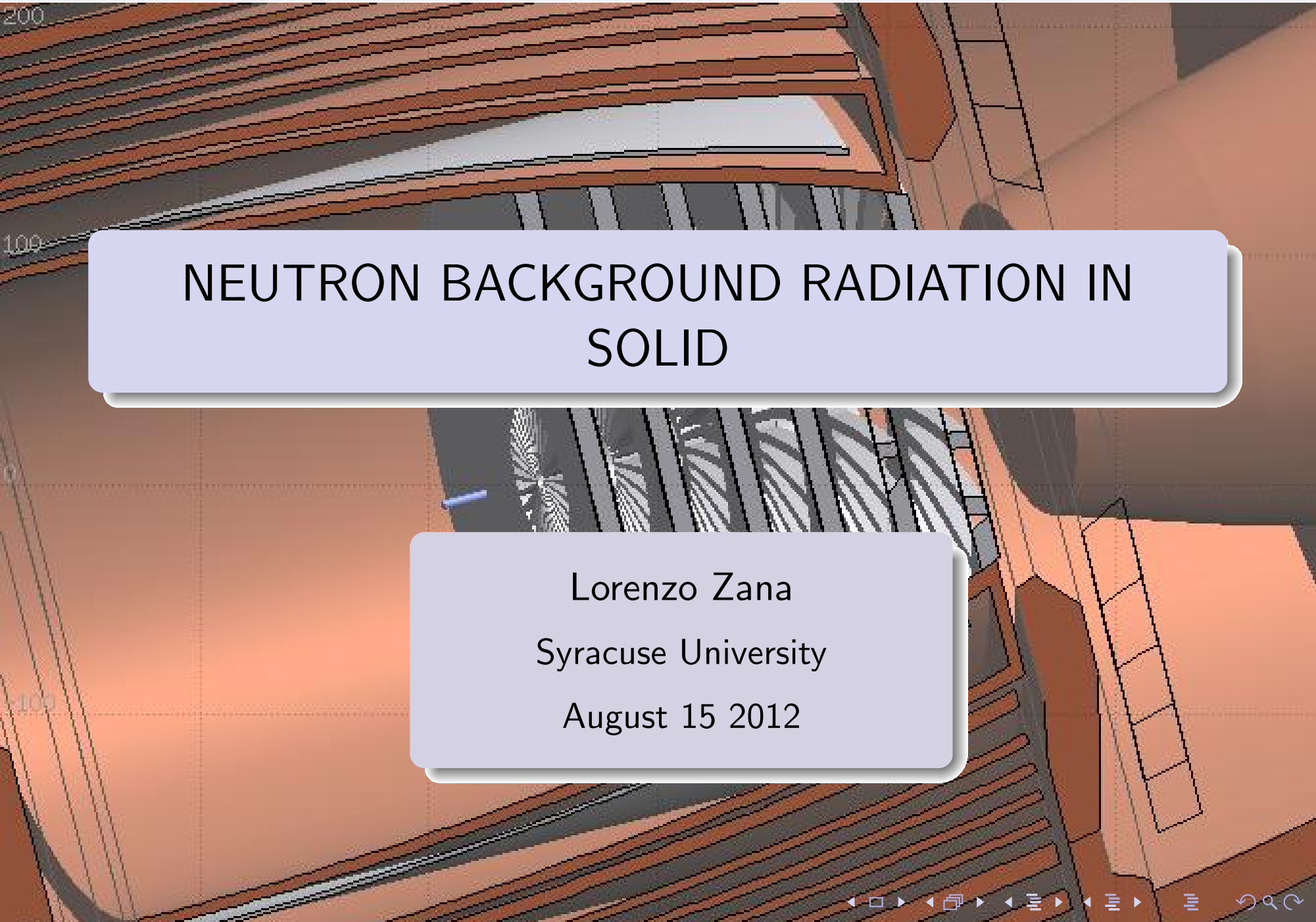


NEUTRON BACKGROUND RADIATION IN SOLID

Lorenzo Zana

Syracuse University

August 15 2012

1 Radiation on Electronic calorimeter

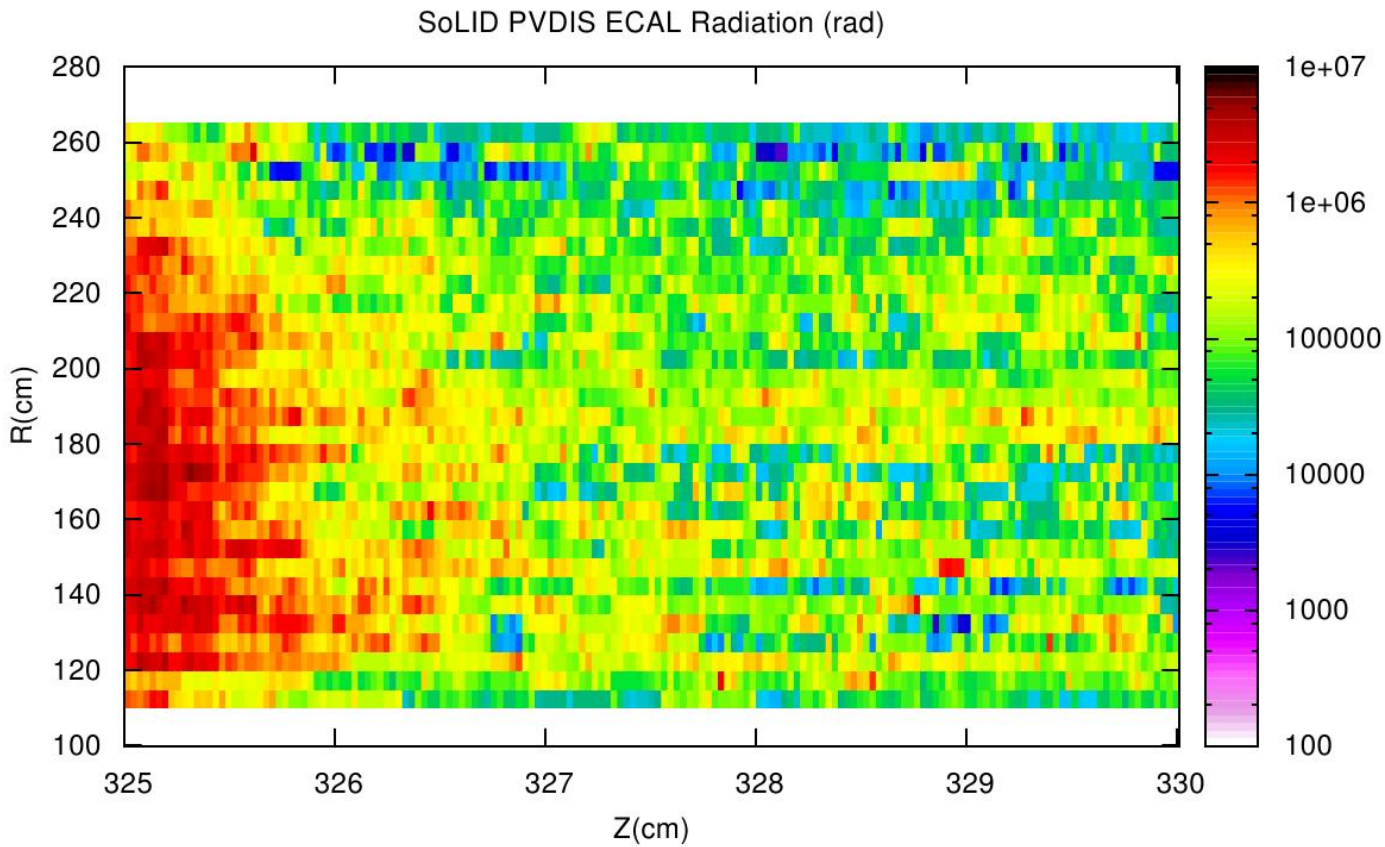
