

Strategy to Wrap-up KTeV LFV Searches

BobT for Marj et al.

March 12th 2005

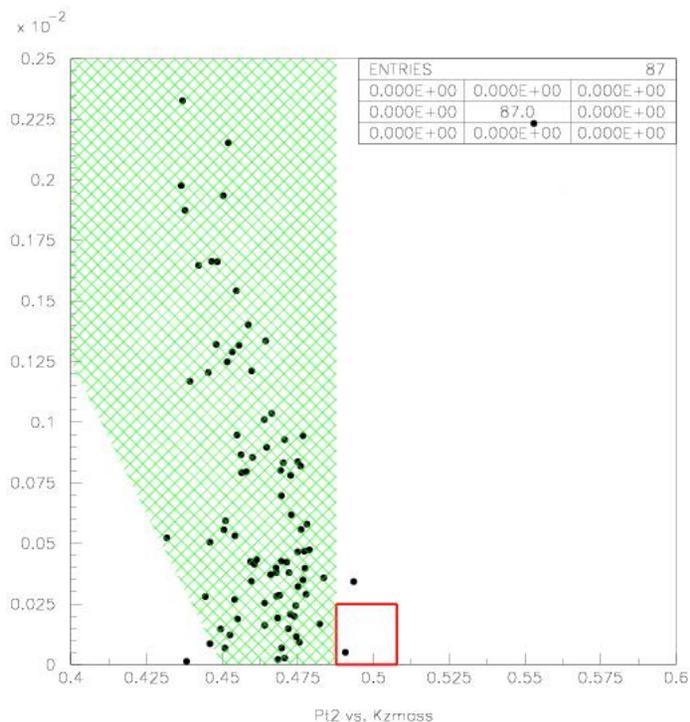
LFV Analysis Status

- $K_L \rightarrow \pi^0 \pi^0 \mu e$: First move away from “Box” analysis in KTeV, using Likelihood analysis, in good shape.
- $\pi^0 \rightarrow \mu e$: Backgrounds from $3\pi^0$ (Dalitz) now understood and matches data.
- $K_L \rightarrow \pi^0 \mu e$: **5 events** observed (2 '97 + 3 '99) with an expected background of **1+/- 0.5 events**.

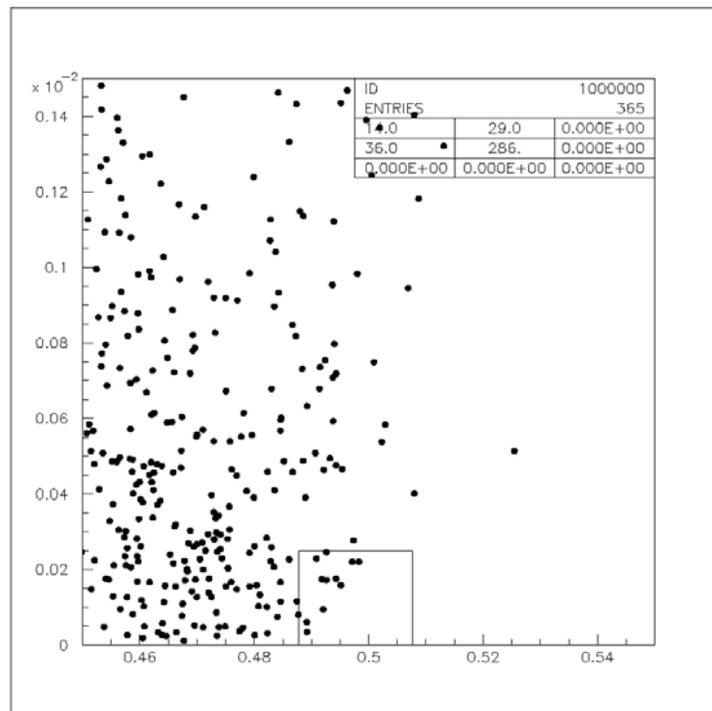
$K_L \rightarrow \pi^0 \mu e$ continued...

- Ke4 background estimate made with $(\pi \rightarrow \mu)$ decays not modeled correctly.
- Systematic study of Ke4 Form Factor variation not completed.
- First indications are that the (97+99) mean Ke4 background estimate of **1 event** will increase to **2 events** when modeled correctly. (compared to the 5 observed events).

Ke4 '99 Background studies.



X23 times data w/ πDK bug



X40 times data, πDK fixed.

Road to completion.

- Reanalyze Ke4 background studies for $K_L \rightarrow \pi^0 \mu e$.
- Combine the 3 LFV analyses into a single paper with a coherent Likelihood analysis of background and signal “Box”.
- Time scale of Summer '05 to wrap up.