组会报告

敖冬

Method of Steve

- Correction use D0 sweighted data and MC
- $S(t_{rec}) = f(t_{rec})g(t_{rec})\beta(t_{rec})$ fit function
- $f(t_{rec})$ MC t_{rec} distribution
- $g(t_{rec}) = \exp(-t_{rec}/\tau_{\mathrm{fit}})/\exp(-t_{rec}/\tau_{sim})$
- $\beta(t_{rec}) = 1 + \beta_0 t_{rec}$

$\beta = 1 + \beta_0 t_{rec}$

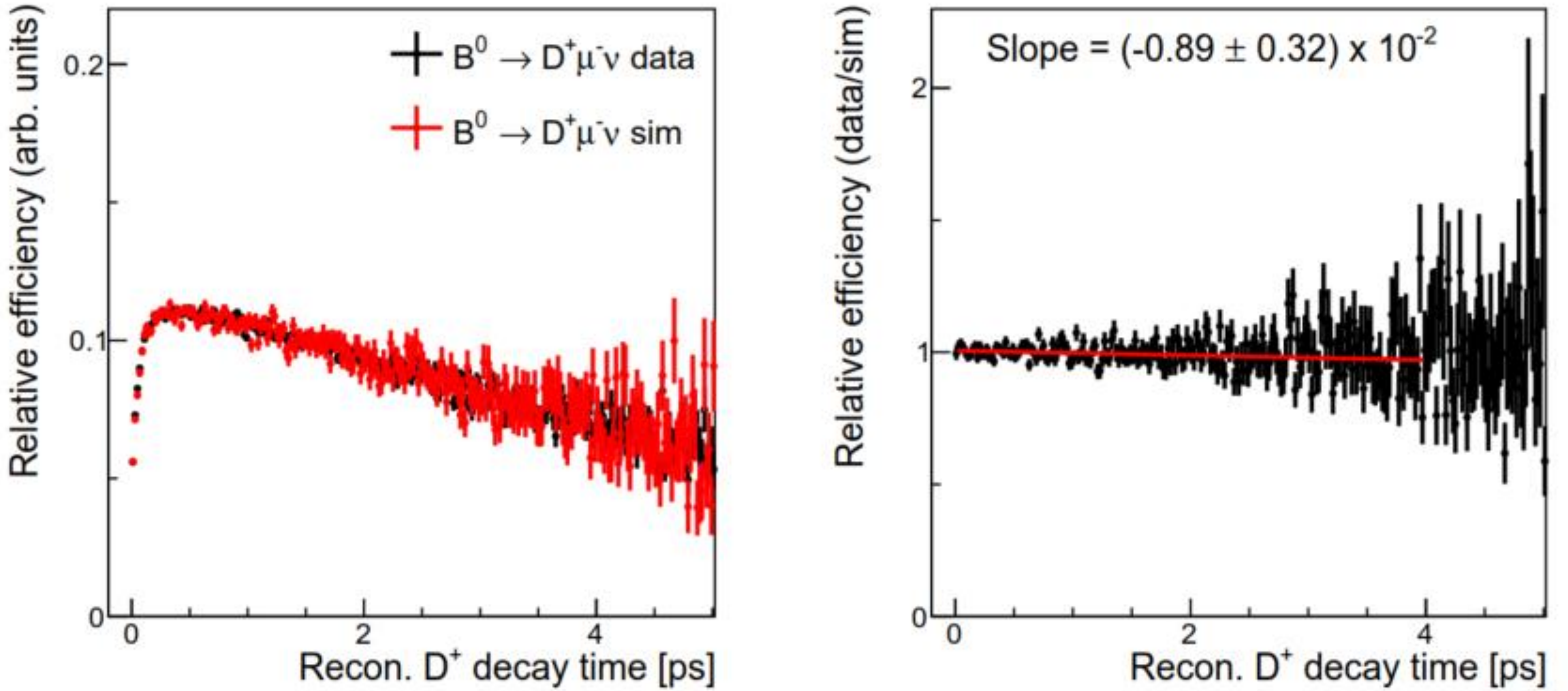
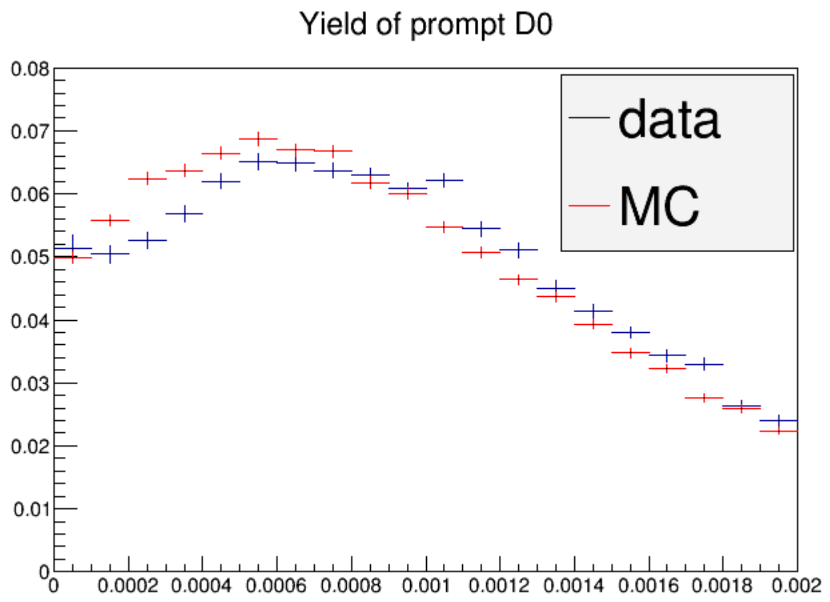
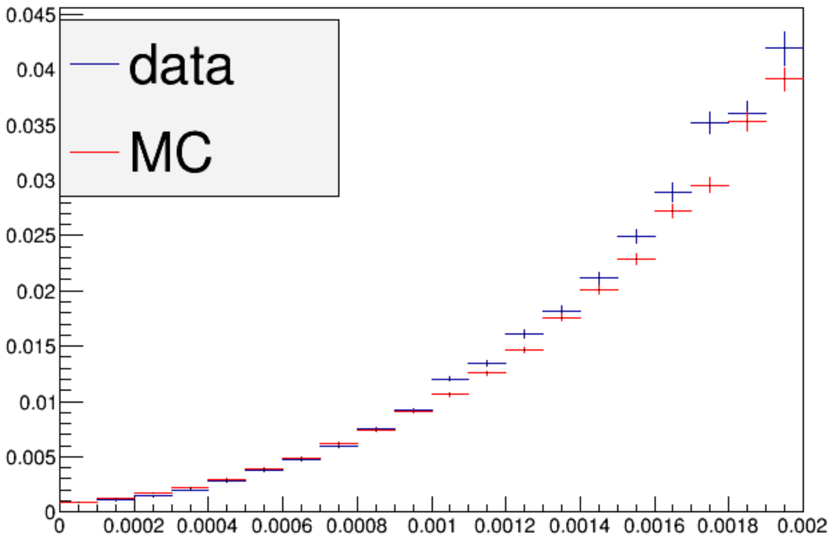


Figure 18: (Left) Comparison of the total selection efficiency as a function of the decay time in data and simulation (Right) Ratio of data to simulation, along with a linear fit to the ratio.

