

zVertex Study

- Cuts were integrated into the analysis such that there were 6 different sets analyzed:
 - Minbias (with nuclear excitation)
 - $z\text{Vertex} > 0$ and $0.1 < y < 0.5$
 - $z\text{Vertex} > 0$ and $0.5 < y < 1.0$
 - $z\text{Vertex} < 0$ and $0.1 < y < 0.5$
 - $z\text{Vertex} < 0$ and $0.1 < y < 0.5$
 - Topology (without nuclear excitation)
 - $z\text{Vertex} > 0$ and $0.1 < y < 0.5$
 - $z\text{Vertex} > 0$ and $0.5 < y < 1.0$
 - $z\text{Vertex} < 0$ and $0.1 < y < 0.5$
 - $z\text{Vertex} < 0$ and $0.1 < y < 0.5$

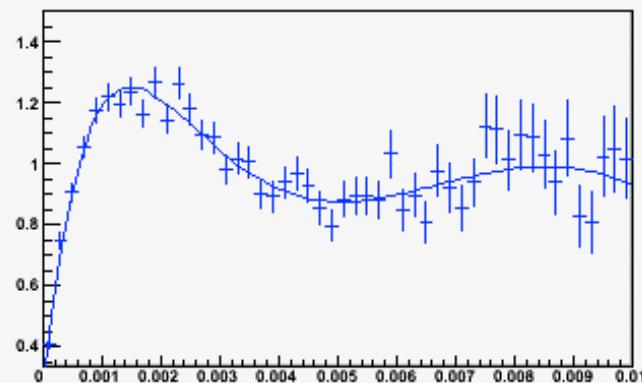
The Interference / NoInterference ratio is computed from the MC sets generated with $R_{\text{nuc}} = 6.8 \text{ fm}$ for the Minbias and $R_{\text{nuc}} = 8.0 \text{ fm}$ for the Topology set.

The function

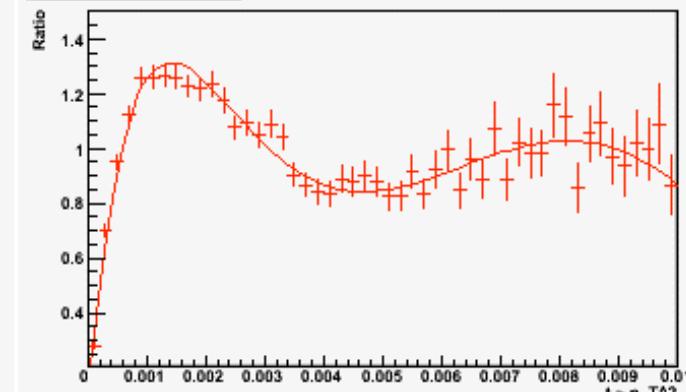
$$R(t) = a + \frac{b}{(t + 0.012)} + \frac{c}{(t + 0.012)^2} + \frac{d}{(t + 0.012)^3} + \frac{e}{(t + 0.012)^4}$$

was used to fit the Interference / NoInterference ratio.