2 Source from Traget

3 CONCLUSIONS

Radiation on Electronic calorimeter

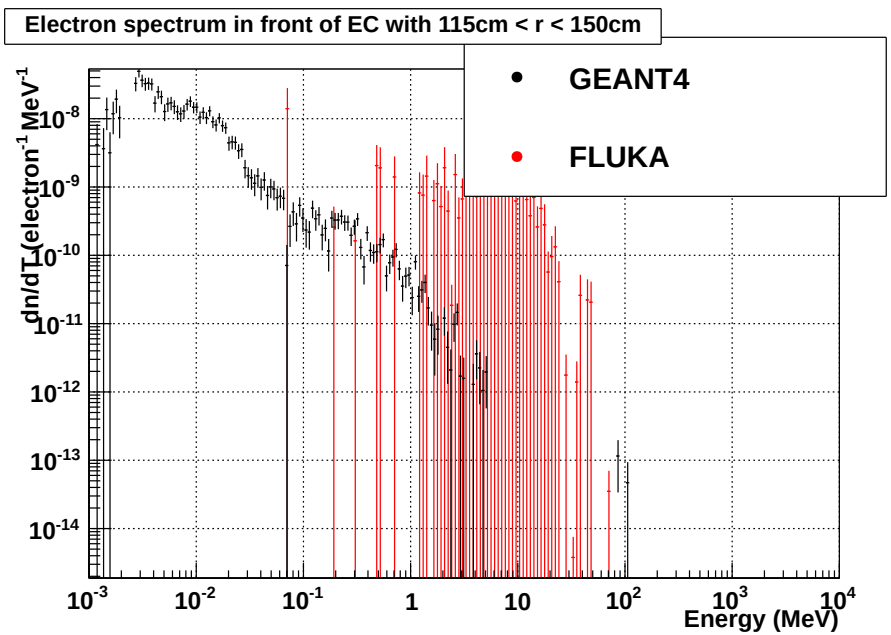
Discrepancy between FLUKA and Geant4

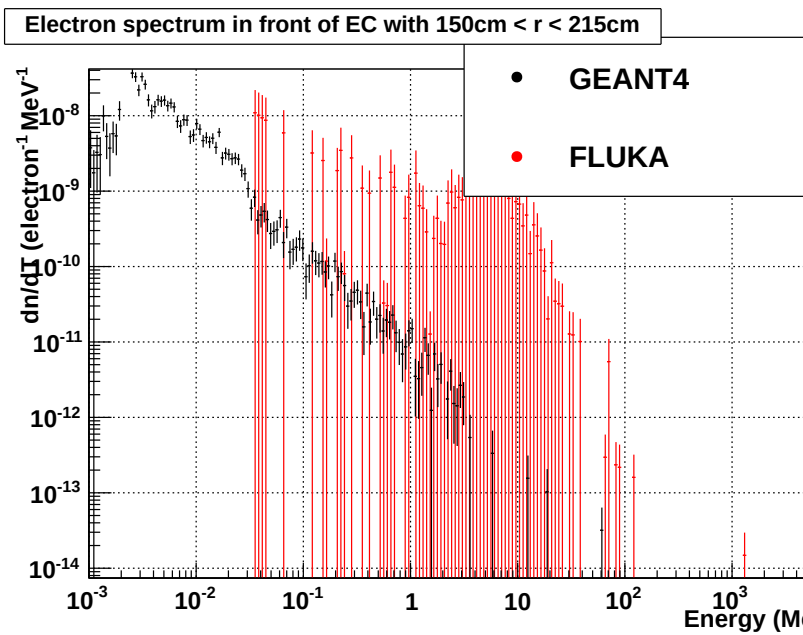