Comparation of D0 data and MC

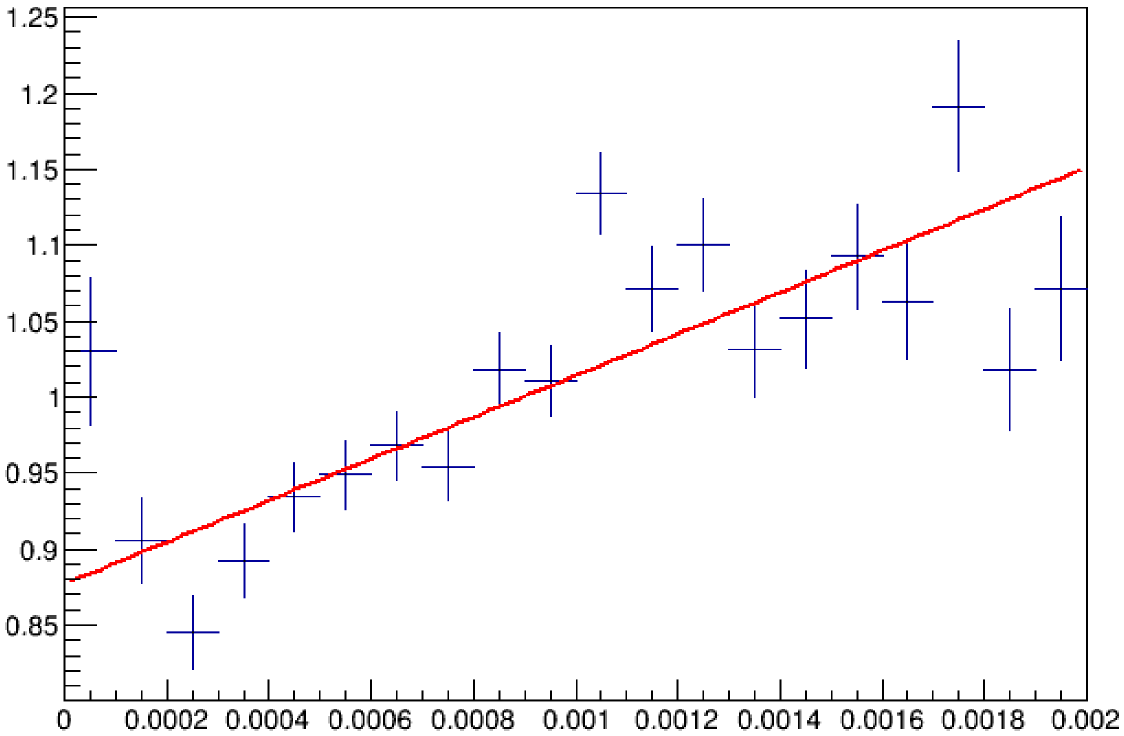


Tau distribution of D0 data compare with MC



Efficiency of D0 data compare with MC

$\beta(t_{rec}) = 1 + \beta_0 t_{rec}$



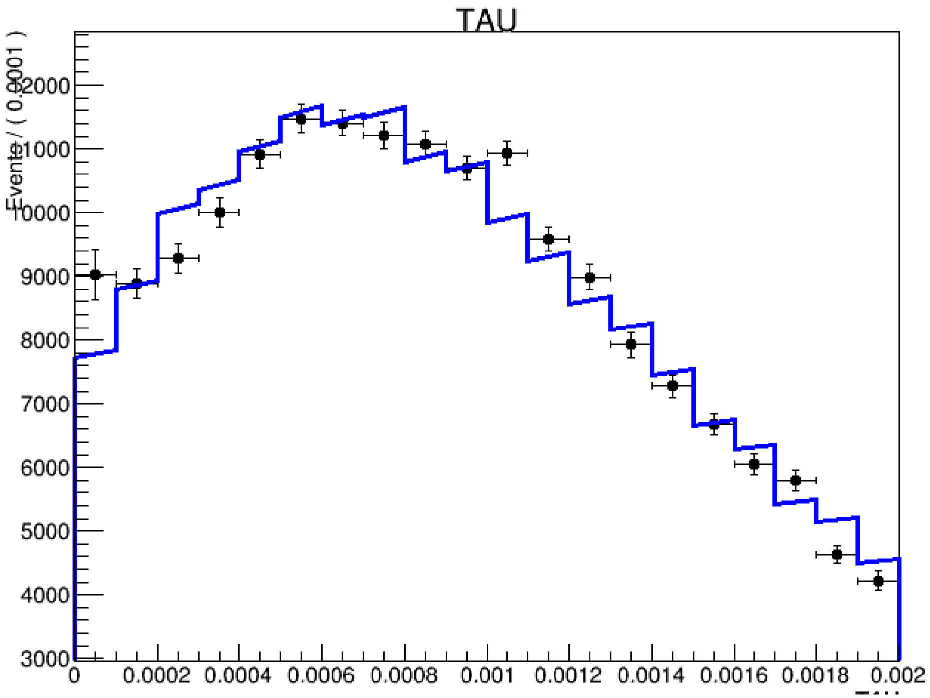
$$\frac{\varepsilon_{data}}{\varepsilon_{MC}}$$