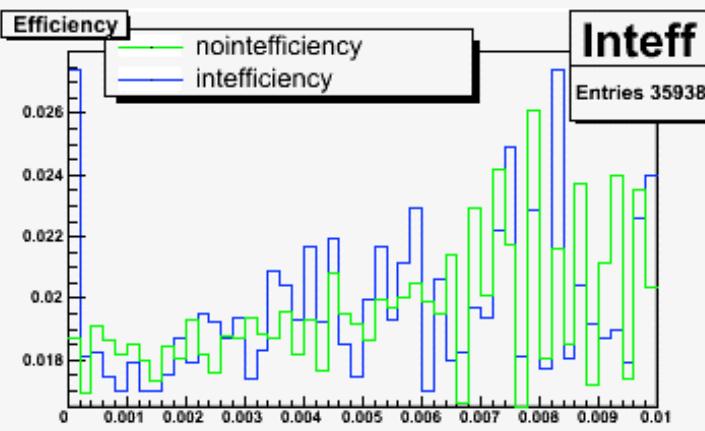
Int/Noint- GEANT



Int/Noint STARlight



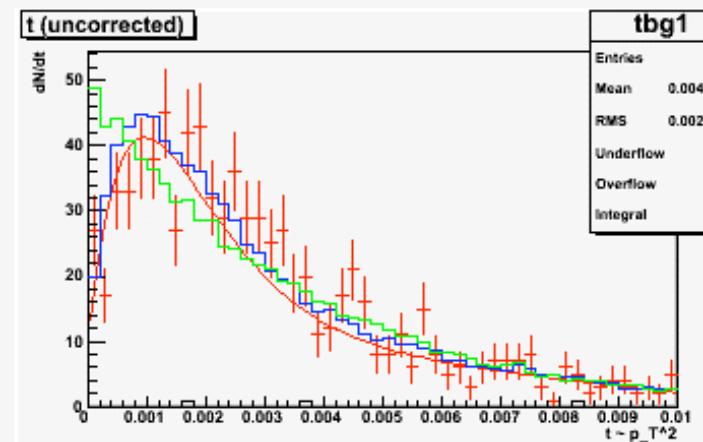
Efficiency



Inteff

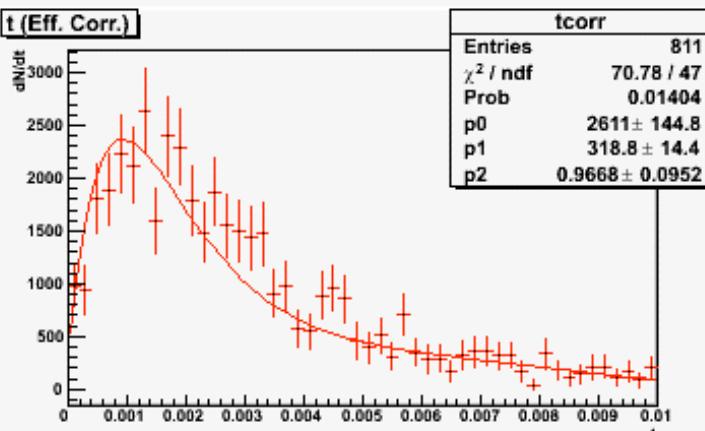
Entries 35938

t (uncorrected)

