

Status of $K_S \rightarrow \pi e \nu$

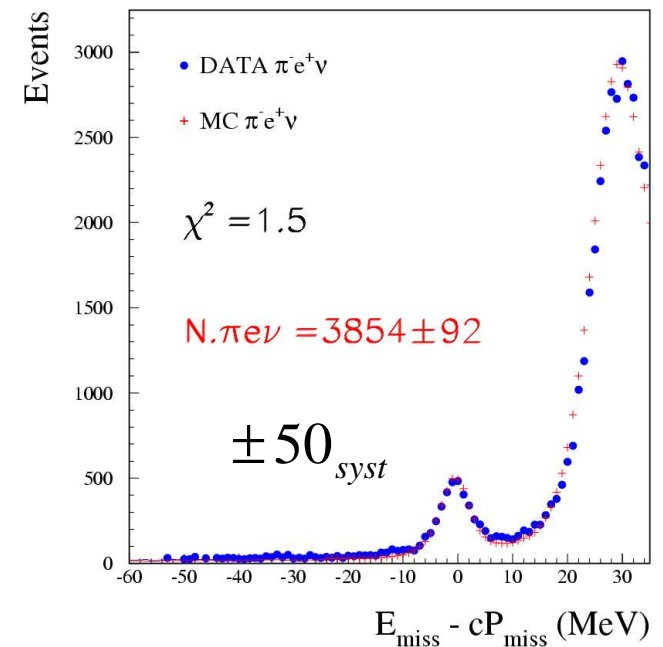
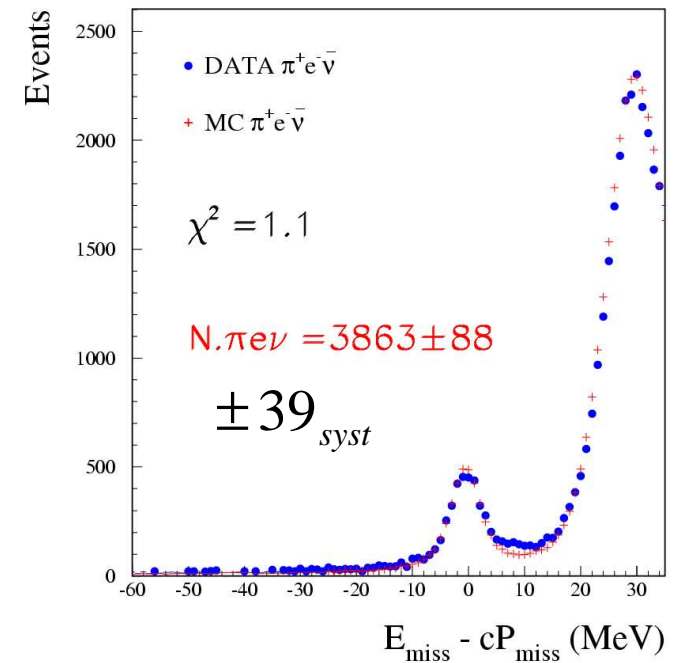
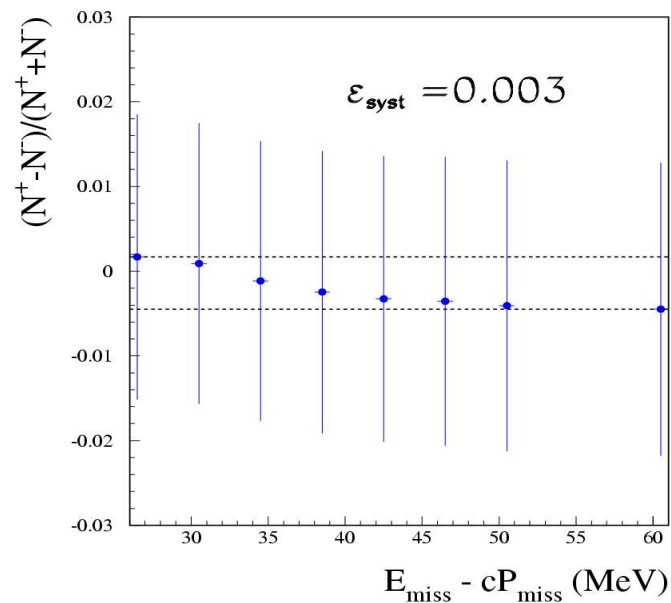
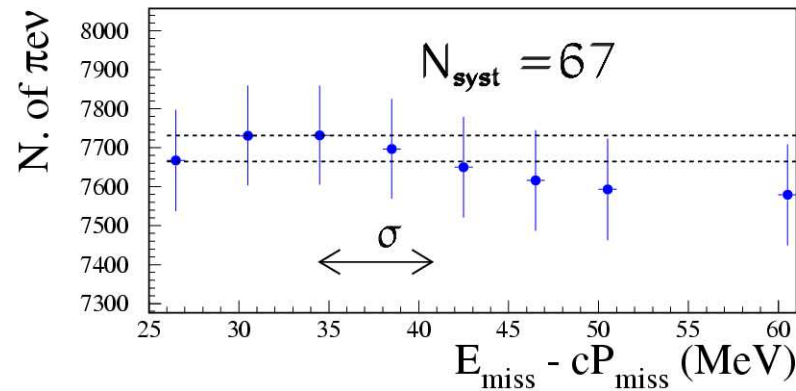
- Summary of the results (bmw)
- Pezzetto (small piece)
- Results (amw)

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KLOE general meeting 11/2003 Roma La Sapienza

Event counting Y2001 (Summary)