Fit function: $a \cdot (1 + \beta_0 t_{rec})$

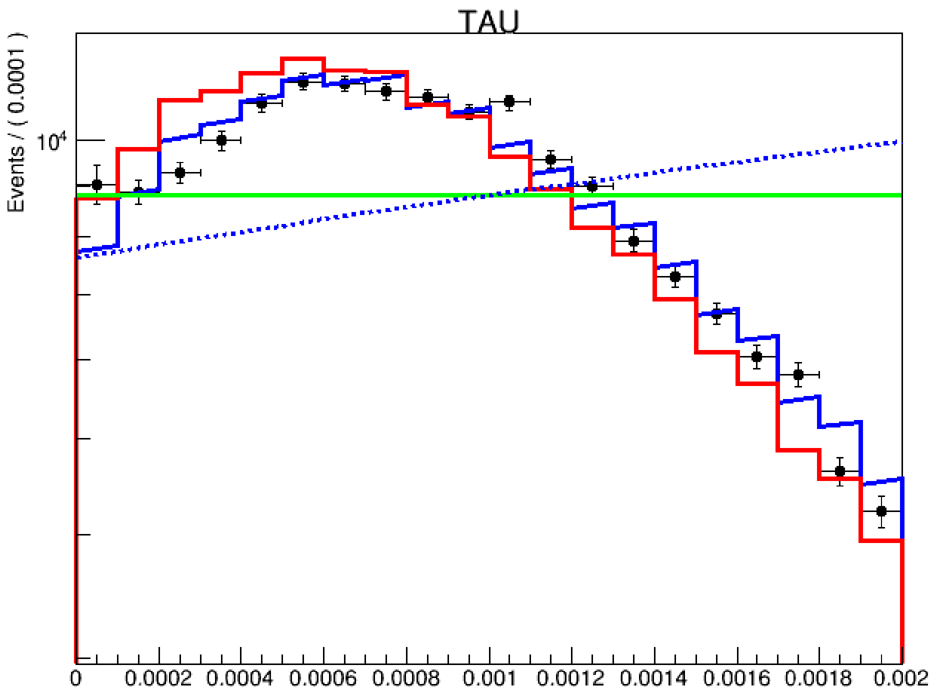
$a = 0.88 \pm 0.013$

$\beta_0 = (1.56 \pm 