

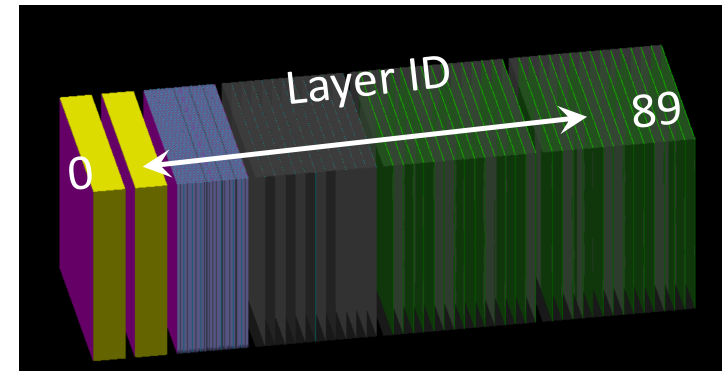
Updates (31/May/2021)

Shima Shimizu

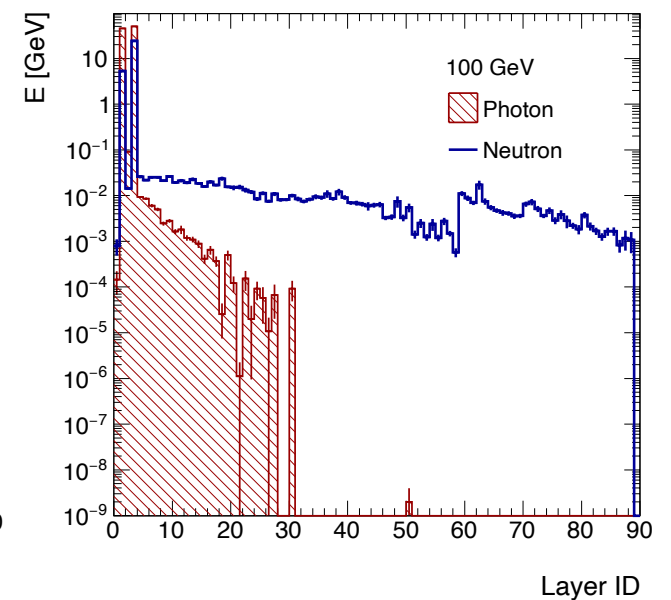
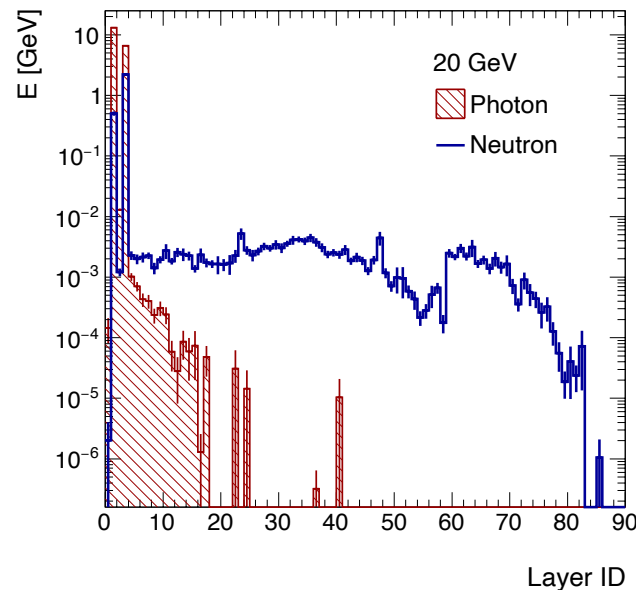
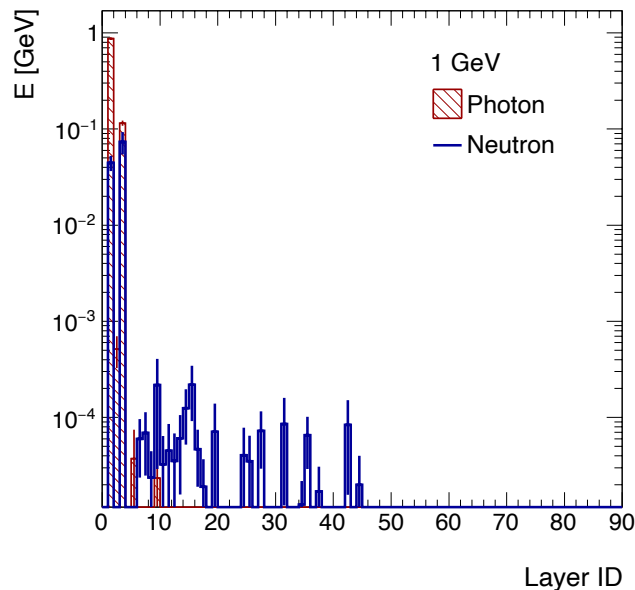
- ◆ First check of the energy deposits in the implemented ZDC.
 - Using particle gun of photon and neutron.
 - (0.3), 1, 20, 100 GeV
 - Plots are shown in the next slides.
 - Looks reasonable for the current structure.