- BKG Data \neq MC
- MC BKG smearing: $\sigma=2$ MeV (???)
- large syst. errors

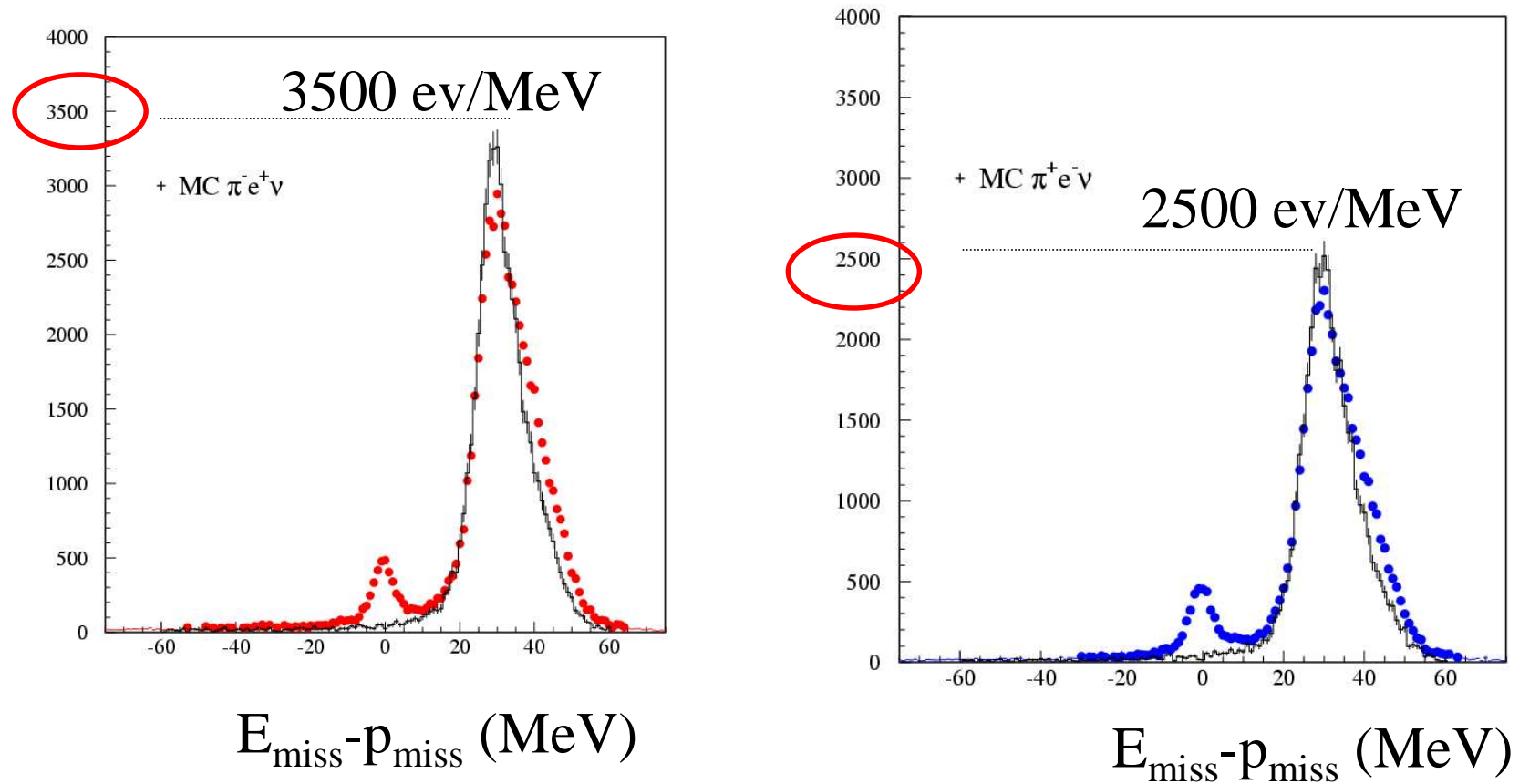


| | Fractional error % |
|---|--------------------|
| Statistics of $K_S \rightarrow \pi e \nu$ | 1.60 |
| Statistics of $K_S \rightarrow \pi^+ \pi^-$ | 0.03 |
| $K_S \rightarrow \pi e \nu$ selection | |
| DC preselection efficiency | 0.67 |
| TCA, $T0$, and trigger | 0.97 |
| ToF | 0.10 |
| Fit systematics | 0.87 |
| $K_S \rightarrow \pi^+ \pi^-$ selection | |
| DC preselection efficiency | 0.11 |
| TCA, $T0$, and trigger | 0.40 |
| Ratio of tagging efficiencies | 0.15 |
| Ratio of cosmic veto inefficiencies | 0.30 |
| BR($K_S \rightarrow \pi^+ \pi^-$) | 0.39 |
| Total relative error | 2.3 |

Furthermore, radiative corrections not included ($\pm??\%$)

