

## Target Hits

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### Abstract

Information about hits within the Target.

## 1 Fibers with Kaon & Pion hits

### 1.1 Cuts that are effected

- *chi567*: Removed K/pi hits in the next processing.
- *chi5max*: Same as *chi567*.
- *verrng*: Same as *chi567*.
- *angli*: Same as *chi567*.
- *TGdEdX*: Removed K/pi hits within comis function.
- *npitg*: See below.
- *epimaxk*: Previously looked at closest fiber outside kaon fibers. Now K/pi fiber would be considered. *epionk* created.

### 1.2 Variables that are effected

- *etg*: Uses K/pi hit.
- *etot*: Uses K/pi hit.
- *rtg*: Could be effected if the addition of K/pi hit causes the decay vertex to change fiber? This should be a small effect.
- *rtot*: Same as *rtg*.

### 1.3 Events with no pion hits outside kaon fibers

These events did not exist in E787. They are currently allowed due to CCD fitting before passing hits to *swathccd*. I observe 24 events that have all pion hits in a kaon fiber. 1.43 million total events analyzed which pass the setup cuts and have at least 1 pion hit (*itgqualt* = 0); 70k events have no pion hits (*itgqualt* = 1) after setup cuts. 20 of the 24 events have only 1 pion hit, 4 of the 24 have 2 pion hits.

Paw photo shows that about half of the events are poorly reconstructed. The events with good reconstruction have a decay near the target edge.

- [benjil/bkg/studies/itgqualt/](#)

- Kpi2 monitor
- Cuts: TGCUT, UTC, RD\_TRK, TRKTIM, RDUTM

I have modified the cut *npitg* to remove events which have all pion hit existing in a fiber with a kaon hit.

## 2 nall\_tg arrays

During the PNN1 analysis we added additional hits to the npvtg arrays. The extra hits were obtained from hits that exist in the nall\_tg arrays which were not flagged as being a Pion, Kaon, Opposite-side Pion, or Photon Veto. The majority of the added hits were target-edge fibers (element numbers 1-16). However, hits do exist which are within the TGPV-cut time window that are not target-edge fibers. The addition of these hits forces TGPV to reject more events.

- Where are these extra hits coming from?
- Why doesn't *swathccd* classify these hits?