- ◆ Output variables are available in TTree as well, in addition to Ntuple.
 - Contents are the same.
 - Detector type, Layer ID, x and y ID, position and timing of the G4hits, energy deposits

Energy deposition per layer



- Layer 1, 3: Crystal 3cm x 3cm 10cm thick
- Layer 0, 2, 4, 25, 46: Silicon 3mm x 3mm 300μm thick
- Layer 5-24, 25-45: Silicon 1cm x 1cm (w/ Tungsten) 320μm thick
- Layer 47-58: Silicon 1cm x 1cm (w/ Pb) 320μm thick
- Layer 59-89: Scintillator 10cm x 10cm 2mm thick



Energy map w/ 100 GeV photon or neutron

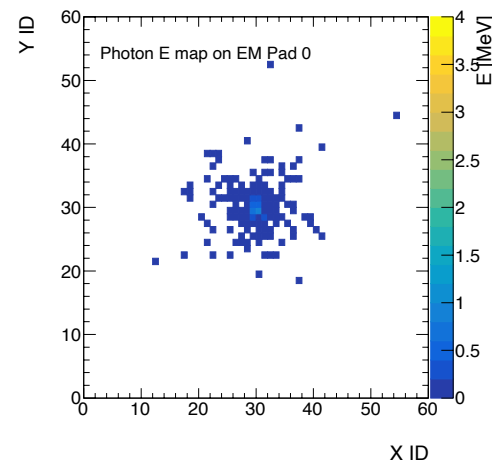
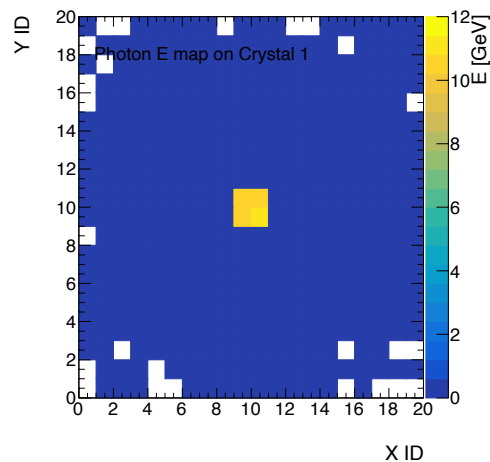
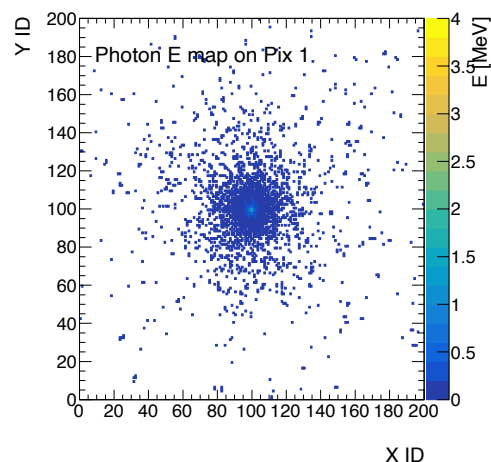
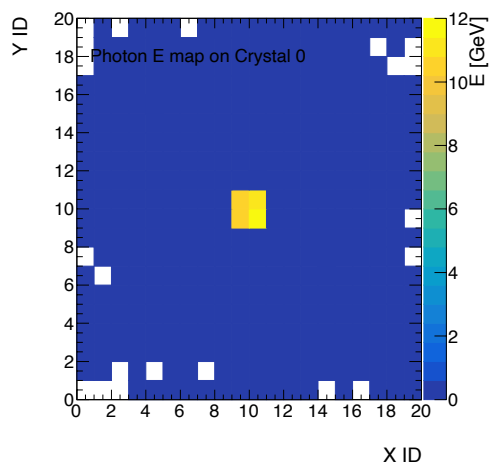
Layer 1
(Crystal 0)

Layer 2
(3mm x 3mm Silicon)

