

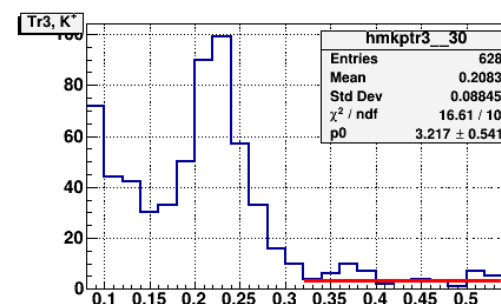
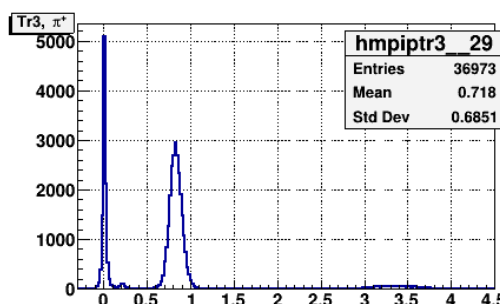
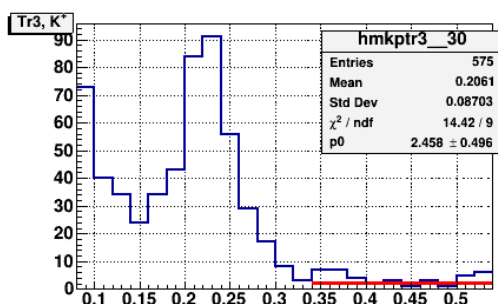
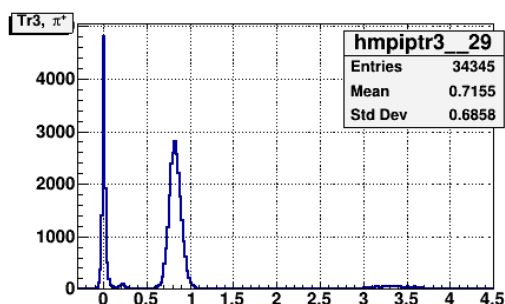
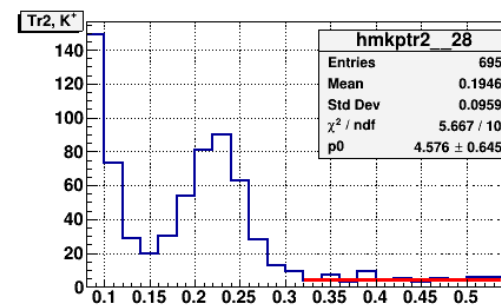
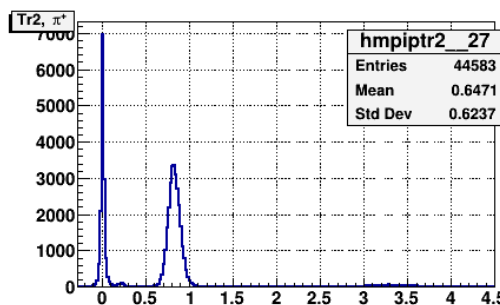
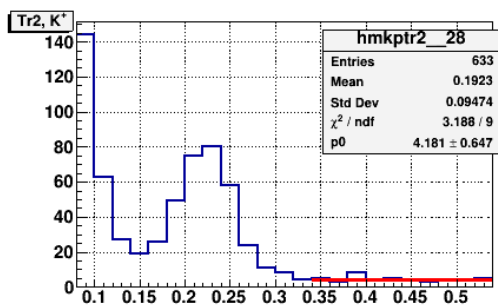
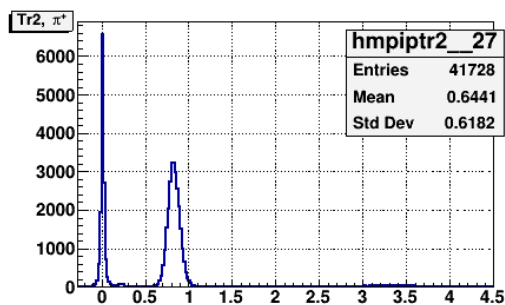
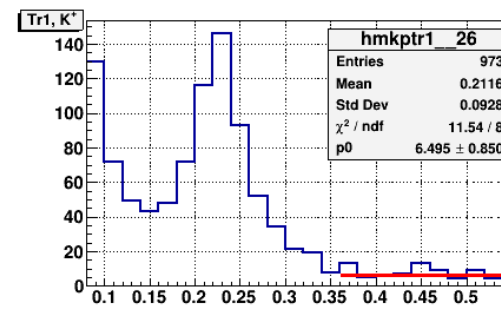
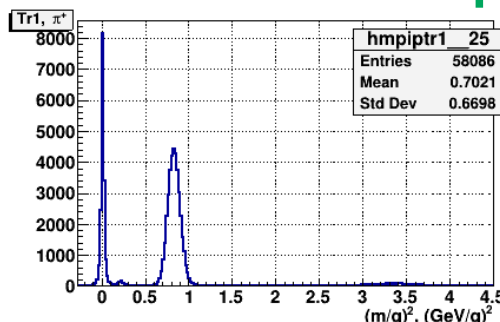
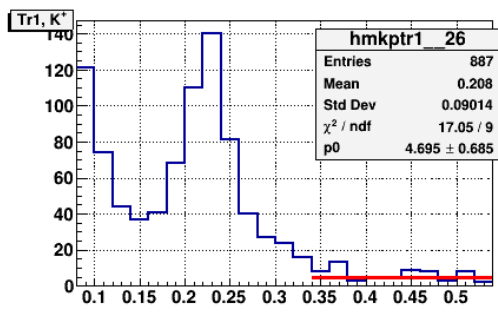
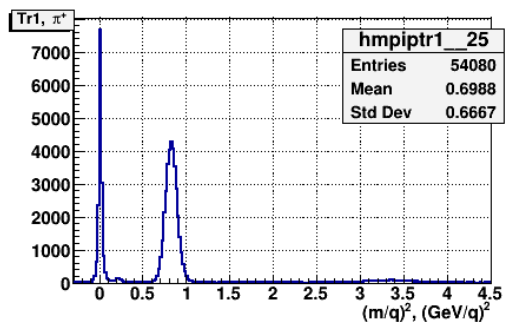
BM@N π^+ and p residual corrections. CSC. TOF400. Runs 4570-4704