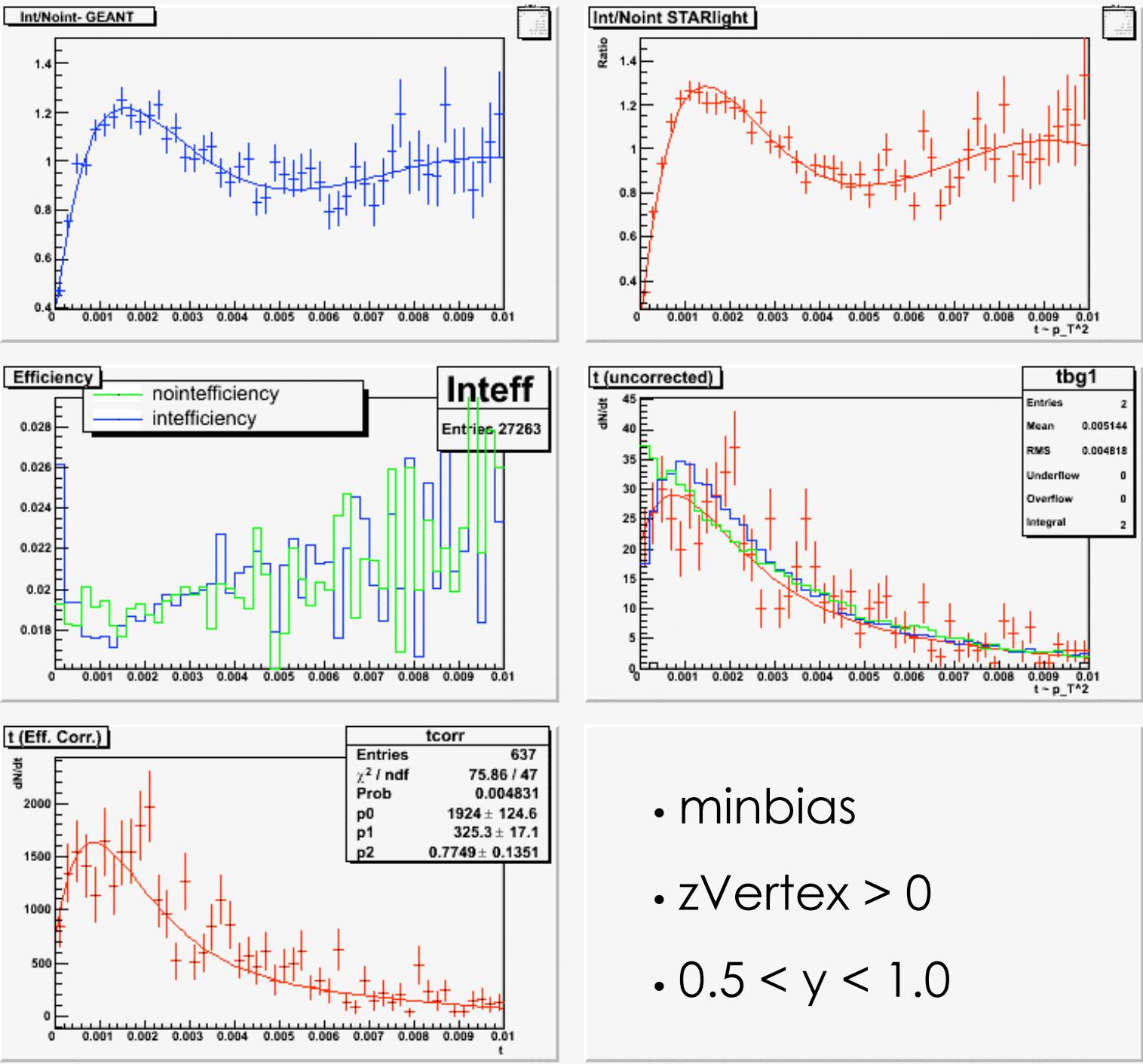


tbgl

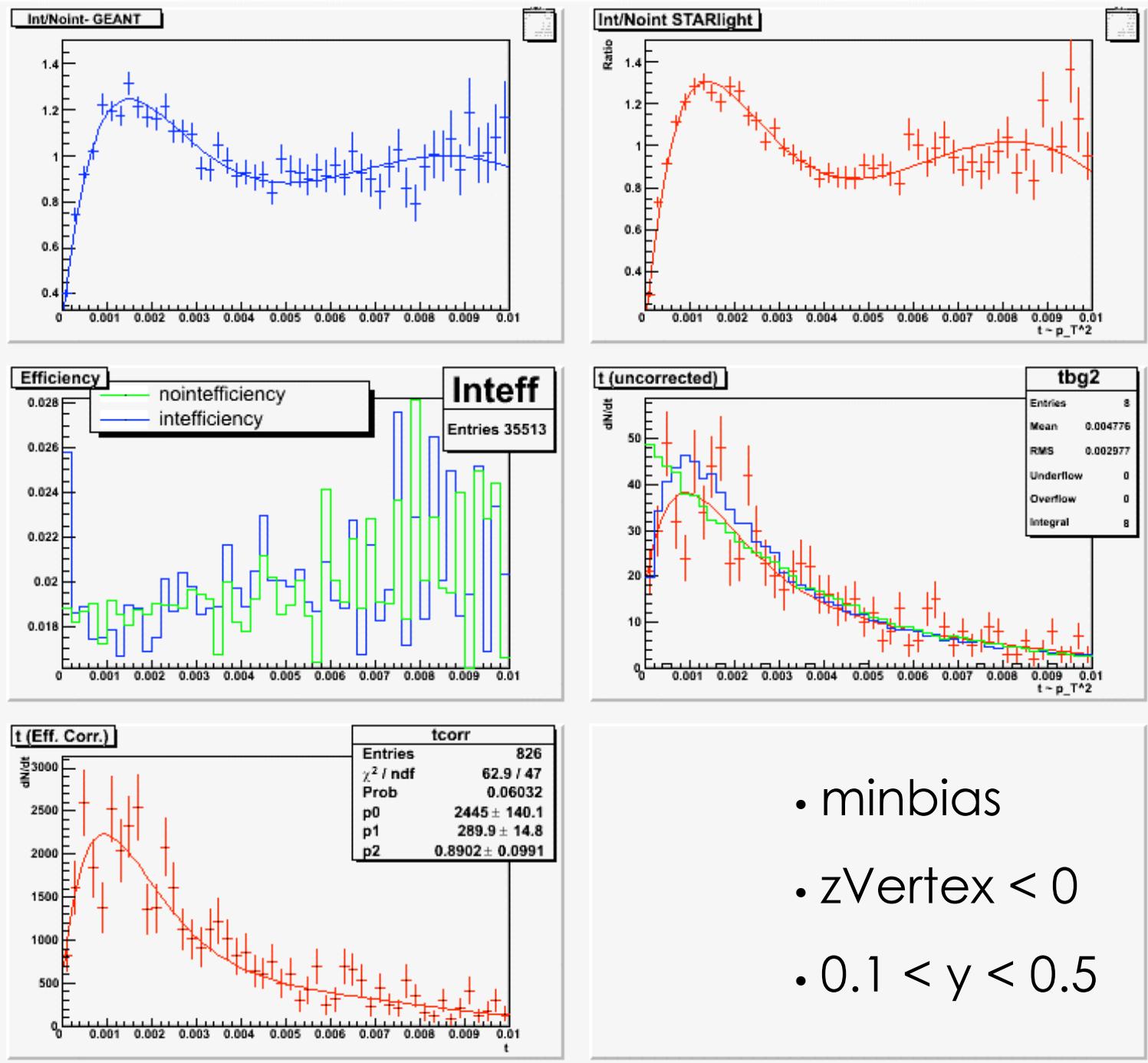
t (Eff. Corr.)