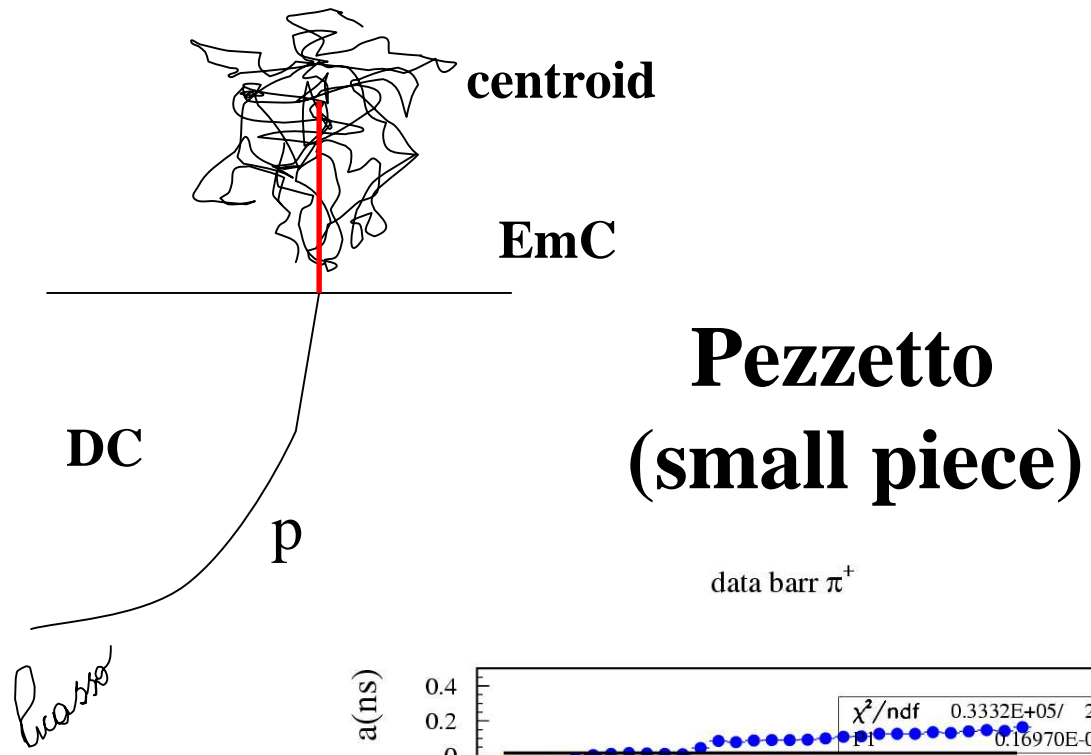
MC/DATA comparison

MC normalized to data events in (20-40)

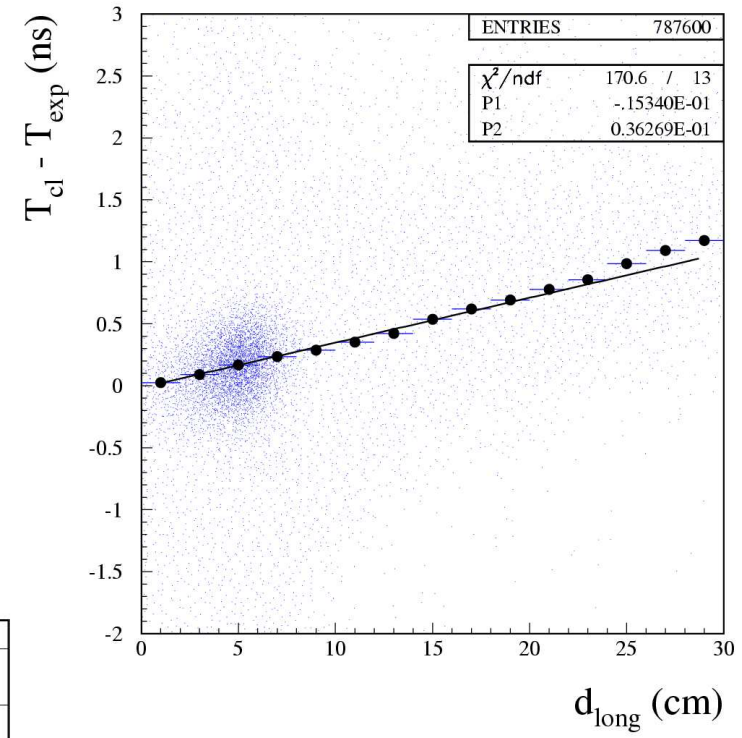


Why do we have this asymmetry?

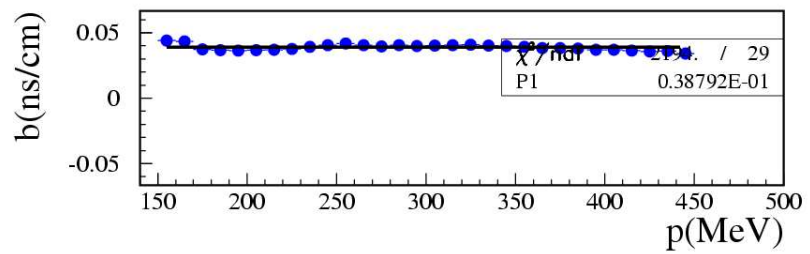
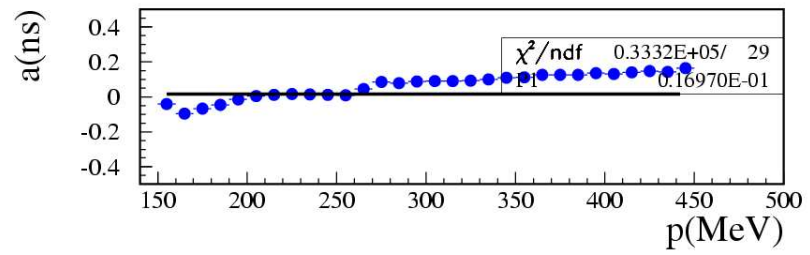
Different behavior of π^+ and π^- in EmC!



