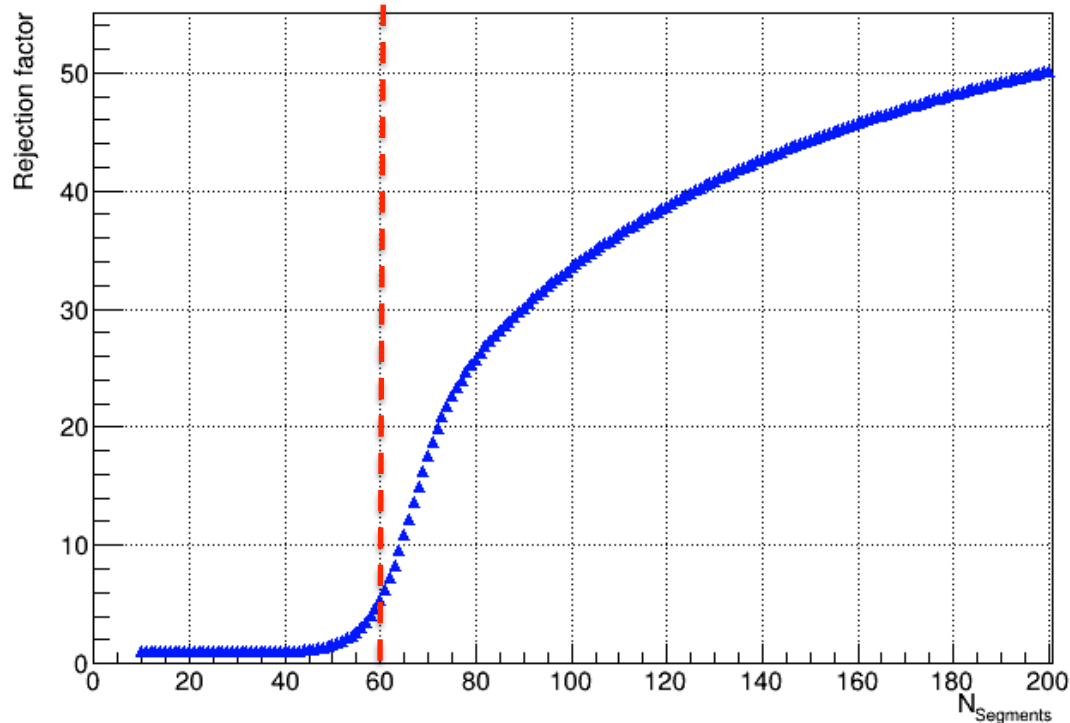


SPD update

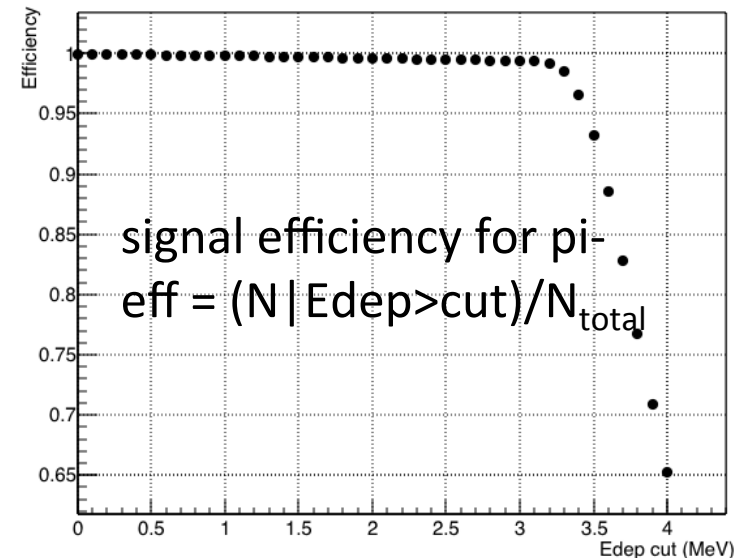
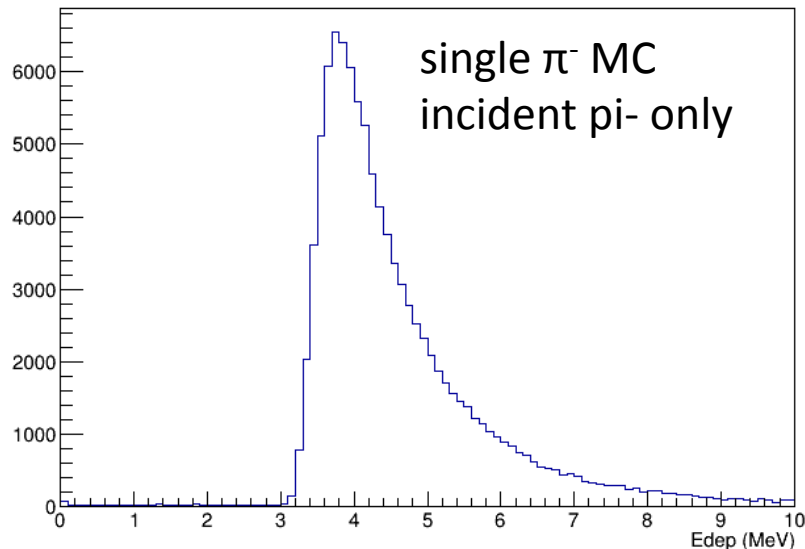
LASPD photon rejection



