Current Status of $K^+ \rightarrow \pi^+ \gamma \gamma$ Analysis

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• Outside-the-box study
  - for Kpi2 background
  - for Muon background
Outside-the-Box Study (Kpi2)

Kp2 function

\[ \text{KINxPV = 10x5, 20x10, 50x10, 100x10 and 150x10 were used} \]

Due to the fact that the PV can be loosened up to \(~10\).
Outside-the-Box Study \( \text{(Kpi2)} \)

Good agreement between observed and predicted number of events can be seen.
Outside-the-Box Study (Muon)

Km2b function

TD function

Km2 band can be loosened only a factor of 2. Hard to study. The events in the normalization branch are studied.
If the events in $P_{tot}<225$ MeV/c are considered to be band events, the $Km2$ function can be loosened up to $\sim 5$.

12 events remained in the $P_{tot}>225$ MeV/c. The loosening factor dose not increase due to these events when $chirm$ is loosened.
Typical Event Display

Seems to be radiative Km2.
Summary

• *Outside-the-box study*

  - for Kpi2 background looks OK.

  - for Muon background is currently hard to study. The events in the Ptot>225MeV/c will be studied in detail.