3–Prong Decays with Charged Kaons

Scant Data on these Modes / Limited Understanding
Expect $K^-\pi^+\pi^-$ from:

- $K_1(1400) \to K^*\pi$
- $K_1(1270) \to K\rho(42\%)$ $K^*\pi(16\%)$
- But in What Fractions?
  - CLEO $\pi^- K^0_S \pi^0 \Rightarrow$ mostly $K_1(1270)$

ALEPH Meas. of Excl. Modes with & without π^0's

- ECAL for π^0 ID
- $\mathrm{d}E/\mathrm{d}x$ to Separate $K^\pm/\pi^\pm$
- Neat Trick to Dig K's out of $\pi^-\pi^+\pi^-$
  $BR(3h^\pm) \sim 30 BR(K^-h^+h^-)$
  - $W^- \to \bar{u}d$, $\bar{u}s \Rightarrow$
  - $\tau^- \to \nu_\tau + K^+\pi^-\pi^-(\pi^0)$ & $K^-K^-\pi^+(\pi^0) = 0$
  - f_K in Q(trk)≠Q(τ) $\Rightarrow K^-K^+\pi^-(\pi^0)$
  - f_K in Q(trk)=Q(τ) $\Rightarrow K^-\pi^+\pi^-(\pi^0) +$
    $K^-K^+\pi^-(\pi^0)$
  - Don't Have to Identify all 3 Hadrons
- Requires Careful Recalib. of $\mathrm{d}E/\mathrm{d}x$ in 3-Prong Env.