- Unidentified particles background estimation
- Number of particles (π^+ , K^+ , p , d) for π^+ and p corrections (2 and 2.5 σ)
- Tracks that were identically identified with both corrections
- Background spectrum $(m/q)^2$

Unidentified particles background estimation

π^+ corr

p corr



- Fit pol0 at $0.34 < (m/q)^2 < 0.54$

Unidentified particles background estimation

Tr1		Corrections type		Tr2		Corrections type		Tr3		Corrections type	
		π^+	p			π^+	p			π^+	p
bkg/ signal	π^+	0.006	0.007	bkg/ signal	π^+	0.006	0.006	bkg/ signal	π^+	0.005	0.006
	K^+	0.083	0.107		K^+	0.128	0.124		K^+	0.064	0.080

- $bkg = nbins * p_0$
- $signal = Integral(bin_{left}, bin_{right}) - bkg$
- **bkg/signal** a little **large** for **p**-corrections

Number of particles (π^+ , K^+ , p , d) for π^+ and p corrections (2 and 2.5σ)

Tr1	Corrections type (2σ)		$\Delta N/N$	ΔN	
	π^+	p			
N of	π^+	15399	16475	0.07	1076
	K^+	547	601	0.09	54
	p	118374	120791	0.020	2417
	d	8271	8288	0.002	17

Tr1	Corrections type (2.5σ)		$\Delta N/N$	ΔN	
	π^+	p			
N of	π^+	15738	16795	0.06	1057
	K^+	566	615	0.08	49
	p	122141	123834	0.014	1693
	d	8524	8502	-0.003	-22

- The number of π^+ and K^+ increases by almost the same value for π^+ and p -corrections when we use 2.5σ