0.16) \times 10^2\ ns^{-1}$

χ^2/ndf=59/18



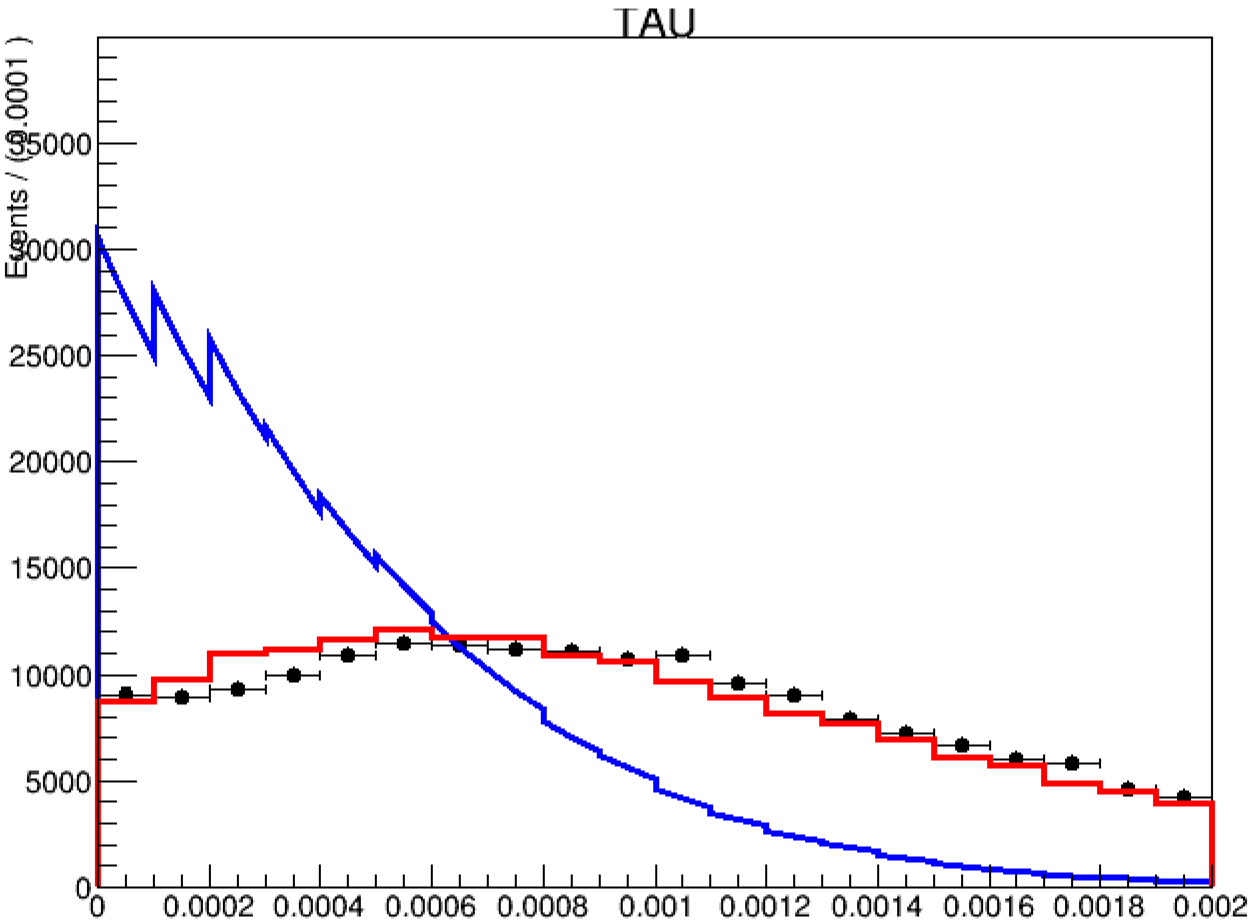
$$S(t_{rec}) = f(t_{rec})g(t_{rec})\beta(t_{rec})$$