- minbias
- zVertex > 0
- $0.1 < y < 0.5$

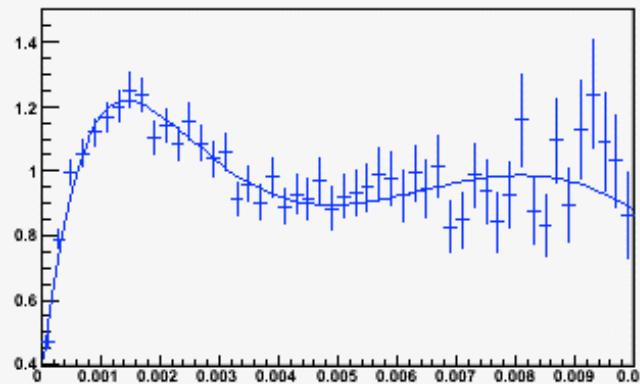


- minbias
- zVertex > 0
- $0.5 < \gamma < 1.0$

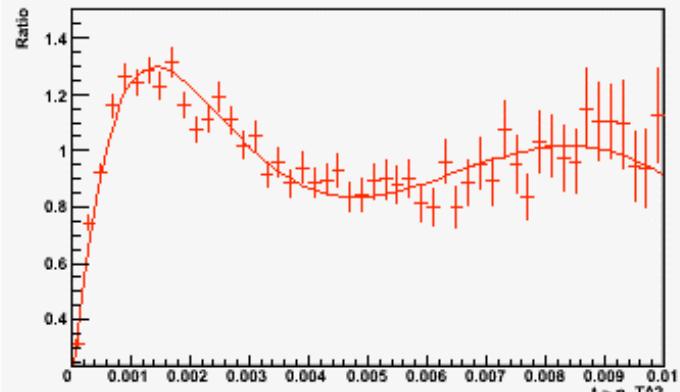


- minbias
- zVertex < 0
- $0.1 < y < 0.5$

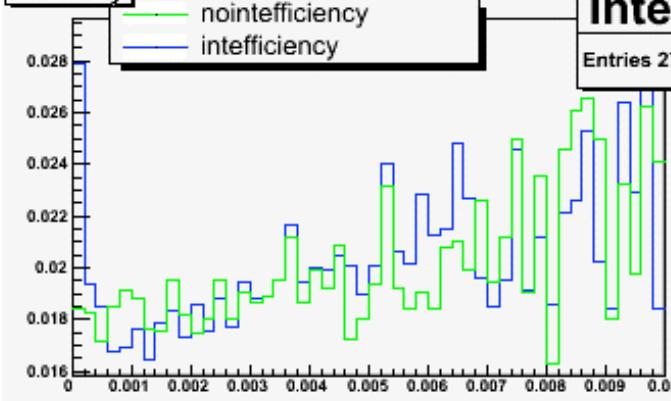
Int/Noint- GEANT



Int/Noint STARlight



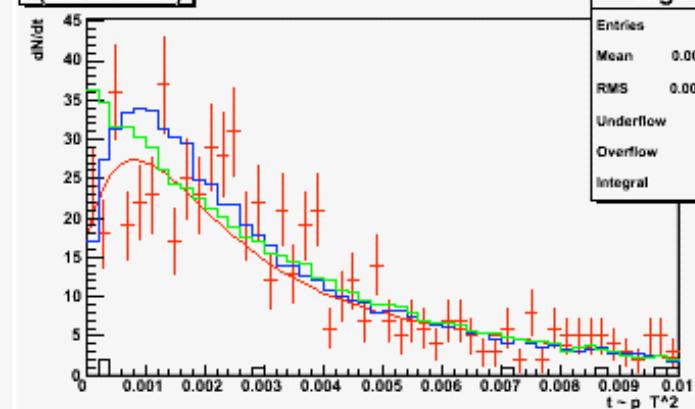
Efficiency



Inteff

Entries 27169

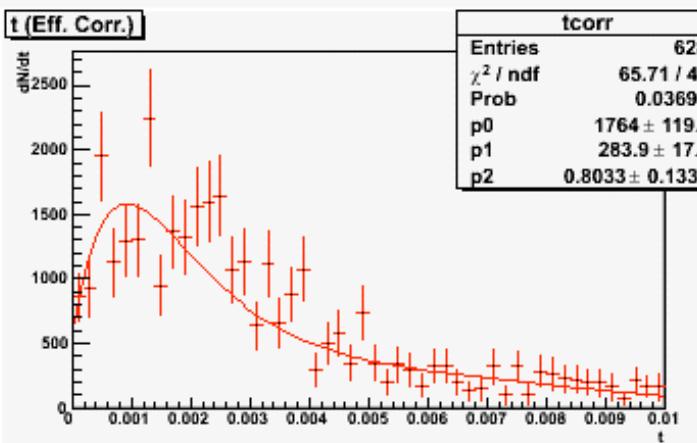
t (uncorrected)



tbg2

Entries	7
Mean	0.005531
RMS	0.003977
Underflow	0
Overflow	0
Integral	7

t (Eff. Corr.)