- Recent study showed that the photon rejection of the LASPD is not sufficient under the current configuration (60 azimuthal segments).
- The study uses half MIP cut ($\sim 3.8/2$) and the rejection factor is 5.4 for 60 segments.

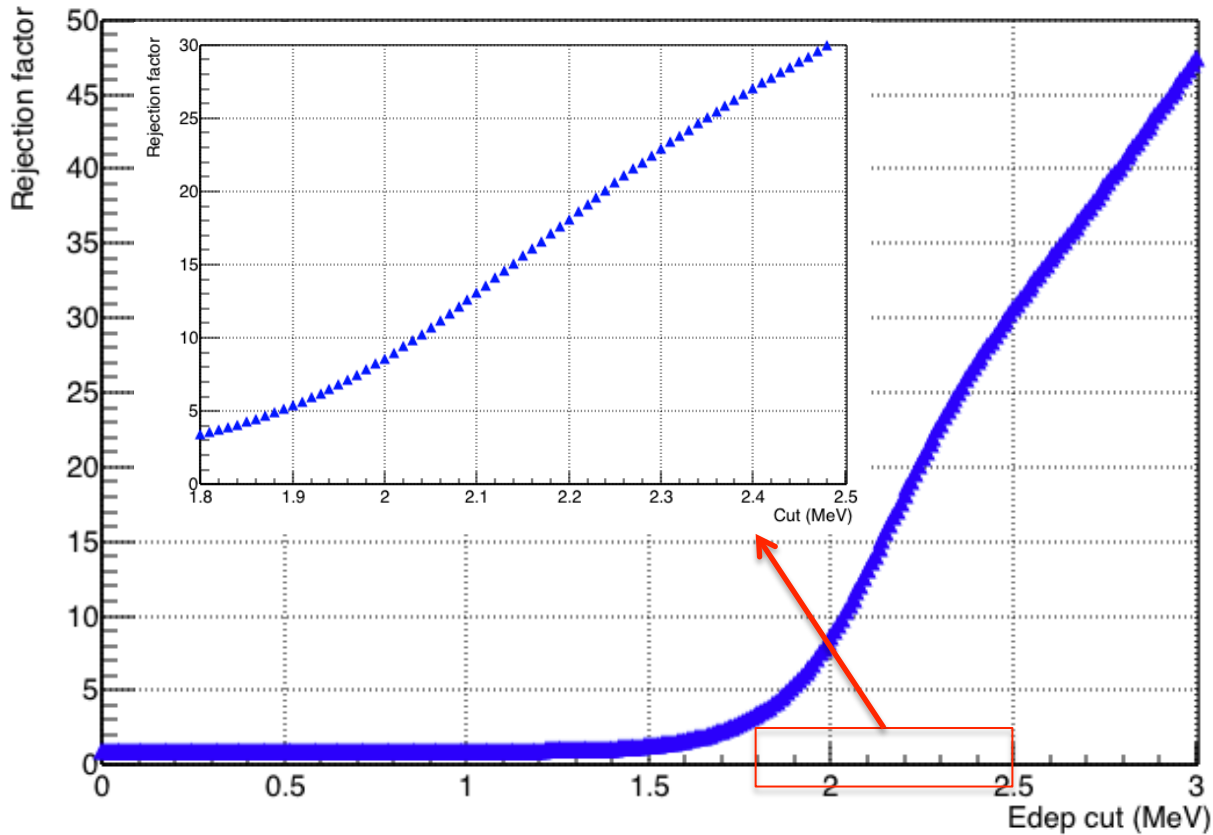
Alternative option: increasing cut

- The cut has been set to half of the MIP (~ 1.9 MeV). If we can increase the cut, we may be able to keep the current design.
- From the single π^- simulation, a slightly higher cut seems to be OK.



Cut scan

LASPD cut scan



If we set the cut to > 2.04 MeV, we can meet the rejection factor goal of 10:1 with the current design.

Summary table

Cut	Rejection factor	pi- signal efficiency
2.03	9.83	1.00
2.04	10.27	1.00
2.05	10.72	1.00
2.06	11.18	1.00
2.07	11.63	1.00
2.08	12.11	1.00
2.09	12.59	1.00
2.10	13.09	1.00

- We have room for increasing the cut to meet the 10:1 rejection factor goal while keeping the charge particle efficiency high.

backup

