

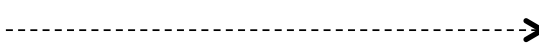
Detailed components of the shower triggered events

13 May 2020
Minho Kim

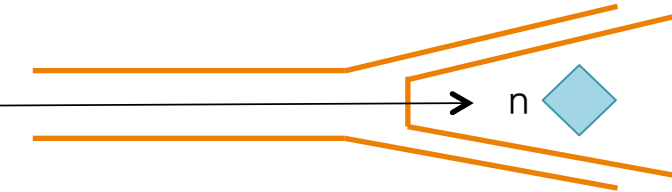
Components of the shower triggered events

(QGSJET-II 04)

Collision

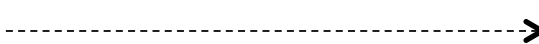


n

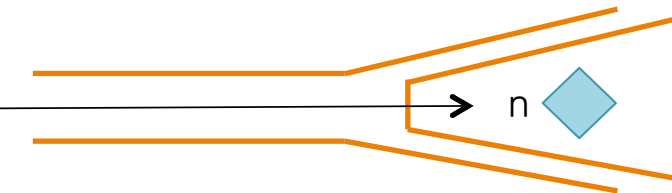


Single
neutron
~ 70%

Collision



Λ

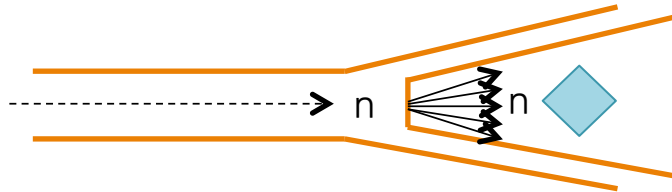


Lambda
neutron
~ 3%

Collision



n

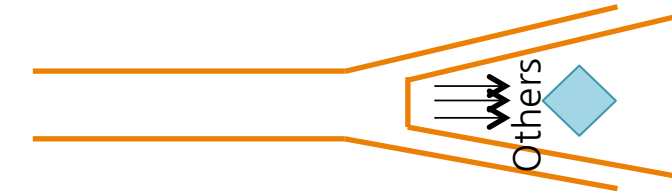


Interacted
neutron
~ 14%

Collision

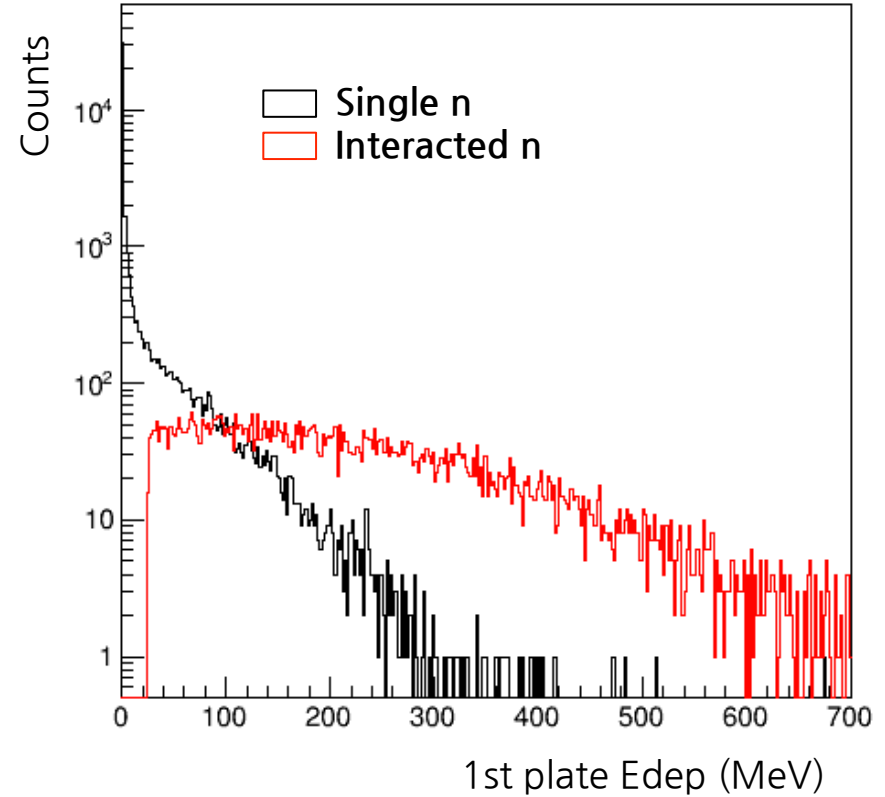
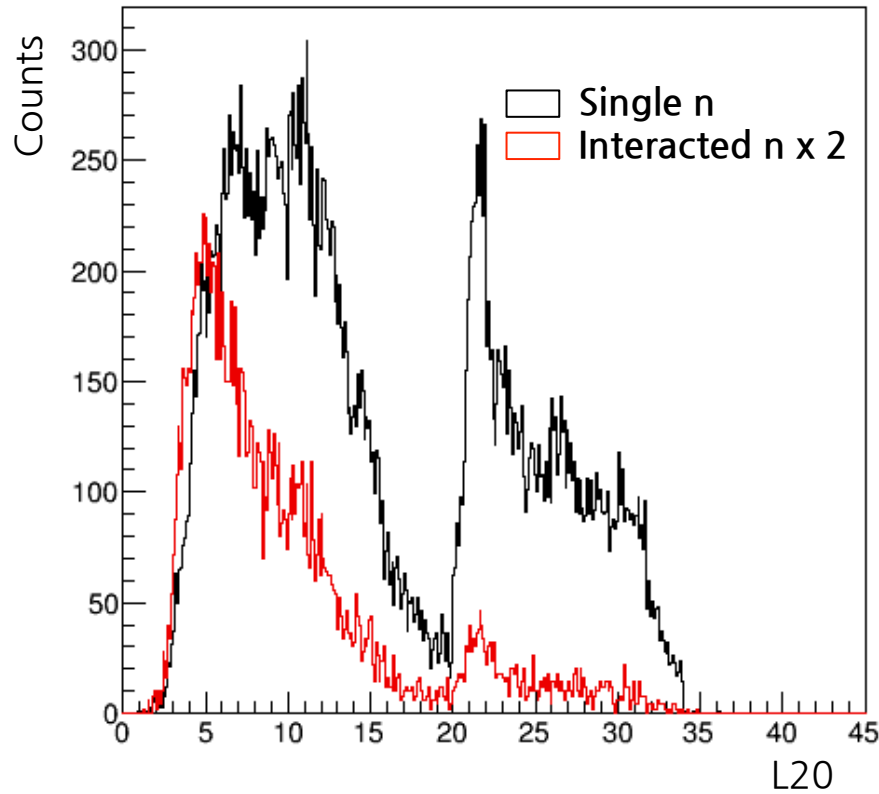