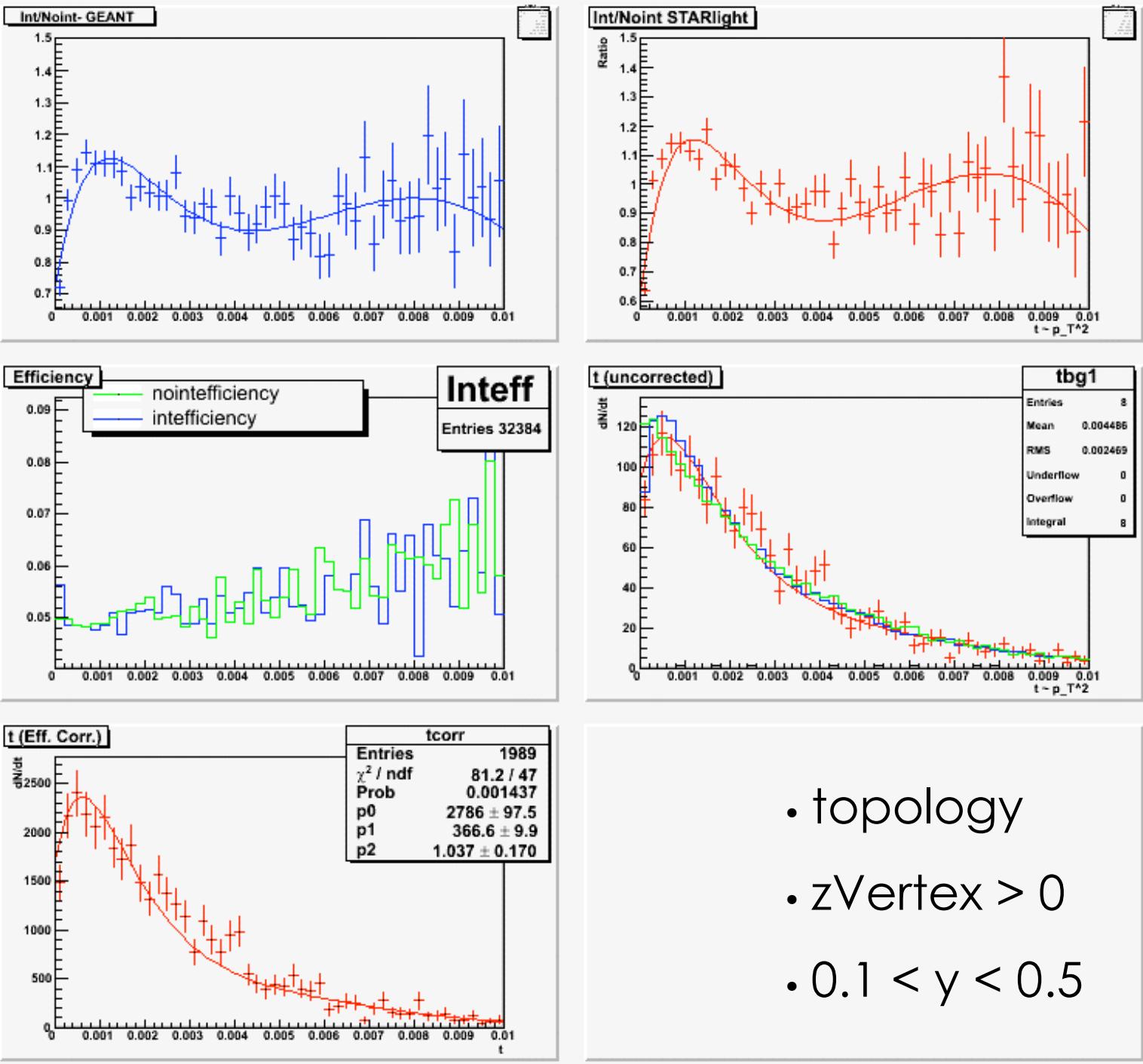
tcorr

Entries	628
χ^2 / ndf	65.71 / 47
Prob	0.03696
p0	1764 ± 119.1
p1	283.9 ± 17.1
p2	0.8033 ± 0.1333