The dose by my Fluka simulation (last dry run) was an order of magnitude higher than the one obtained by Geant4



Radiation on Electronic calorimeter

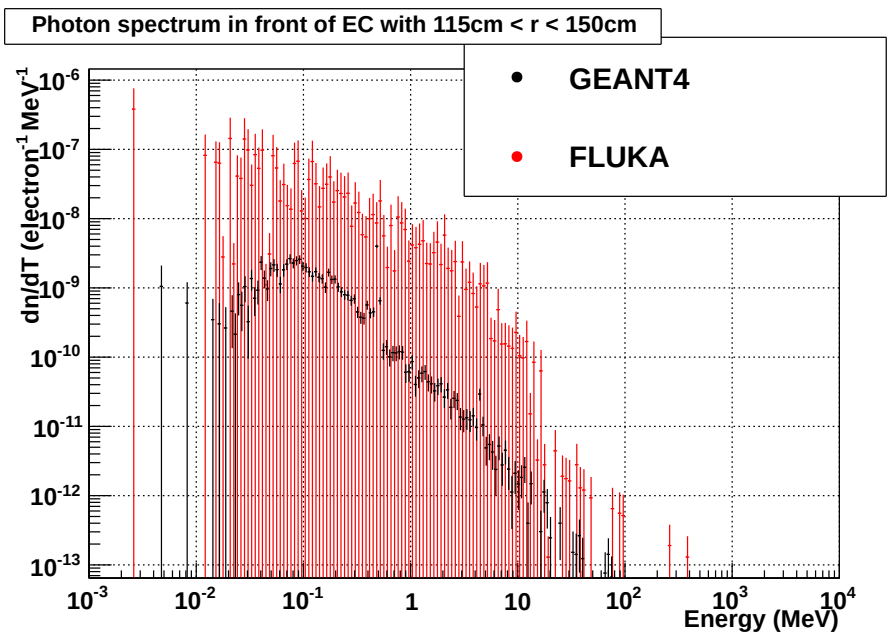
Electron on EC Calorimeter (PVDIS) Deuterium tg.