slice det barr $P_{TRK}=200.$ (MeV) data part π^+



data barr π^+

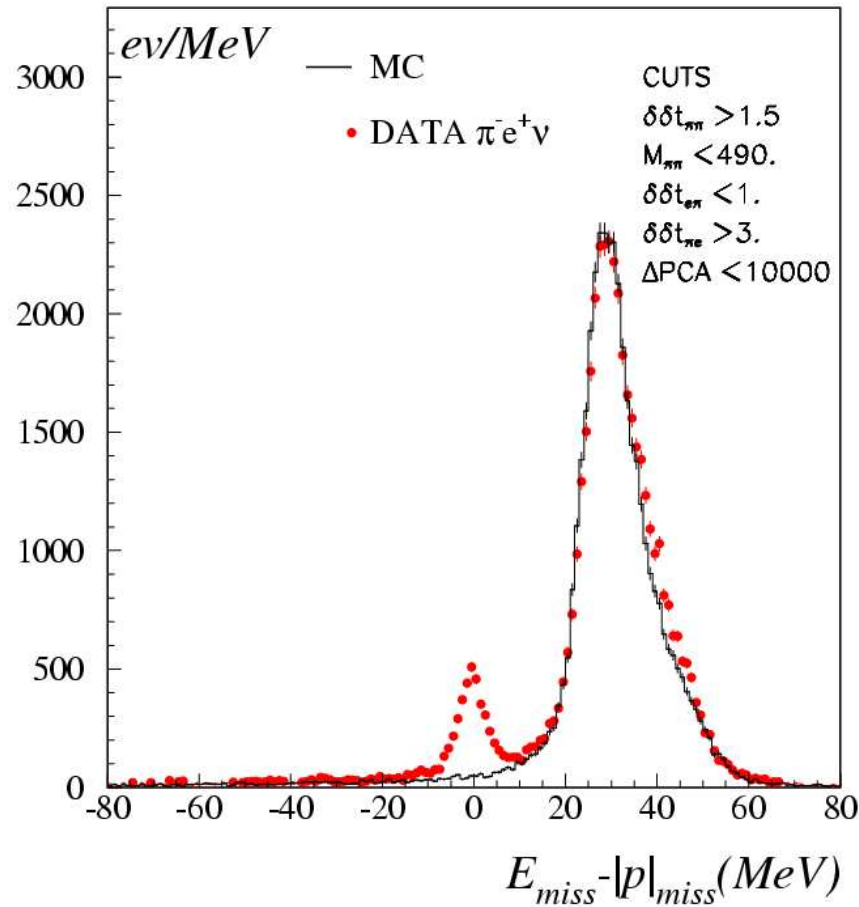


$$\Delta t(ns) = a(ns) + b(ns / cm)R_{centroide}$$

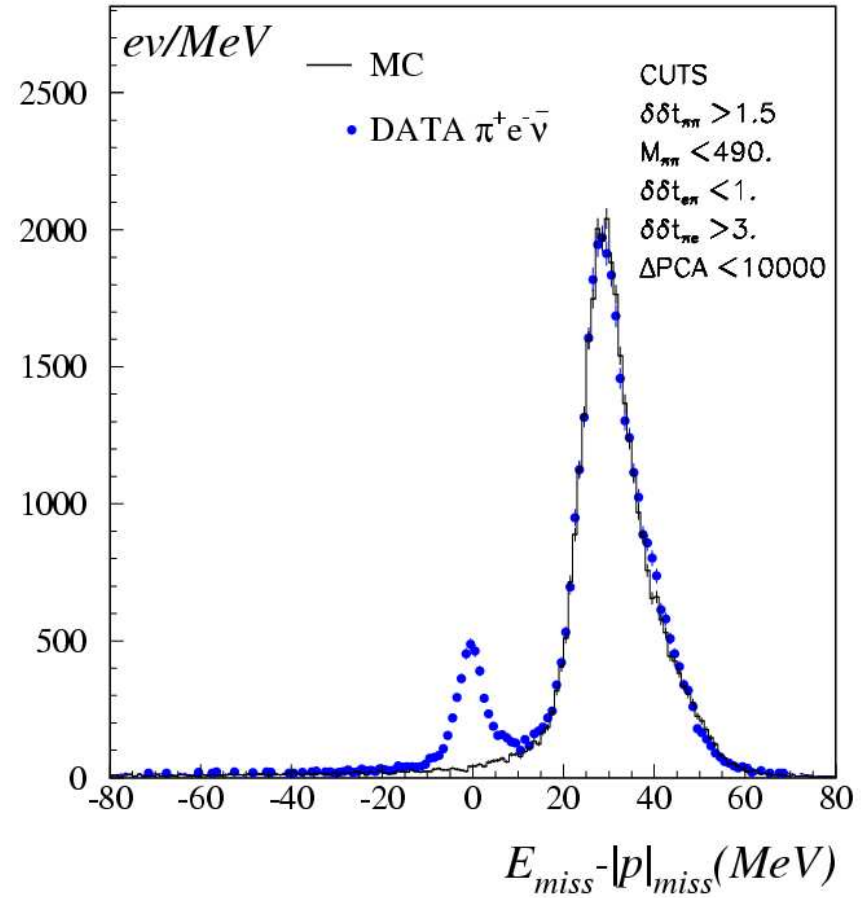
Comparison including Pezzetto

