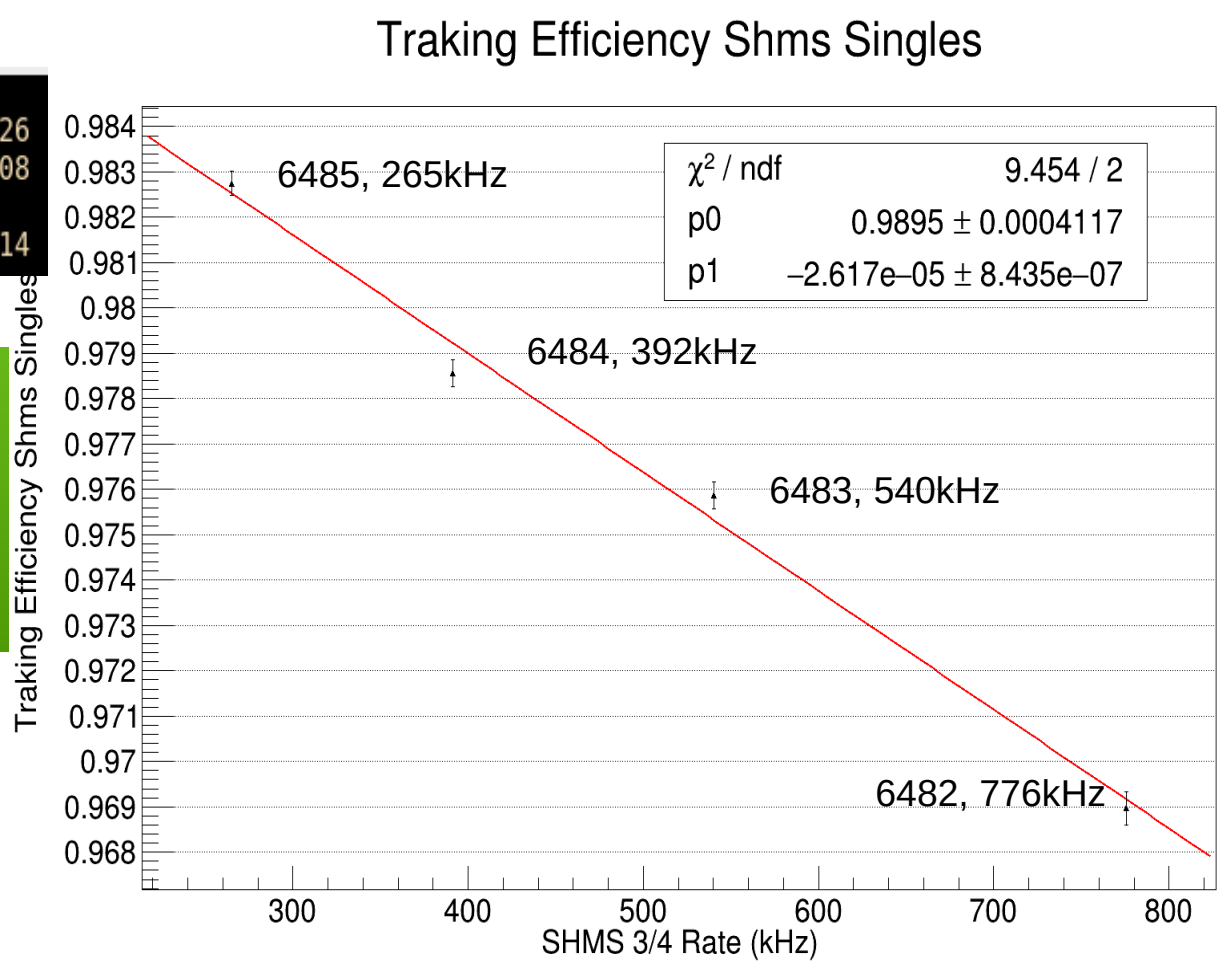
run	rate	did	should	eff	eff_err
6482	775.72	219004	226017	0.968971	0.000364726
6483	540.12	262925	269425	0.975875	0.000295608
6484	391.50	244589	249947	0.978563	0.0002897
6485	265.06	231498	235563	0.982743	0.000268314