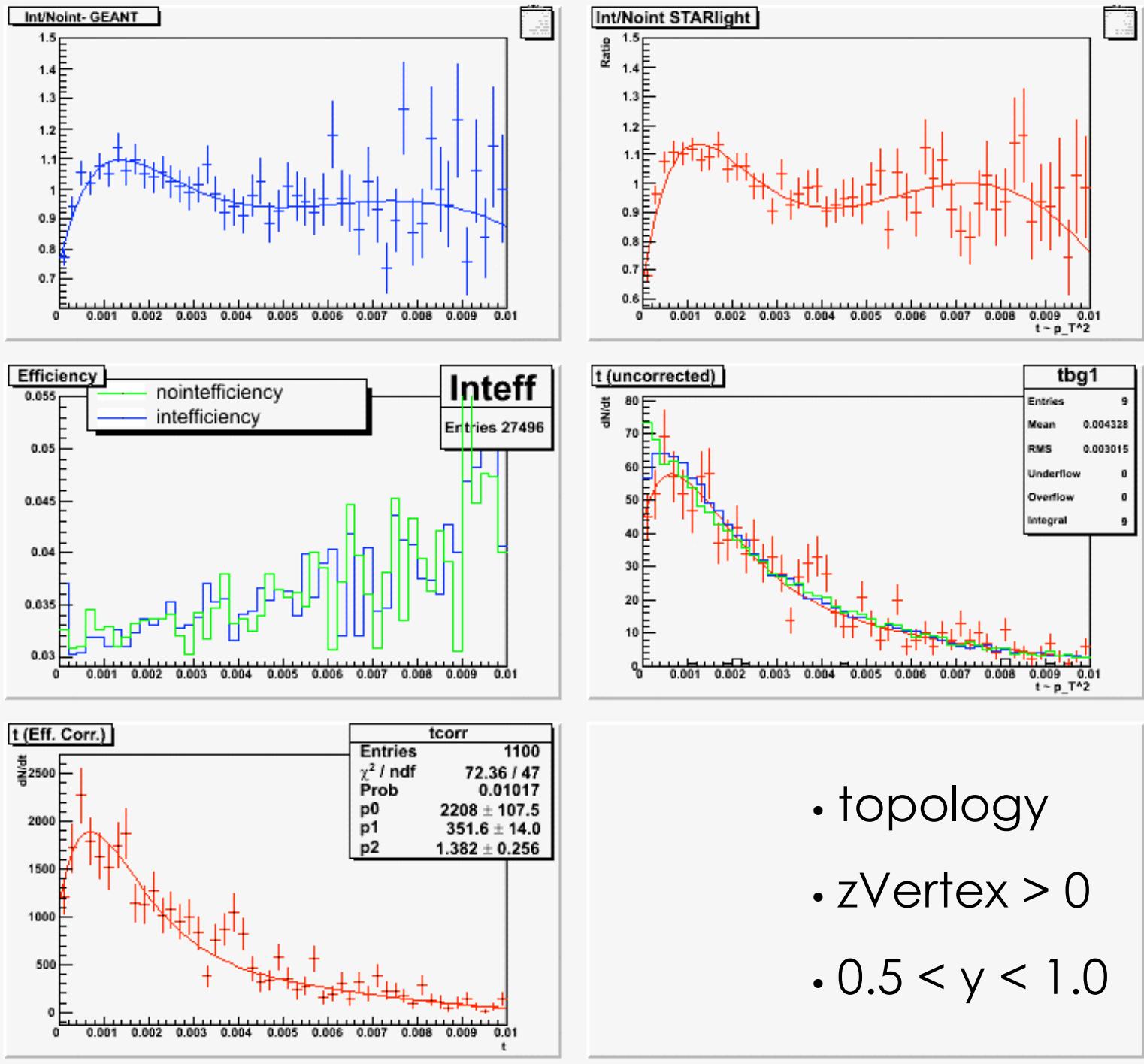
- minbias

- zVertex < 0

- $0.5 < y < 1.0$

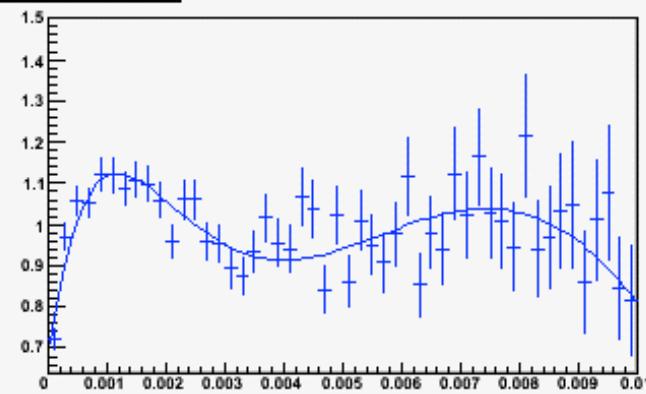


- topology
- zVertex > 0
- $0.1 < \gamma < 0.5$

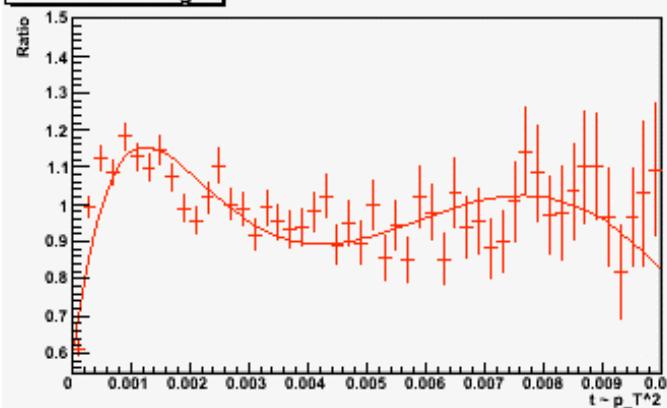


- topology
- zVertex > 0