$$S(t_{rec}) = f(t_{rec})g(t_{rec})\beta(t_{rec})$$

🟥 $f(t_{rec})$
🟩 $g(t_{rec})$
⋯ $\beta(t_{rec})$

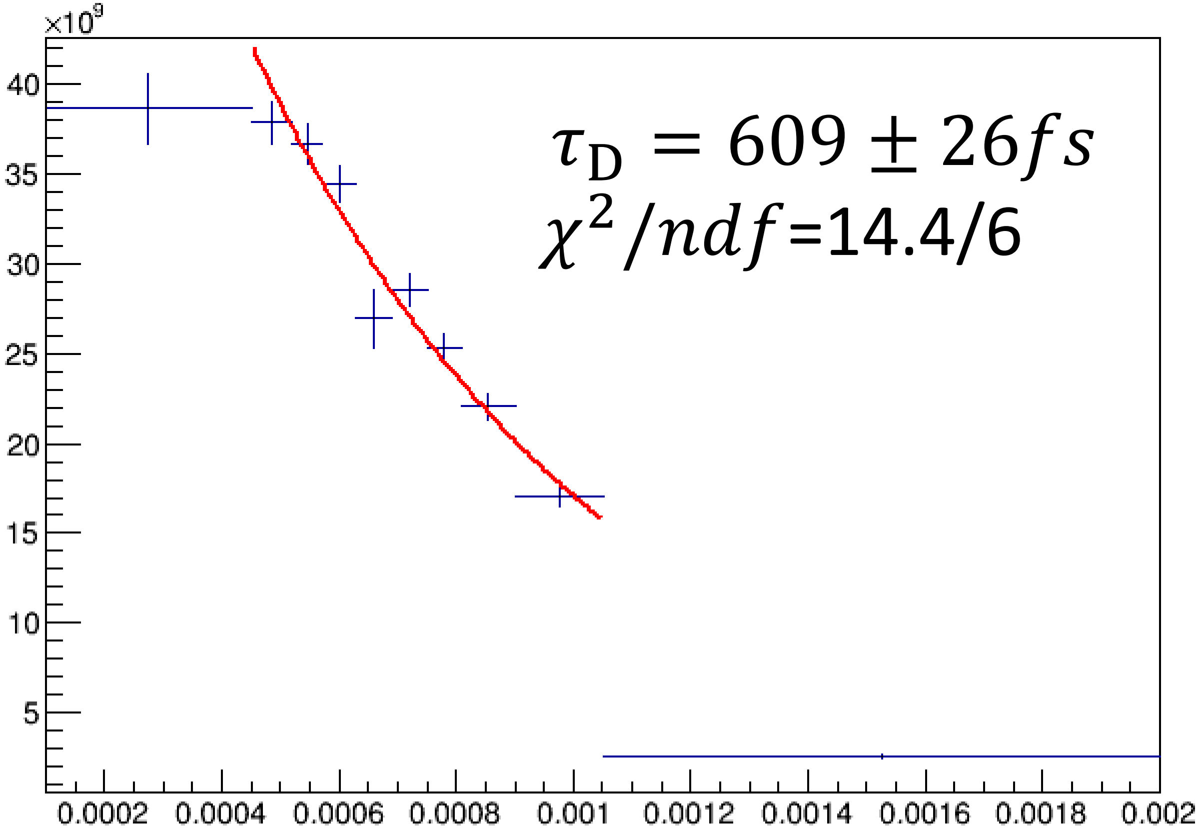
Problem



```
COVARIANCE MATRIX CALCULATED SUCCESSFULLY
FCN=-1.46162e+06 FROM HESSE     STATUS=OK              5 CALLS          35 TOTAL
                    EDM=3.06013e-08    STRATEGY= 1      ERROR MATRIX ACCURATE
 EXT PARAMETER                                INTERNAL      INTERNAL
 NO.   NAME      VALUE            ERROR       STEP SIZE       VALUE
  1  fitTAU       2.18823e-04   2.09057e-07   2.29146e-05  -8.27068e-01
                               ERR DEF= 0.5
EXTERNAL ERROR MATRIX.    NDIM=  25    NPAR=  1    ERR DEF=0.5
 4.370e-14
```

收敛到奇怪的值

Early result



$\tau_{\mathrm{D}} = 609 \pm 26fs$

χ^2/ndf=14.4/6