Lower BKG and smaller asymmetry

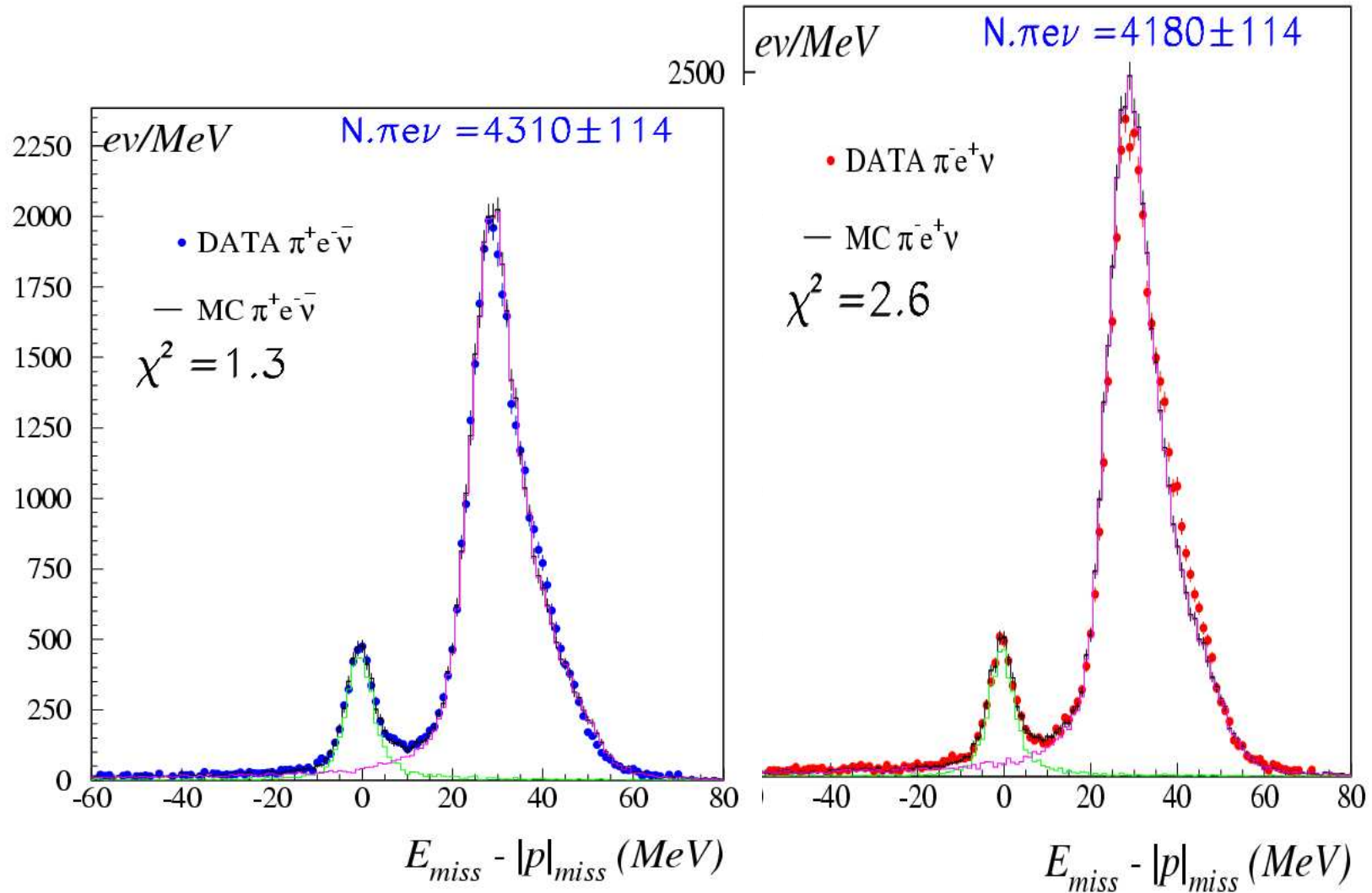
B/S = 777/3303=0.235241



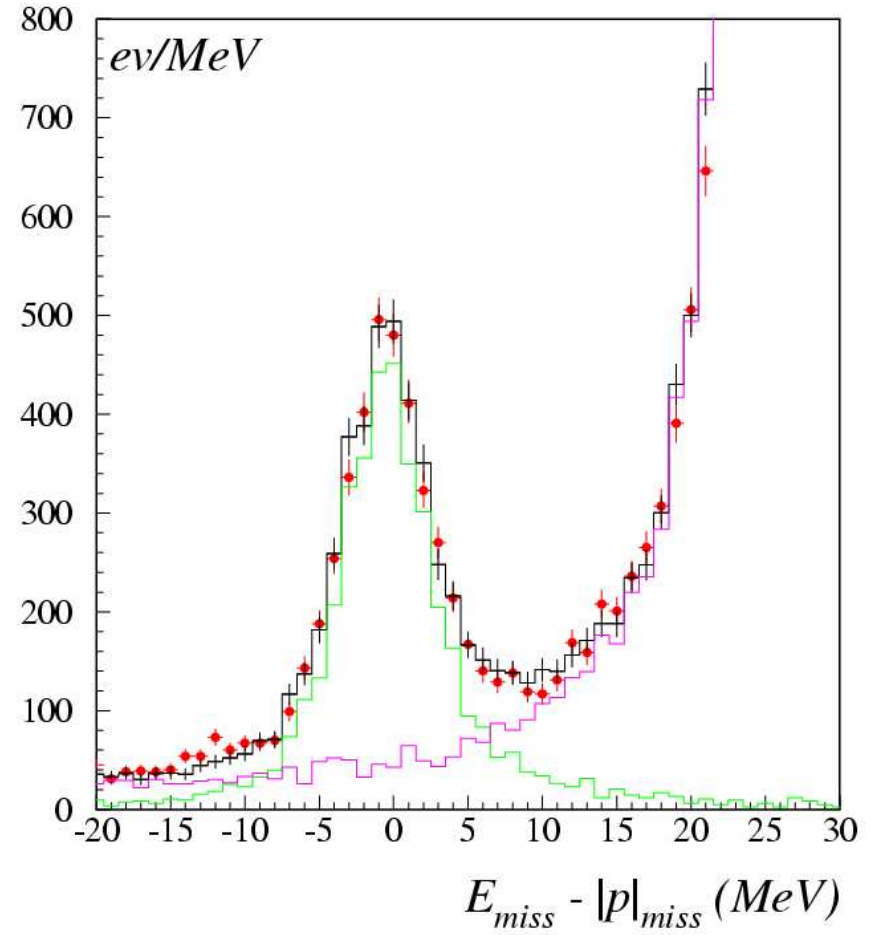
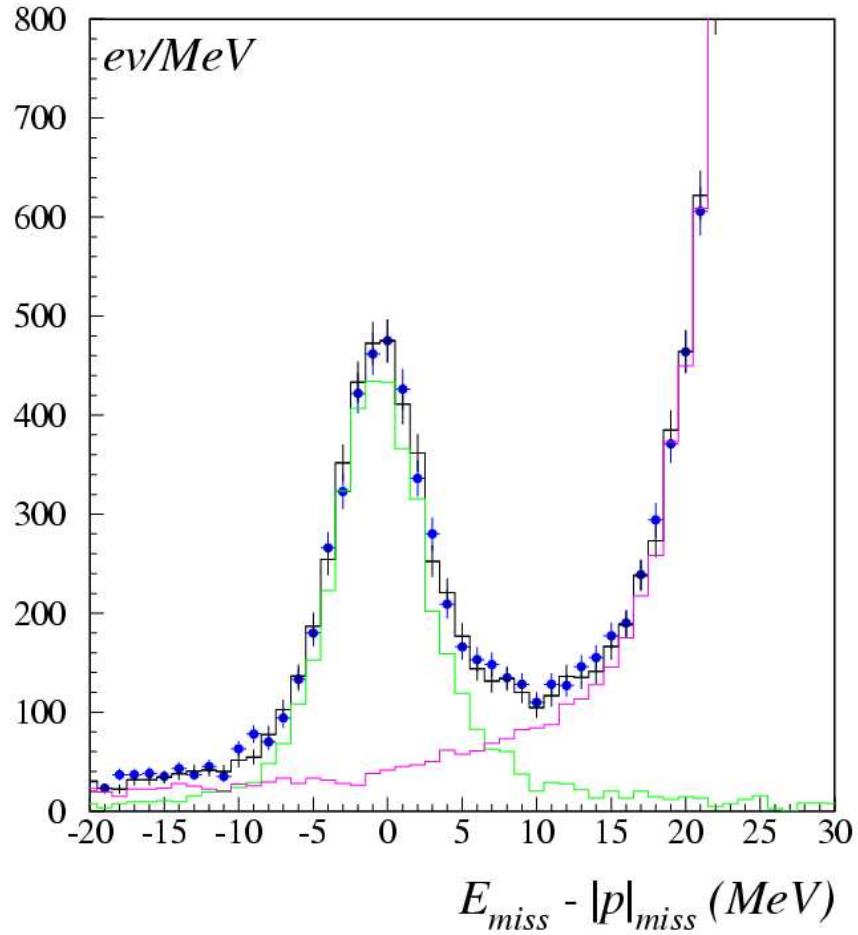
B/S = 663/3434=0.193069