Efficiency decreased only by 0.01377
When going from 265 kHz to 776kHz

The % change
= (0.982743-0.968971) *100/ 0.982743
= 1.40 %




```
did_cut    = goodscinhit==1 && betanotrack > 0.7 && betanotrack < 1.4   && pcaletotnorm>0.7 && pcaletotnorm<1.4 &&pdcntrack>0.0;
should_cut = goodscinhit==1 && betanotrack > 0.7 && betanotrack < 1.4   && pcaletotnorm>0.7 && pcaletotnorm<1.4;
```

Tanja Elastics(HMS)	our singles (SHMS)	rate (kHz)
0.9710	0.968	780
0.9745	0.975	540
0.980	0.978	400
0.9805	0.982	265
0.988	0.984	0

T.Horn. E.Christy, E. Sigbefia

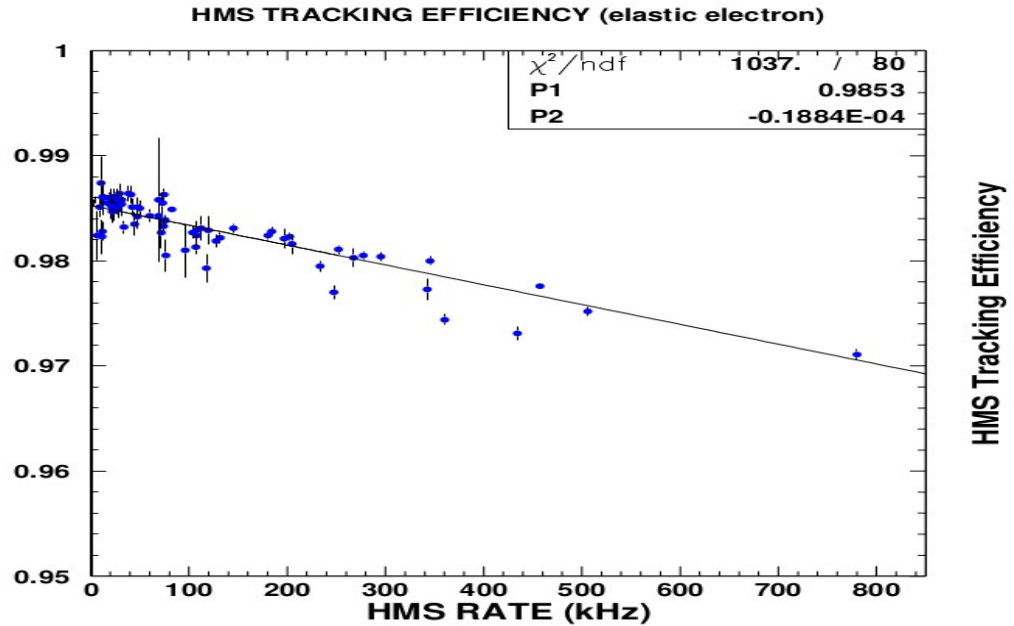
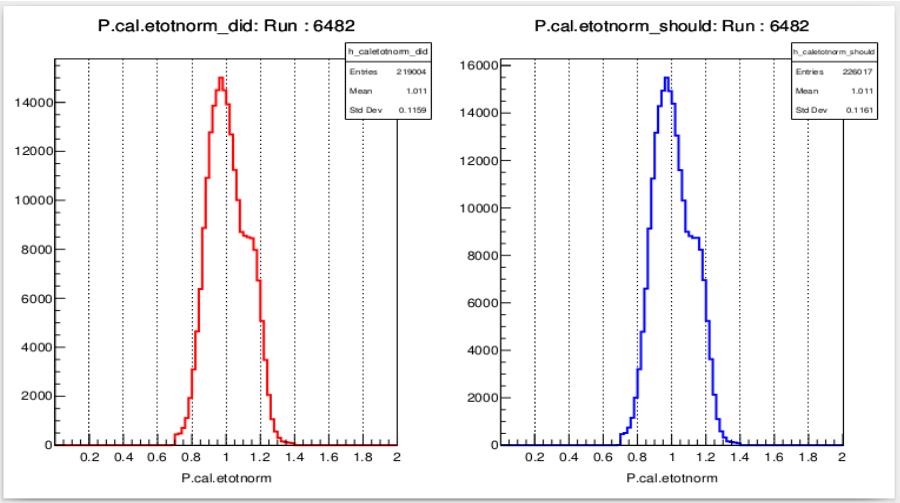
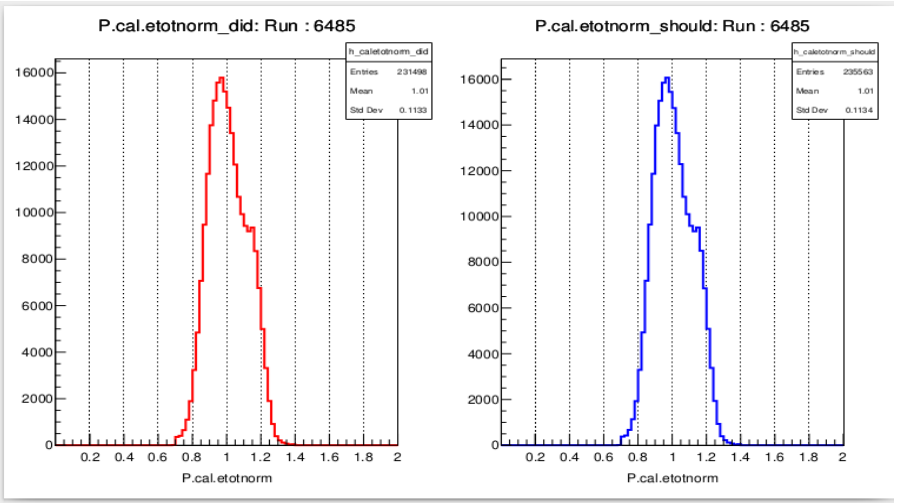
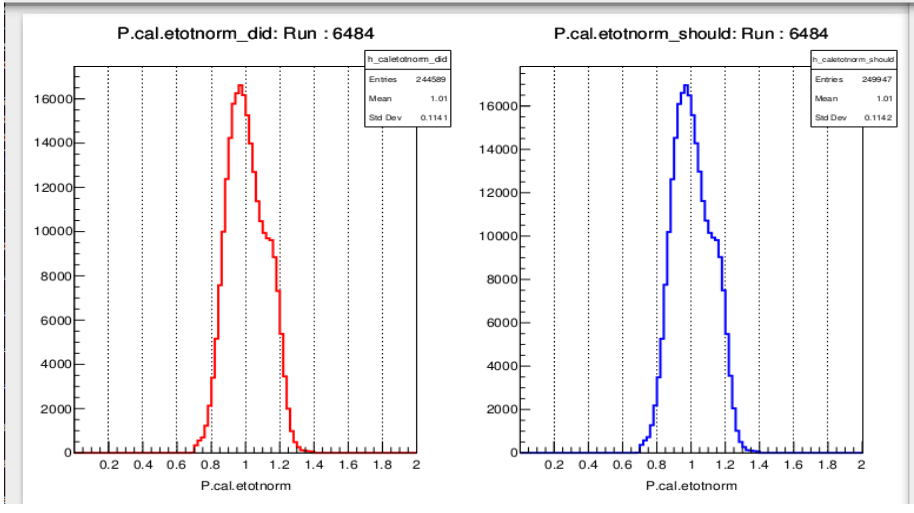