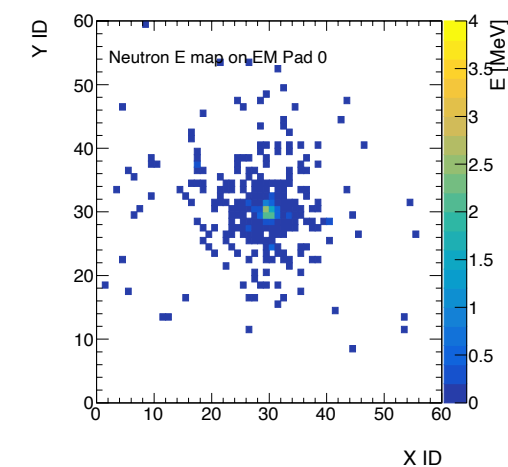
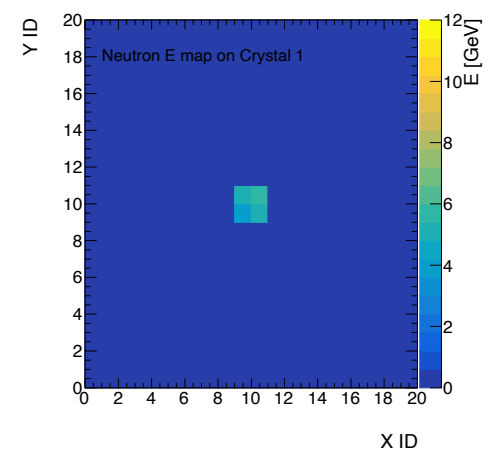
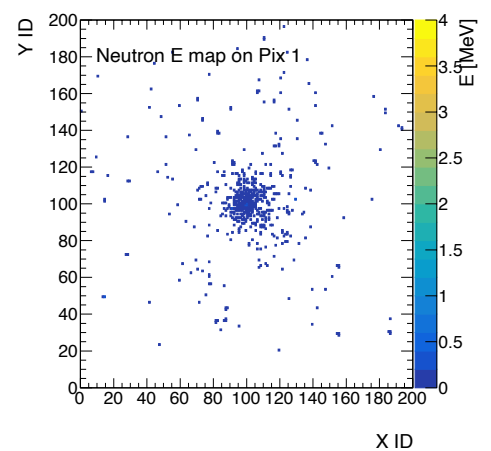
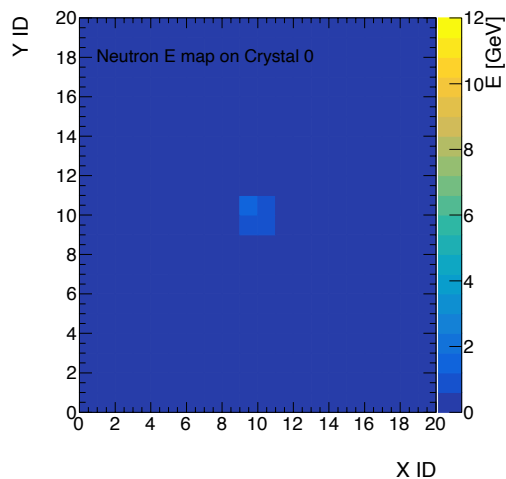
Layer 3
(Crystal 1)

Layer 5
(1cm x 1cm Silicon)

Photon

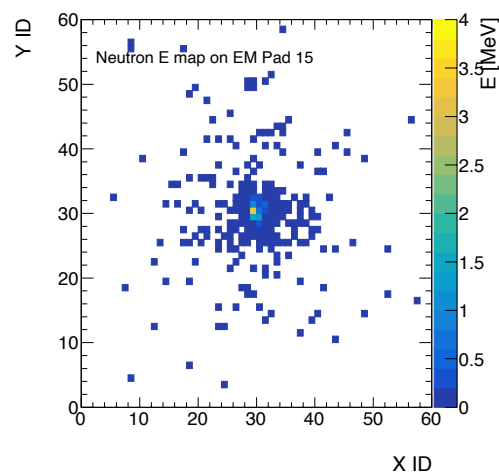


Neutron

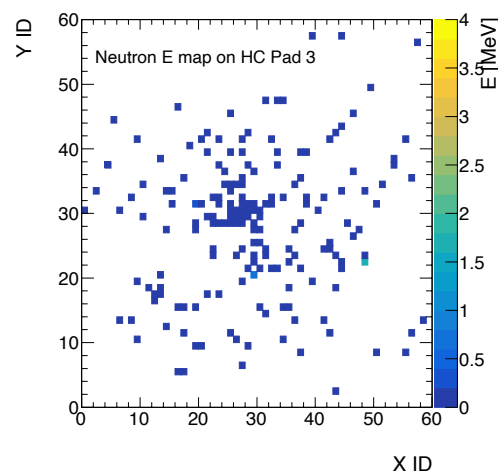


Energy map -- cont'd (Neutron only)

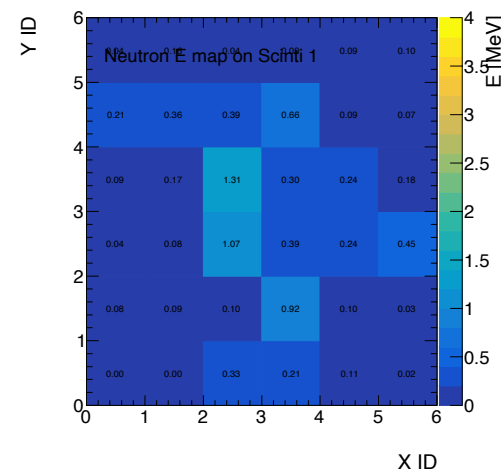
Layer 20
(1cm x 1cm Silicon,
absorber = Tungsten)



Layer 50
(1cm x 1cm Silicon,
absorber = Pb)



Layer 60
(10cm x 10 cm
Scintillator)



**FYI: Energy deposition of
300 MeV photon**