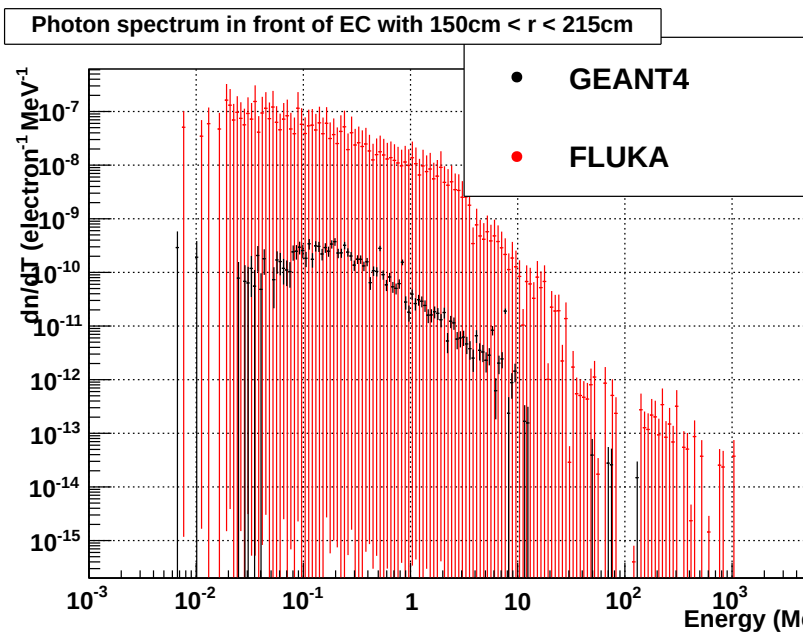




Radiation on Electronic calorimeter

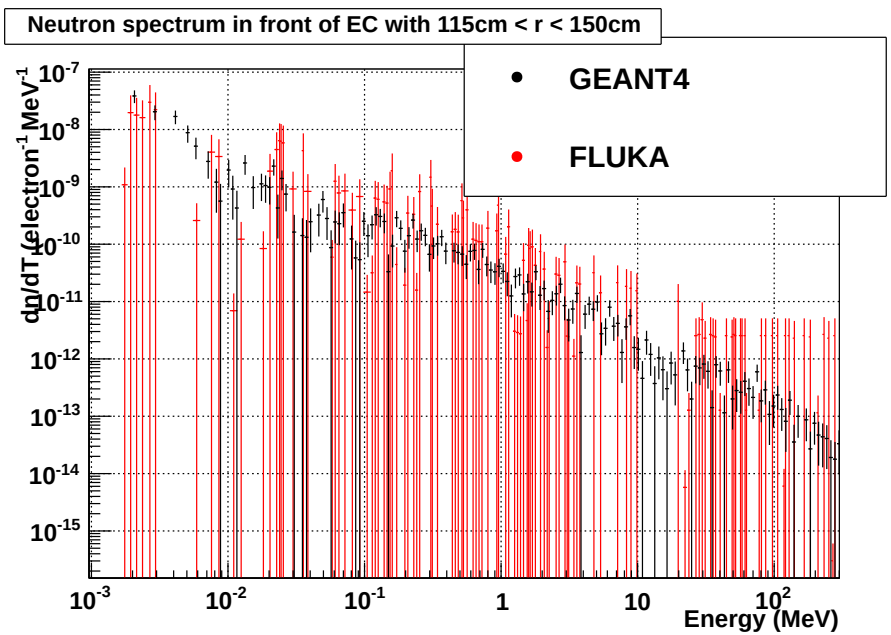
Photon on EC Calorimeter (PVDIS) Deuterium tg.