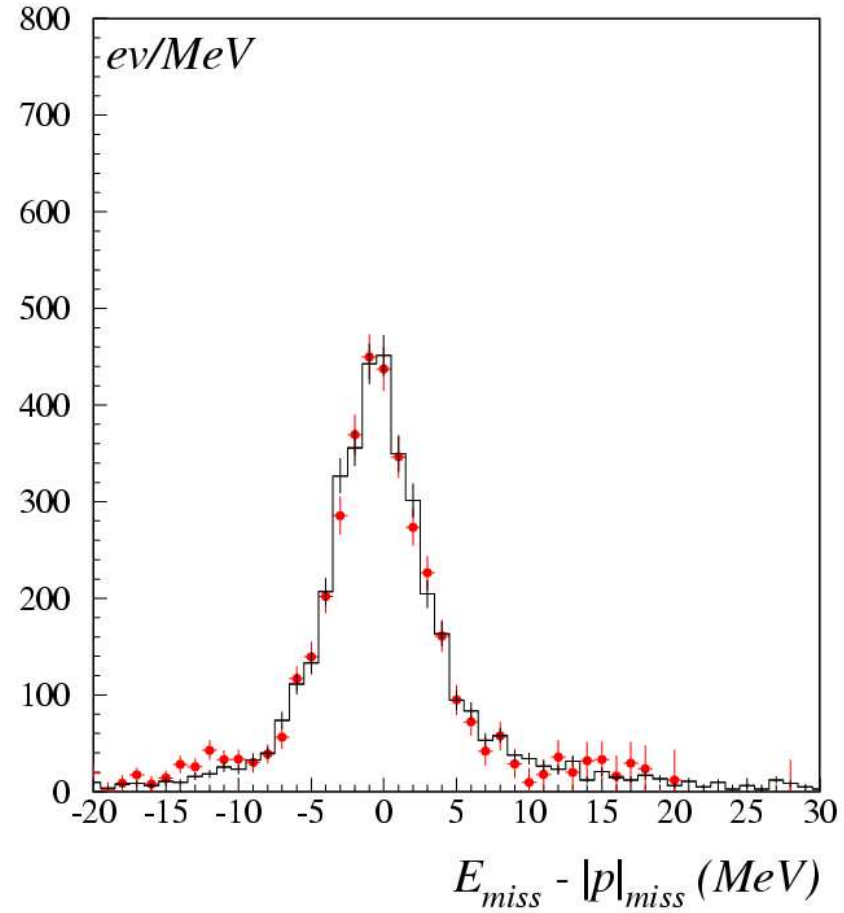
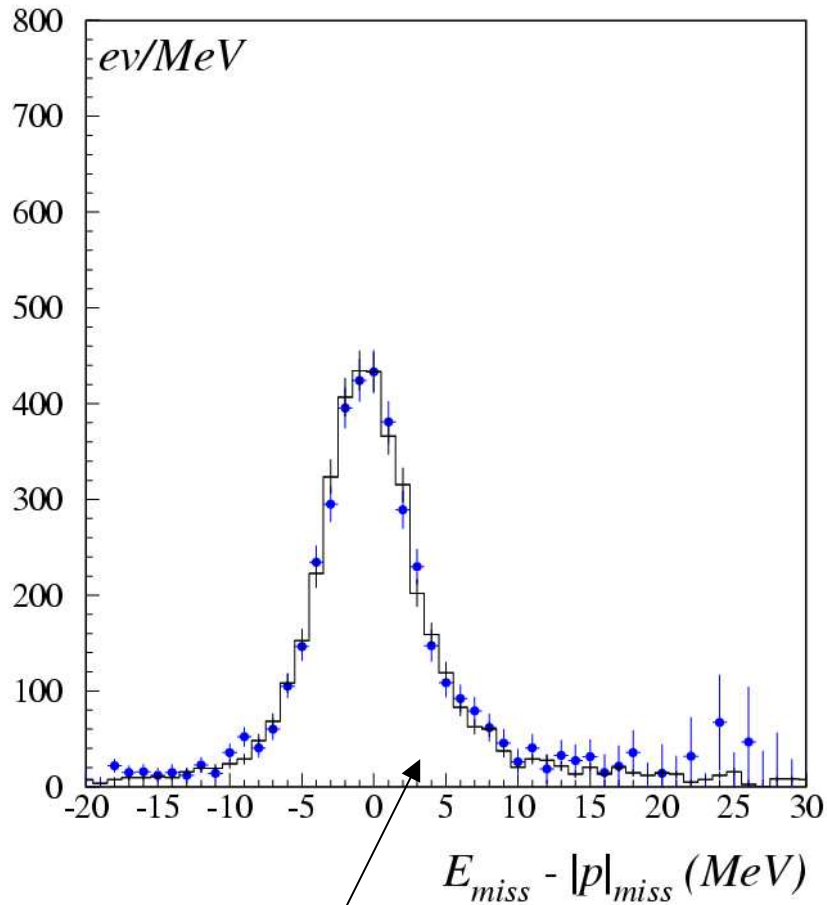
2 FITS