Tracks that were identically identified with both corrections

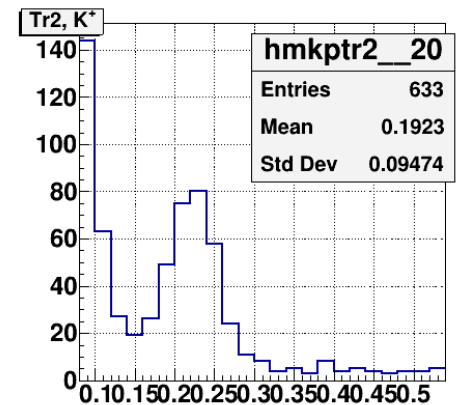
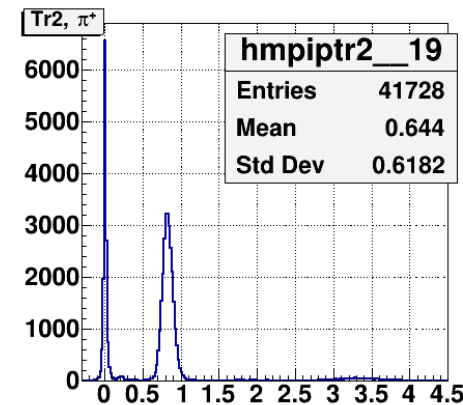
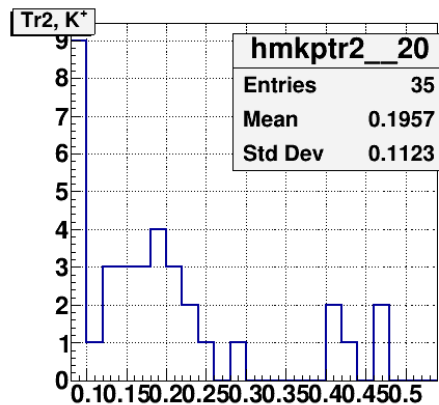
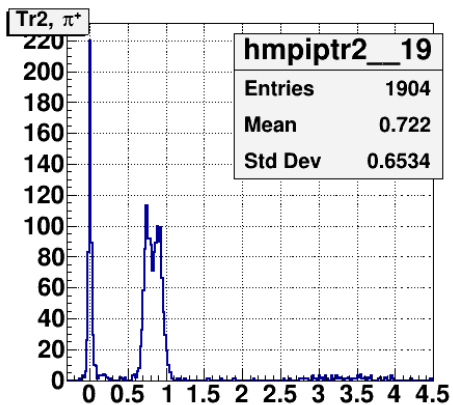
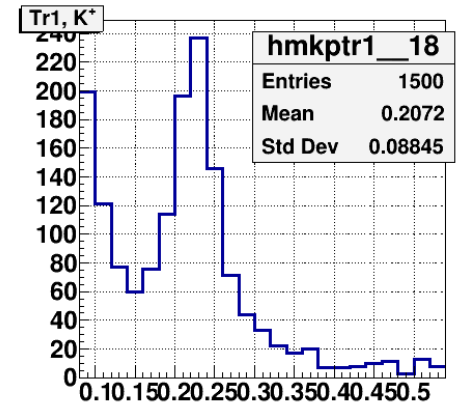
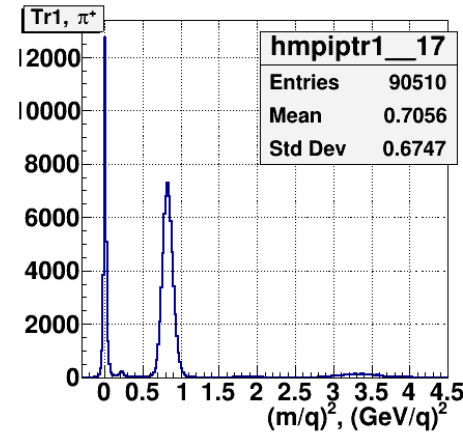
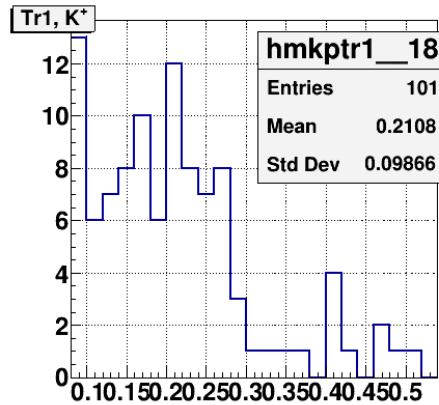
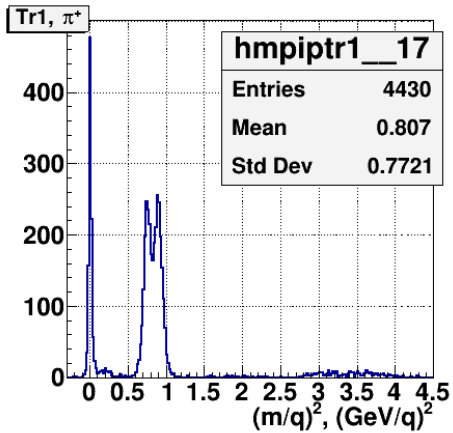
All Tr	Corrections type			$\Delta N/N, \%$
	π^+	p		
% of common	π^+	99.5	93.1	7
	K^+	97.8	89.3	9