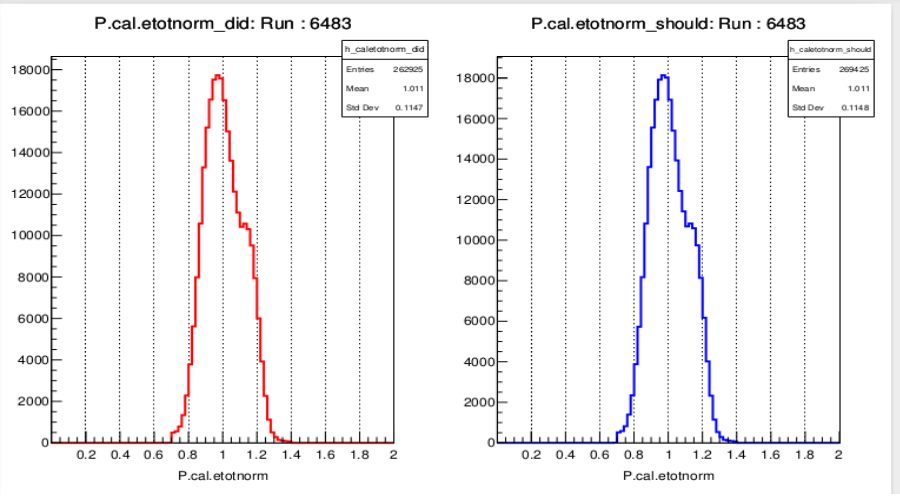
FIG. 1: *The HMS tracking efficiency versus rate for Fpi2. The zero-rate tracking efficiency is 98.8 %.*