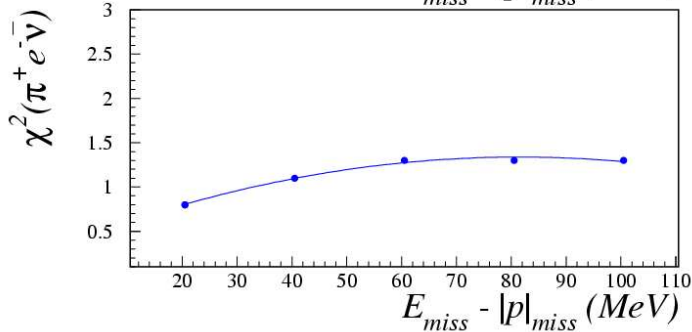
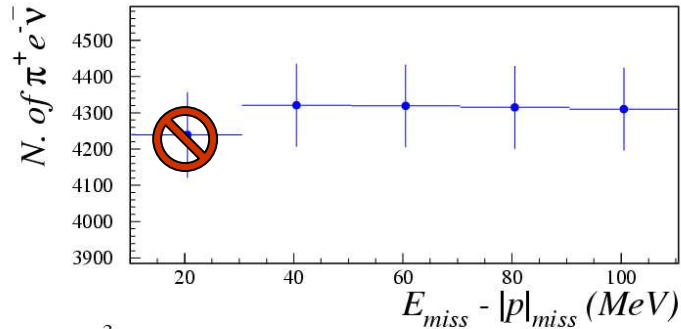
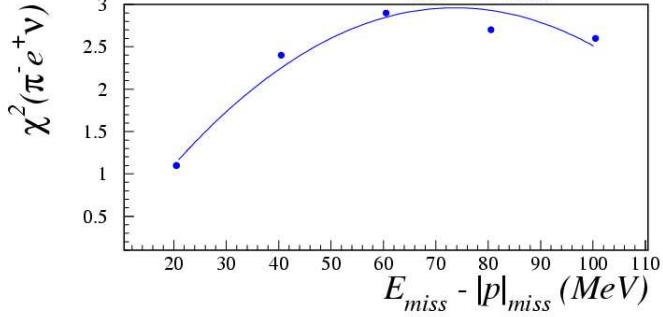
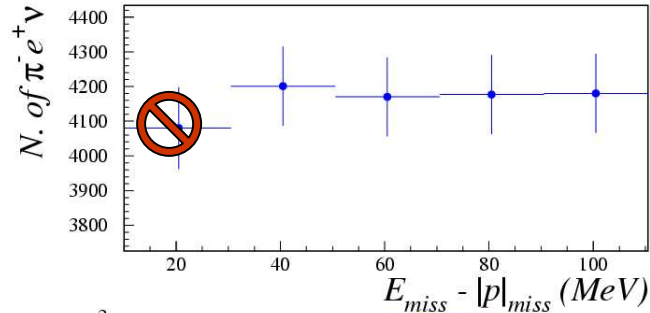
ZOOM!!



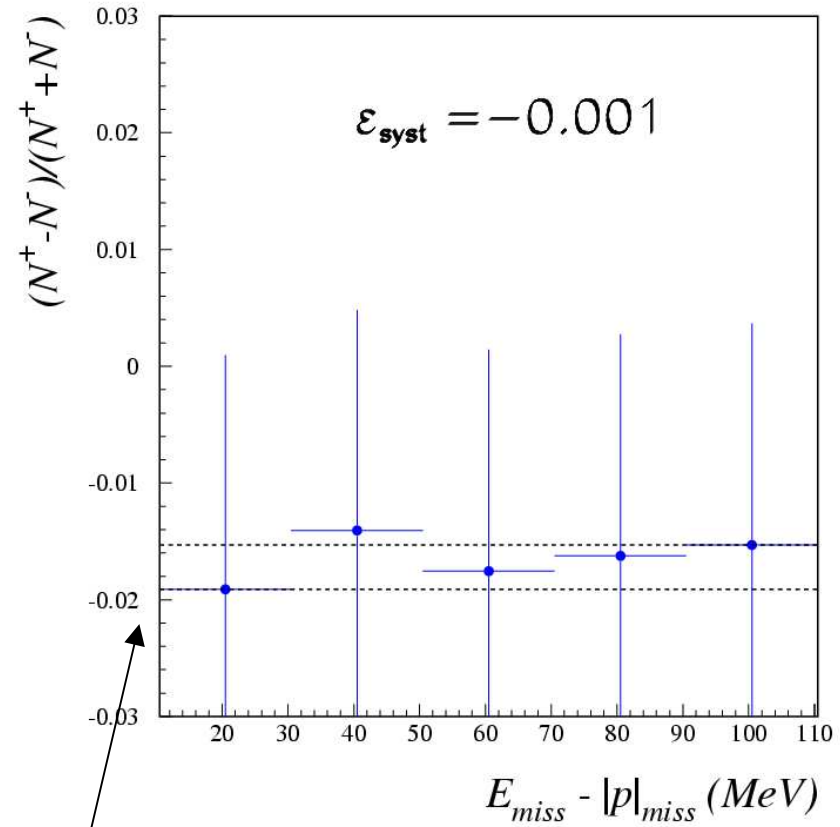
Subtracting the BKG ...