- $\Delta N = N_{p\text{-corr}} - N_{\pi\text{-corr}}$
- $N = (N_{p\text{-corr}} - N_{\pi\text{-corr}})/2$

Background spectrum $(m/q)^2$

$$3\sigma < |dx_{\text{TOF400}}| < 5\sigma$$

$$|dx_{\text{TOF400}}| < 2\sigma$$

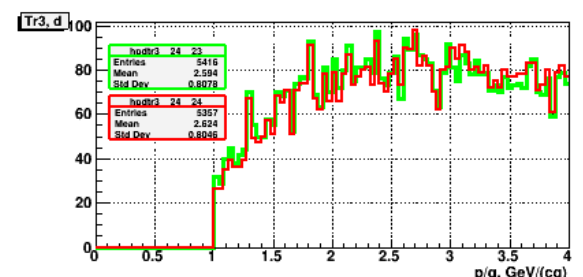
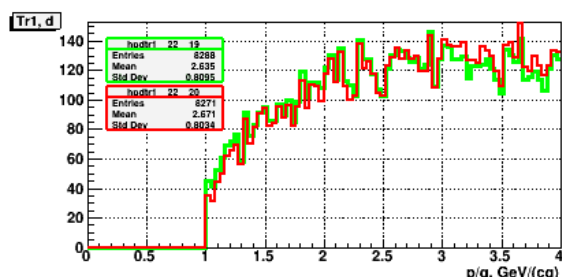
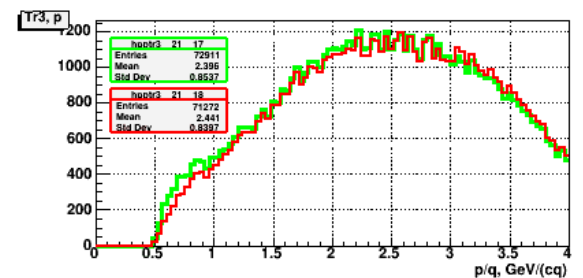
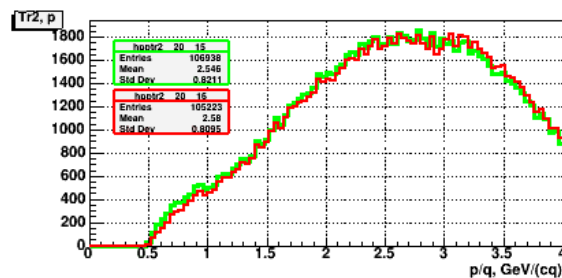
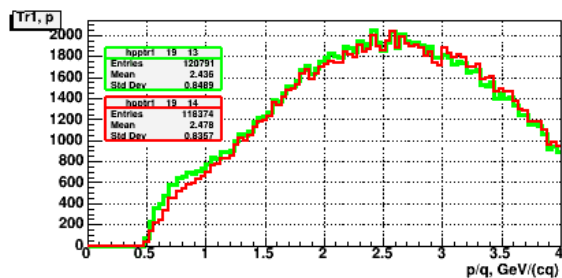
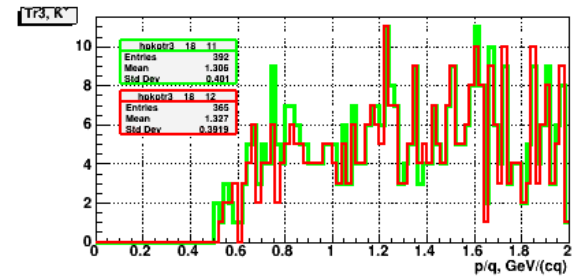
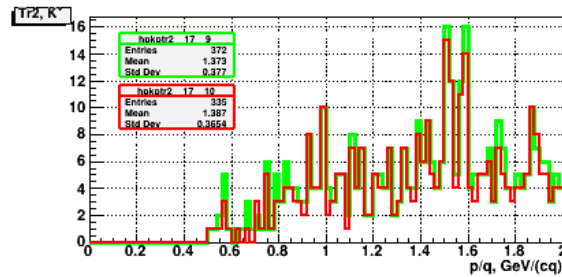
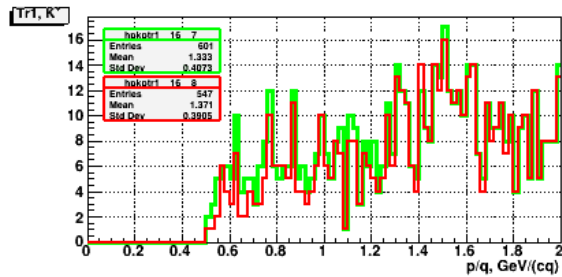
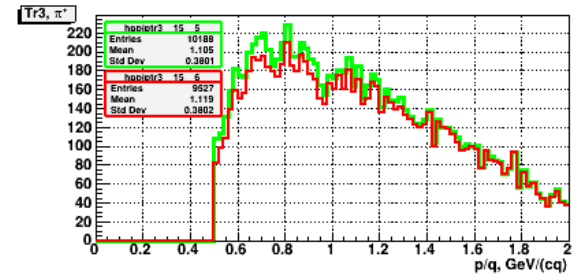
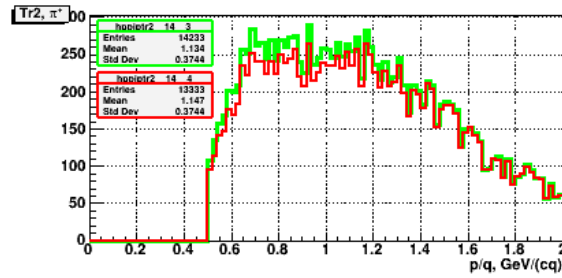
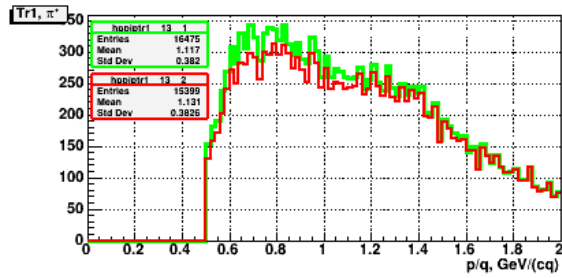