RED = DID; BLUE = SHOULD



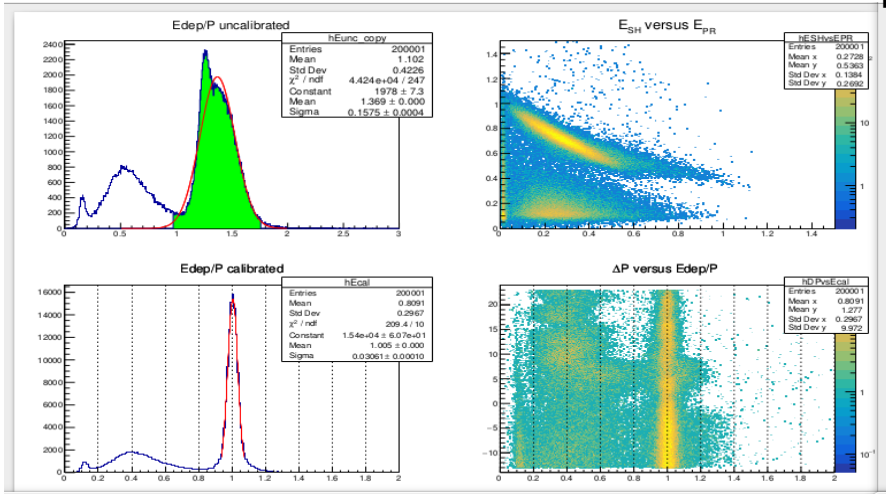




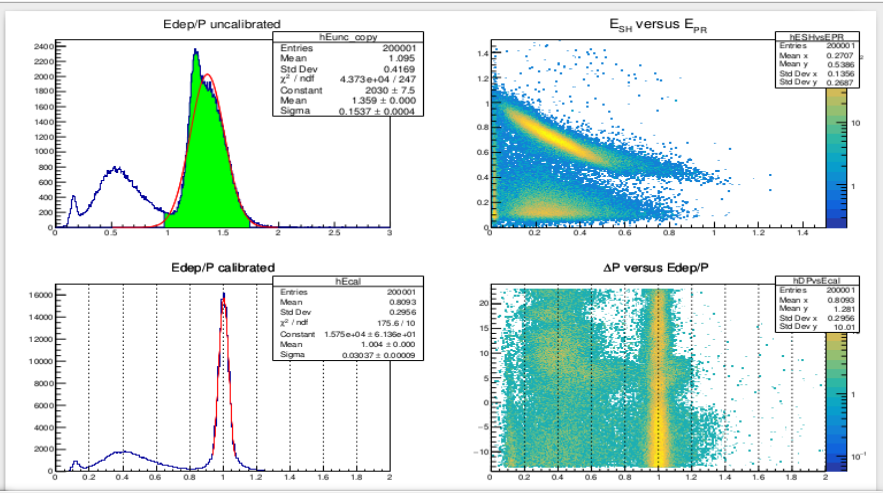


Calibration plots

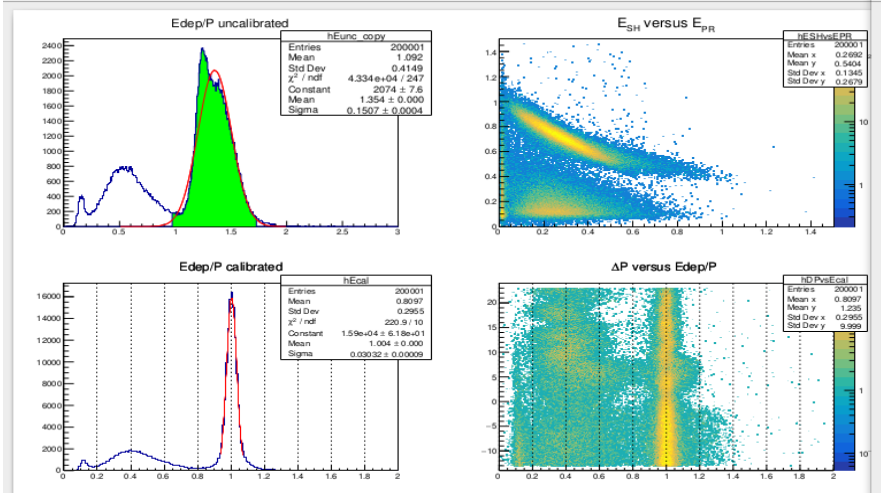
6482



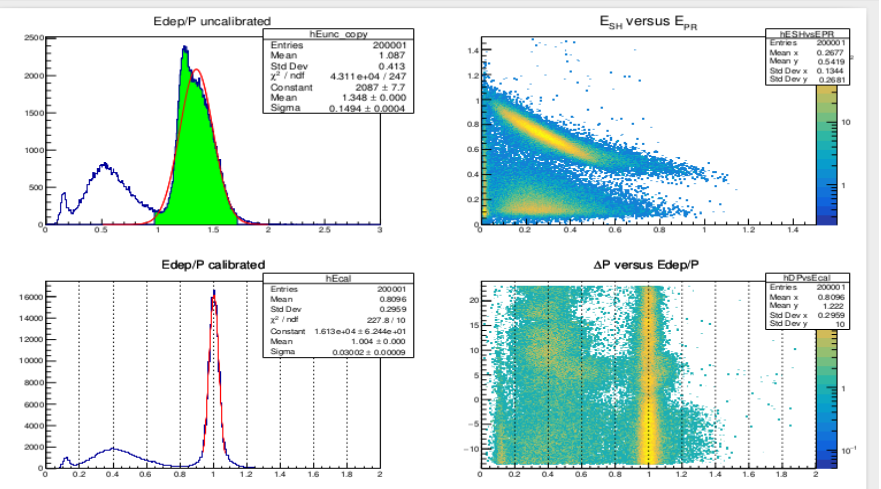
6483



6484



6485



run	rate	did	should	eff	eff_err
6482	775.72	219004	226017	0.968971	0.000364726
6483	540.12	262925	269425	0.975875	0.000295608
6484	391.50	244589	249947	0.978563	0.0002897
6485	265.06	231498	235563	0.982743	0.000268314

Selecting electron sample by using 0.7<P.cal.etotnorm<1.4

run	rate	did	should	eff	eff_err
6482	775.72	127370	131323	0.969899	0.000471504
6483	540.12	153121	156838	0.9763	0.000384093
6484	391.50	142961	145982	0.979306	0.000372593
6485	265.06	135887	138192	0.98332	0.000344509

Selecting cleaner electron sample by using 0.9<P.cal.etotnorm<1.1

Though, the events decreased by about 100k, the efficiency remained nearly the same.

Run 6482

P.cal.etottracknorm {P.gtr.dp>-10&&P.gtr.dp<20&&P.gtr.beta>0.5&&P.gtr.beta<1.5}