Ke3 γ have $E-p > 0$

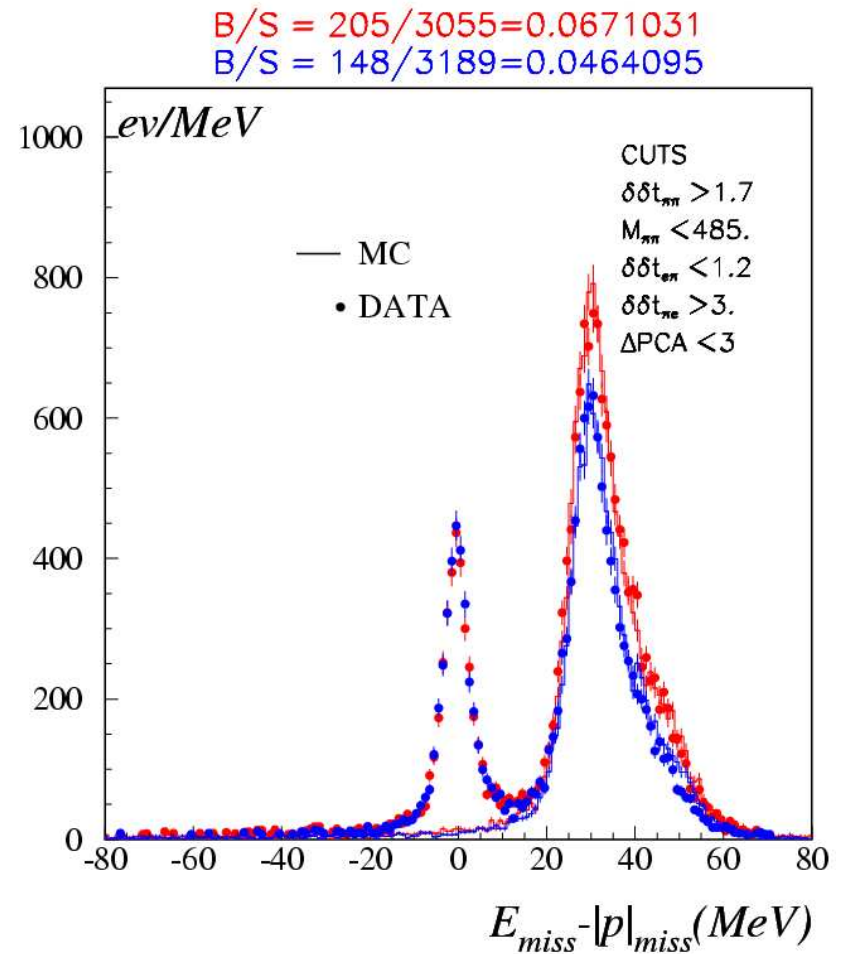
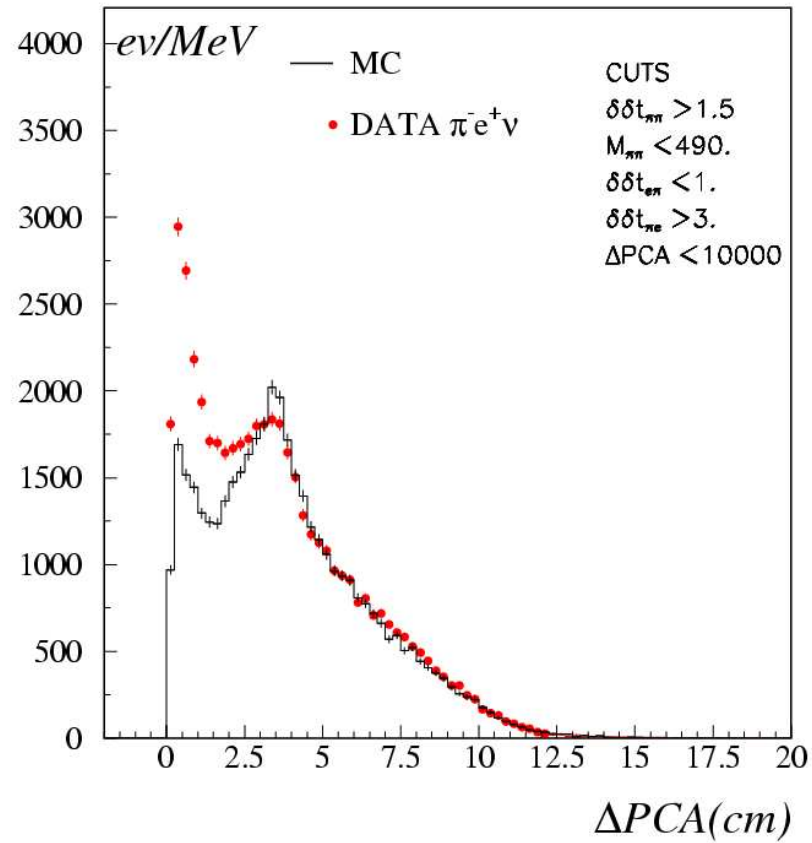


Systematical errors



Due to different selection efficiencies: $\epsilon^+ < \epsilon^-$ ($\sim 2-3\%$)

Tuning and new cuts



CONCLUSIONS

1. Good agreement between data+pezzetto and MC !!!!!!!!!!!!!!!
2. Radiative corrections included.
3. Tuning of the cuts in progress.
4. Ready to run on all 2001+2002 stat