- $0.5 < \gamma < 1.0$

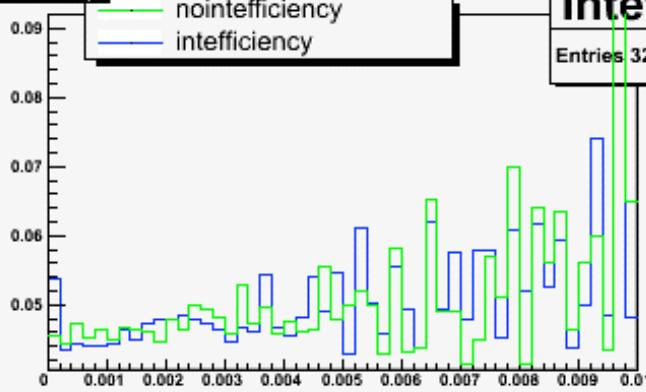
Int/Noint- GEANT



Int/Noint STARlight



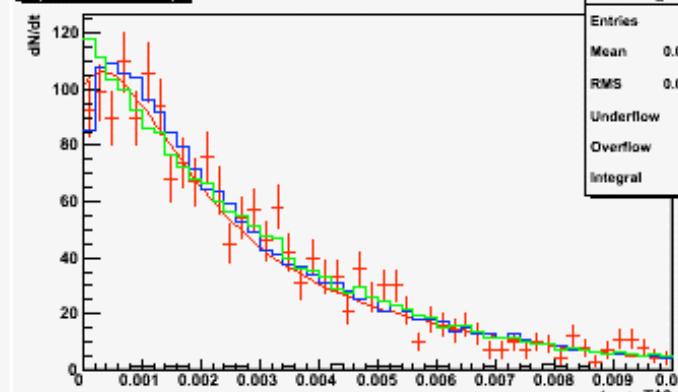
Efficiency



Inteff

Entries 32052

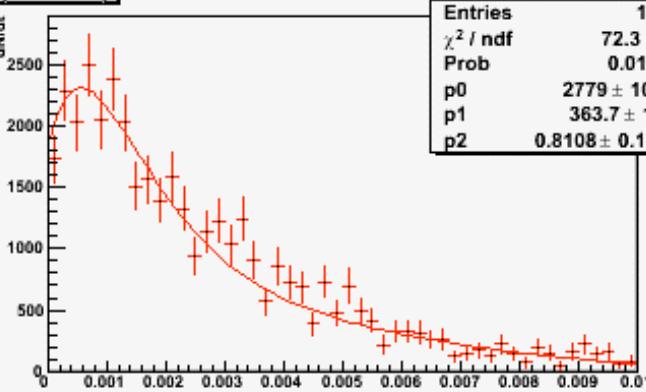
t (uncorrected)