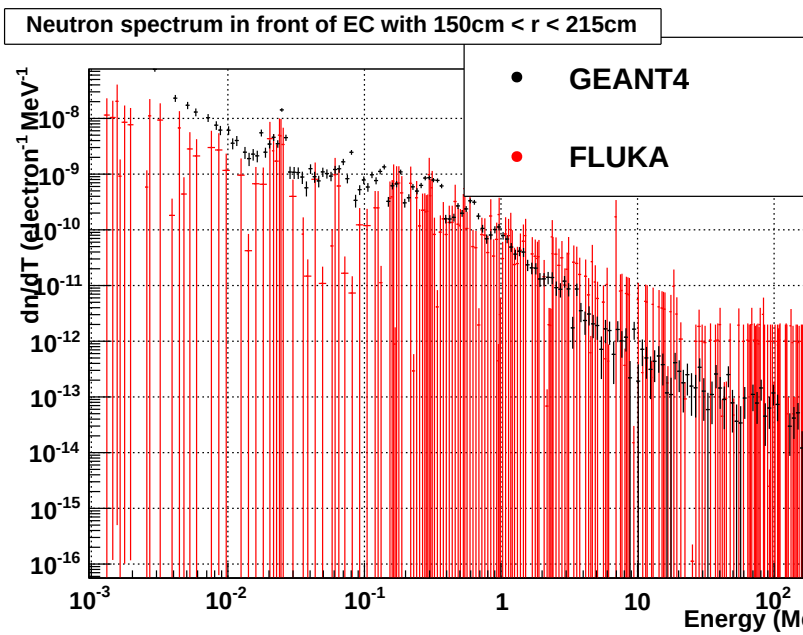




Radiation on Electronic calorimeter

Neutron on EC Calorimeter (PVDIS) Deuterium tg.





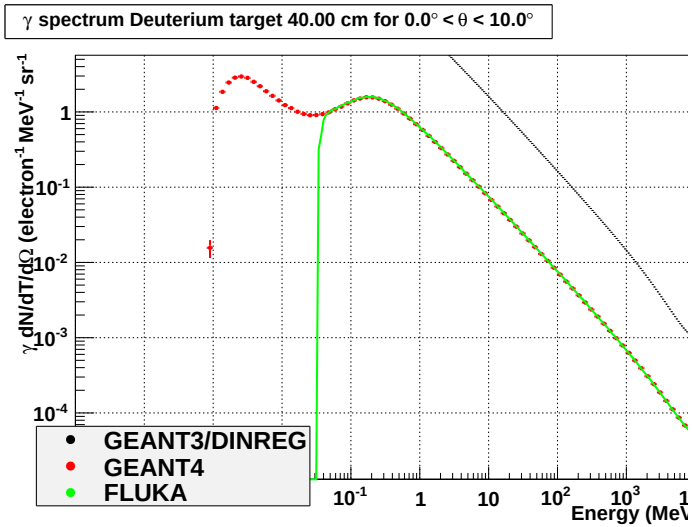
Deuterium target

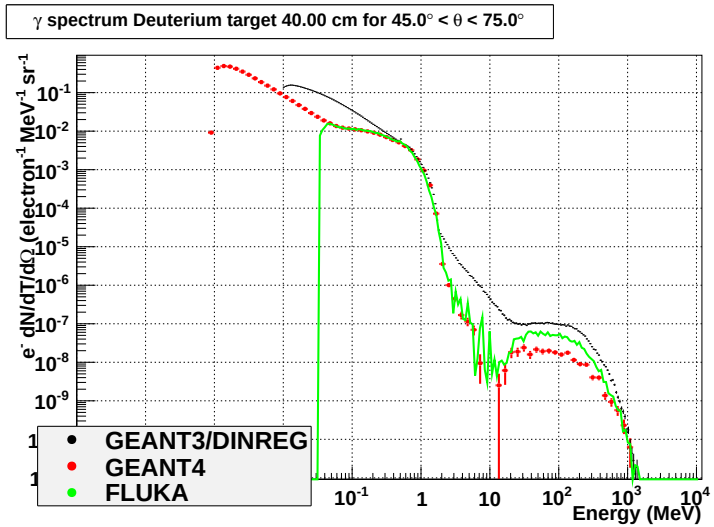
Implementation of common source from target for Geant4 and Fluka