Others



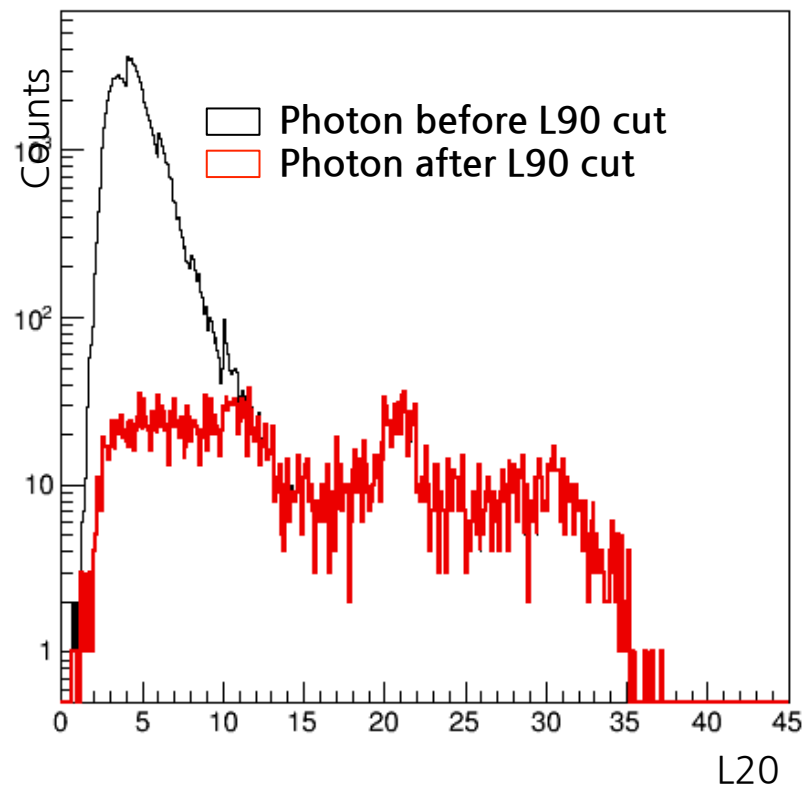
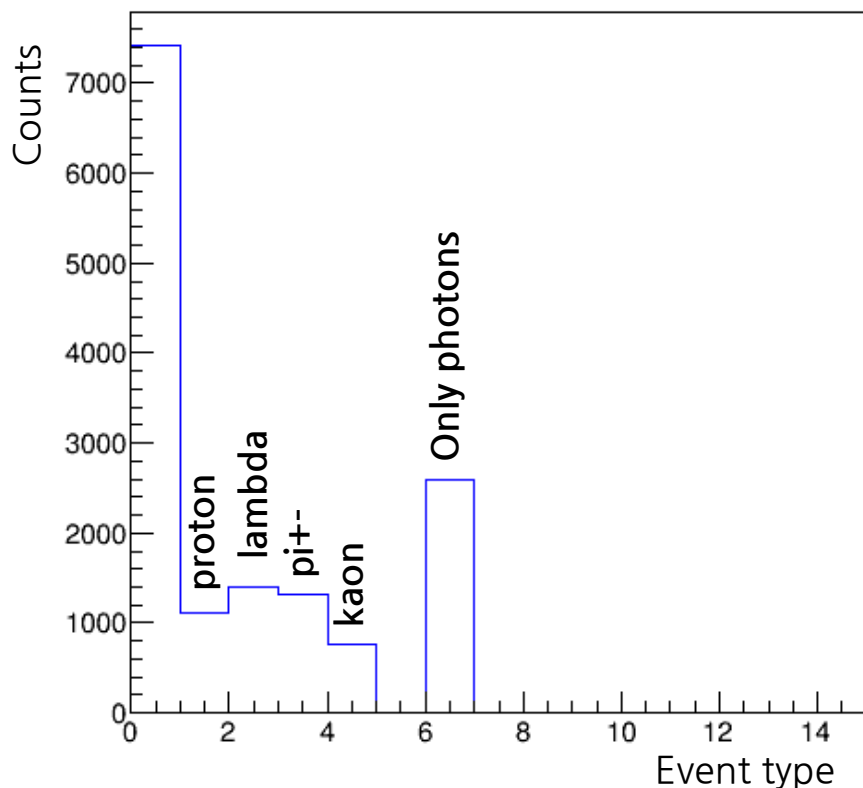
No
neutron
~ 13%