tbg2

Entries	20
Mean	0.004802
RMS	0.002454
Underflow	0
Overflow	0
Integral	20

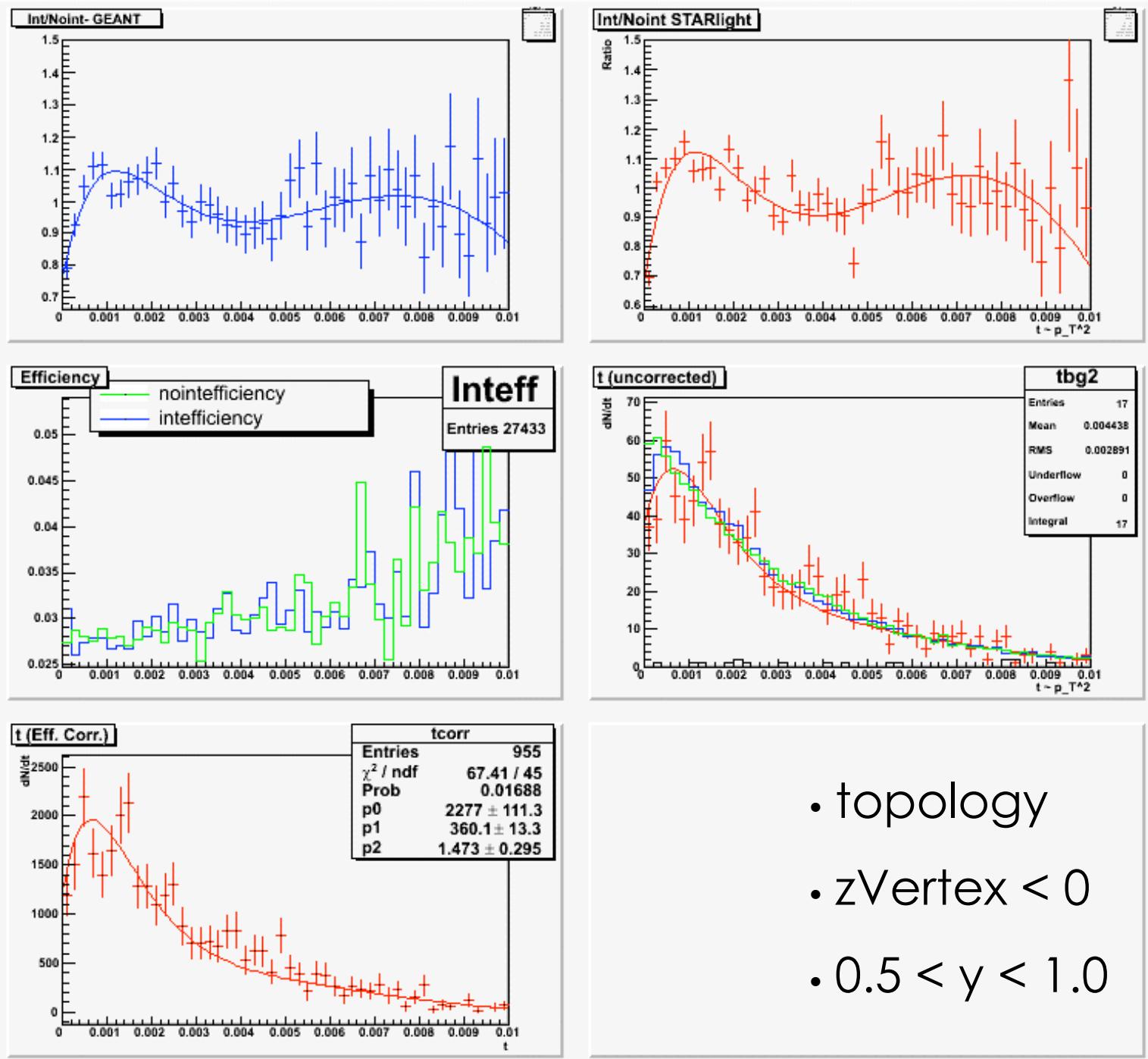
t (Eff. Corr.)



tcorr

Entries	1844
χ^2 / ndf	72.3 / 47
Prob	0.01029
p0	2779 ± 102.9
p1	363.7 ± 10.5
p2	0.8108 ± 0.1756

- topology
- zVertex < 0
- $0.1 < y < 0.5$



- topology
- zVertex < 0
- $0.5 < \gamma < 1.0$

zVertex Summary

	c	χ^2/dof
Minbias		
$z > 0$	0.97 ± 0.10	71/47
$0.1 < y < 0.5$		
$0.5 < y < 1.0$	0.77 ± 0.14	76/47
$z < 0$	0.89 ± 0.10	63/47
$0.1 < y < 0.5$		
$0.5 < y < 1.0$	0.80 ± 0.13	66/47
Topology		
$z > 0$	1.04 ± 0.17	81/47
$0.1 < y < 0.5$		
$0.5 < y < 1.0$	1.38 ± 0.26	72/47
$z < 0$	0.81 ± 0.18	72/47
$0.1 < y < 0.5$		
$0.5 < y < 1.0$	1.47 ± 0.30	67/45