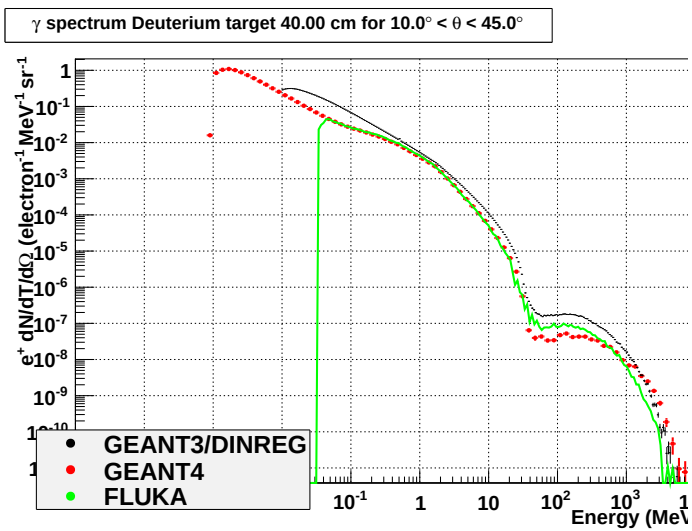
I am working on constructing a common source term from the target evaluating the imput from:

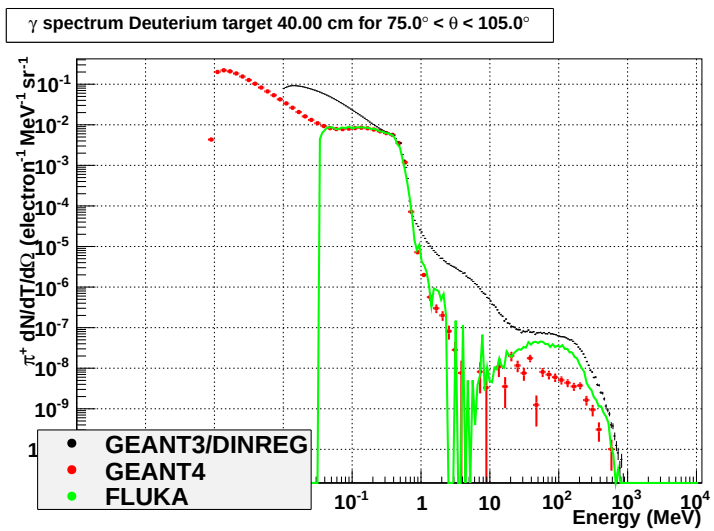
- FLUKA
- GEANT4
- GEANT3/DINREG (Pavel)