- The background spectrum is **similar** to the signal spectrum



Backup

BM@N P spectra (π^+ , K^+ , p , d) for π^+ and p corrections



BM@N P spectra (π^+ , K^+ , p, d) for π^+ and p corrections

Tr1	Corrections type			
	π^+	p		$\Delta N/N$
N of	π^+	15399	16475	0.07
	K^+	547	601	0.09
	p	118374	120791	0.02
	d	8271	8288	0.002

Tr2	Corrections type			
	π^+	p		$\Delta N/N$
N of	π^+	13333	14233	0.07
	K^+	335	372	0.10
	p	105223	106938	0.02
	d	5226	5262	0.007

Tr3	Corrections type			
	π^+	p		$\Delta N/N$
N of	π^+	9527	10188	0.07
	K^+	365	392	0.07
	p	71272	72911	0.02
	d	5357	5416	0.011

- Number of identified particles of each type **larger** for p corrections

Number of particles (π^+ , K^+ , p, d) for π^+ and p corrections (2 and 2.5σ)

Tr2		Corrections type (2σ)		$\Delta N/N$	ΔN
		π^+	p		
N of	π^+	13333	14233	0.07	900
	K^+	335	372	0.10	37
	p	105223	106938	0.02	1715
	d	5226	5262	0.007	36

Tr2		Corrections type (2.5σ)		$\Delta N/N$	ΔN
		π^+	p		
N of	π^+	13615	14479	0.06	864
	K^+	344	378	0.09	34
	p	108453	109468	0.009	1015
	d	5384	5402	0.003	18

Number of particles (π^+ , K^+ , p , d) for π^+ and p corrections (2 and 2.5σ)

Tr3		Corrections type (2σ)		$\Delta N/N$	ΔN
		π^+	p		
N of	π^+	9527	10188	0.07	661
	K^+	365	392	0.07	27
	p	71272	72911	0.02	1639
	d	5357	5416	0.011	59

Tr3		Corrections type (2.5σ)		$\Delta N/N$	ΔN
		π^+	p		
N of	π^+	9725	10389	0.07	664
	K^+	379	406	0.07	27
	p	73485	74696	0.016	1211
	d	5542	5564	0.004	22