Events of single VS. interacted neutron



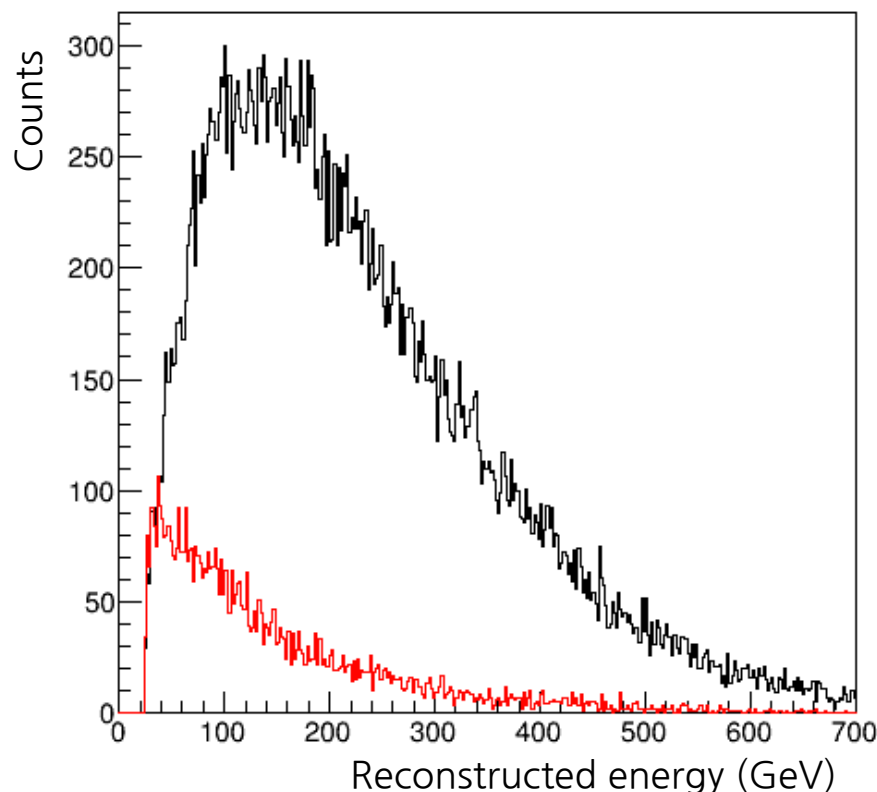
- Here, L90 cut was already applied.
- Particles produced by neutron-beam pipe interaction makes the L20 smaller and energy deposit in 1st GSO plate larger.

Events of single Vs. no neutron



- The no neutron events are composed of a combination of proton, lambda, π^{+-} , kaon, and photons.
- Because the photons are survived ones after L90 cut, these events can not be well suppressed using L20 or energy deposit of 1st GSO plate.

Events of single Vs. no neutron



- However, because there is no neutron, the energy distribution shows a different tendency.
- Therefore, we can enhance/ suppress the interacted neutron events by L20 or 1st GSO plate energy deposit and the background events by energy cut.