Deuterium target

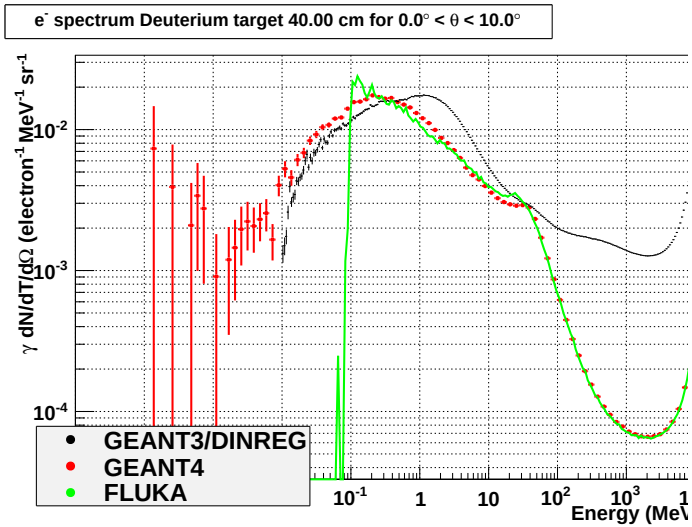


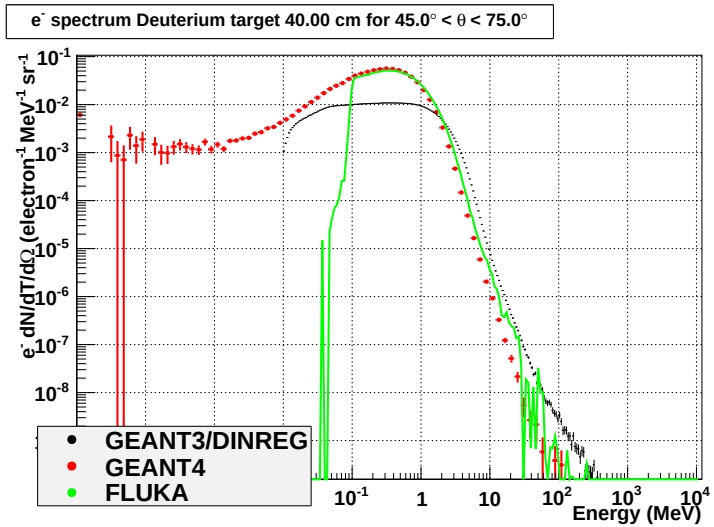


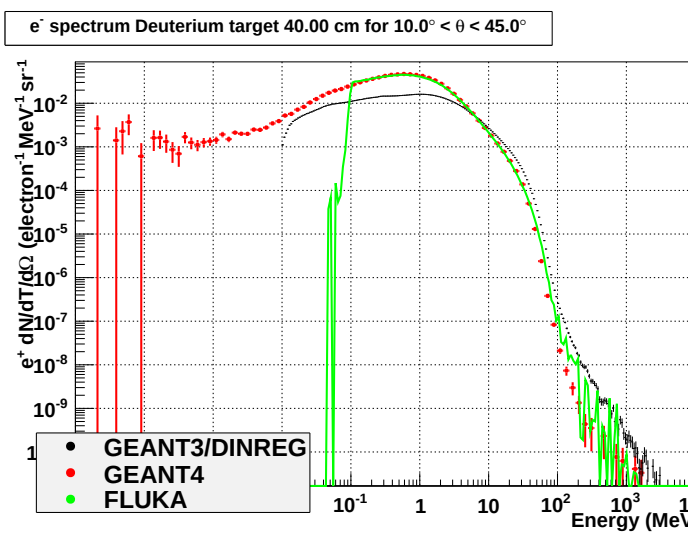


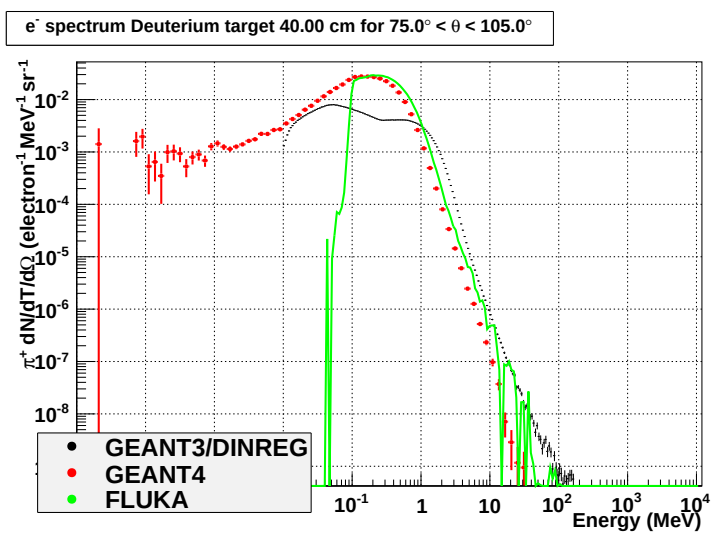


Deuterium target

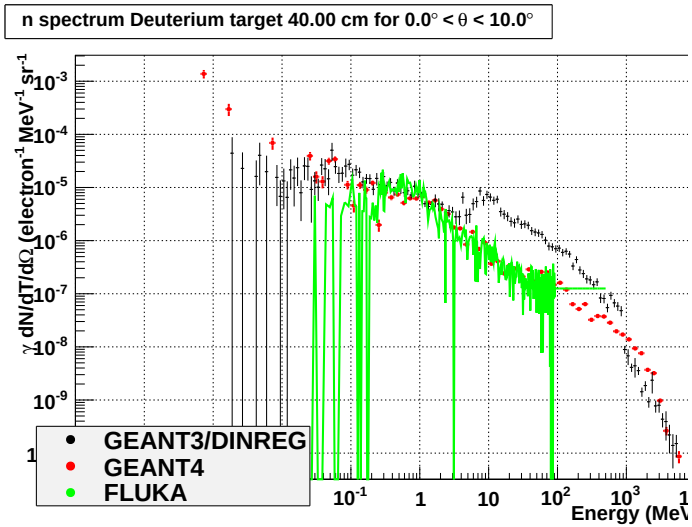


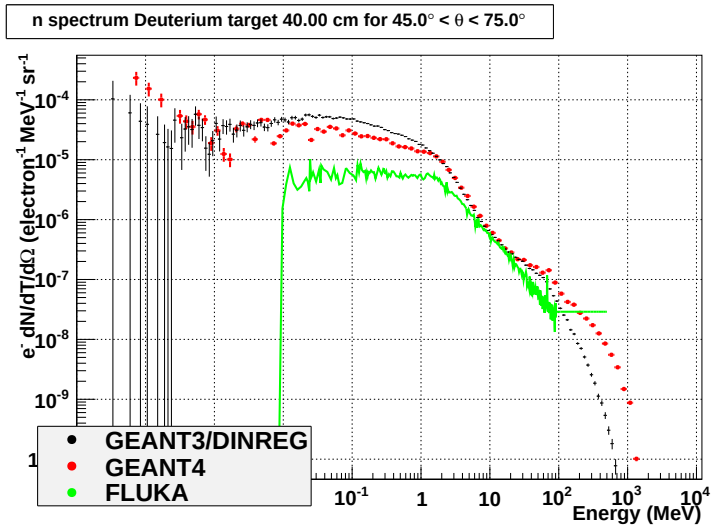


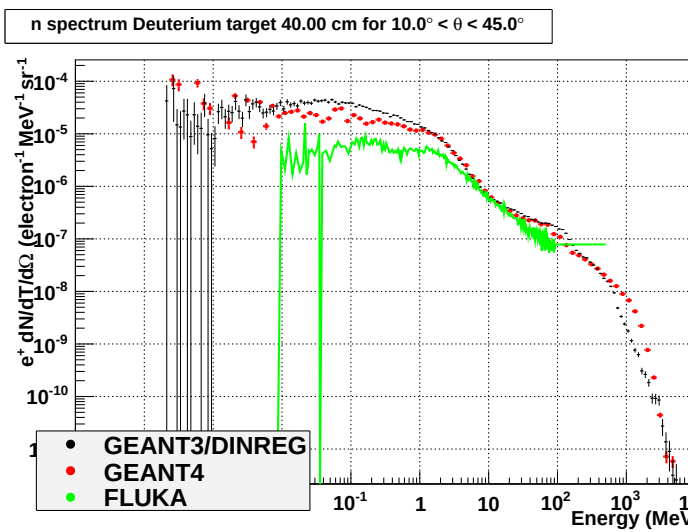


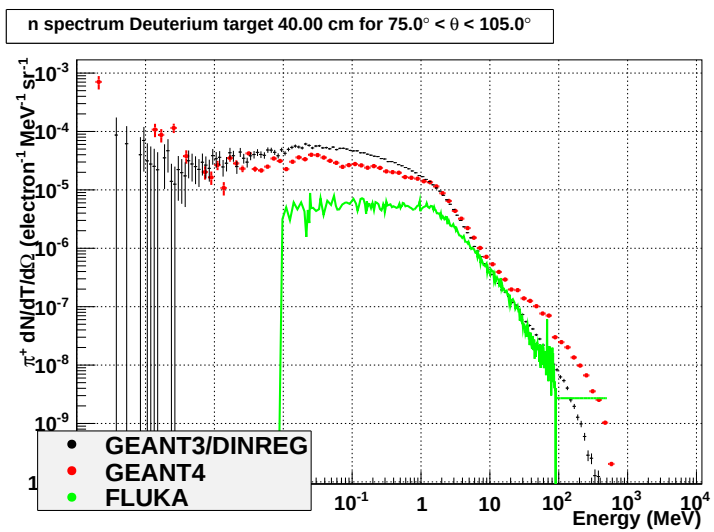


Deuterium target









Conclusions

Electronic Calorimeter Dose

- It is probable I have a small misalignement on the baffle design in FLUKA (I think I found it).
- New design under way and new results coming soon

Conclusions

Electronic Calorimeter Dose

- It is probable I have a small misalignement on the baffle design in FLUKA (I think I found it).
- New design under way and new results coming soon

Source term

- Implementation of neutron source term from the target in FLUKA, using Geant4 as a model
- Implement the possibility to change the cross section from the target to see the possible impact on the simulation