Applying $\overline{targf}$

In the 2-beam background measurement of the rejection, PNN2 analysis requires ($\overline{targf}\ AND\ \overline{B4TRS \cdot B4CCD}$) to remove decays to multiple charged particles such as K_{e4} or $K_{\pi 2}$-scatter evets with a Dalitz decay of $\pi^0 \rightarrow \gamma e^+ e^-$ or conversion of photons in target [TN-385] . PNN1 beam background did not have this requirement. Following are the 2-Beam summary tables that describe the effect of having $\overline{targf}$ applied and not applied in both the pnn1 and pnn2 studies.pnn2.

As seen in the Tables 1 thru 3, when we require $\overline{targf}$ the rejection of the K-K and K-pi branches increases dramitically for PNN2 studies. In the PNN1 sample, the rejection increase observed is within the statistical error, Table 1.

rejection (n)	pnn1	pnn1 $\overline{targf}$	pnn2	pnn2 $\overline{targf}$
$R_{K-K} : BWTRS \cdot CkTRS \cdot Tail$	143.0 ± 50.4 (8)	173.8 ± 86.6 (4)	10.3 ± 0.6 (266)	18.1 ± 1.8 (95)
$R_{K-pi} : BWTRS \cdot CpTRS \cdot Tail$	3520.3 ± 1437.0 (6)	6318.0 ± 4467.1 (2)	39.0 ± 3.1 (155)	98.8 ± 17.1 (33)

Table 1: **2-Beam Rejection Summary** of Tables 14-15. First number is the rejection. The number in parenthesis is the number of events remaining that the rejection is based upon. K-K is the case where two Kaons are entering the beam. K-pi is the case where we have a Kaon and a Pion entering. $\overline{B4TRS \cdot B4CCD}$ is applied.

Norm. branches	pnn1	pnn1 $\overline{targf}$	pnn2	pnn2 $\overline{targf}$
$K\text{-}K_n : \ B4TRS \cdot B4CCD$	2.0 ± 1.4	2.0 ± 1.4	1.0 ± 1.0	1.0 ± 1.0
$K\text{-}K_r : \ TG \cdot TGKIN \cdot TGPV$	58.0 ± 57.5	58.0 ± 57.5	2.0 ± 1.4	2.0 ± 1.4
$K\text{-}pi_n : \ B4TRS \cdot B4CCD$	89.0 ± 9.4	89.0 ± 9.4	1.0 ± 1.0	1.0 ± 1.0
$K\text{-}pi_r : \ TG \cdot TGKIN \cdot TGPV$	357.7 ± 145.8	357.7 ± 145.8	6.0 ± 5.5	6.0 ± 5.5
N_{K-K}	0.0 ± 0.0	0.0 ± 0.0	1.0 ± 1.2	1.0 ± 1.2
N_{K-pi}	0.2 ± 0.1	0.2 ± 0.1	0.2 ± 0.3	0.2 ± 0.3

Table 2: **2-Beam Normalization Summary** of Tables 16-19. The 2-BM Normalization has 2 branches that are further bifurcated. $K\text{-}K_{r,n}$, $K\text{-}pi_{r,n}$ are the results of the bifurcations, r=rejection, n=normalization, which we used to determine the last two rows. N_{K-K} *and* N_{K-pi} are the 2-BM normalization values which are used in combination with Table 3 to give the final background in Table 5. For KK (Kpi), $\overline{CkTRS \cdot CkTAIL \cdot BWTRS}$ ($\overline{CpiTRS \cdot CpiTAIL \cdot BWTRS}$) is applied

Bkgrnd $(\times 10^{-3})$	k034	e787	pnn1	pnn1 $\overline{targf}$	pnn2	pnn2 $\overline{targf}$
1-BM	3.86 ± 2.36	1.66 ± 1.66	5.02 ± 5.02	5.02 ± 5.02	0.61 ± 0.61	0.61 ± 0.61
2-BM KK	0.983 ± 0.983	145.9 ± 145.9	0.74 ± 0.94	0.61 ± 0.80	323.62 ± 396.81	174.93 ± 214.95
2-BM Kpi	0.106 ± 0.106	19.7 ± 19.7	0.21 ± 0.12	0.12 ± 0.10	15.79 ± 21.41	6.14 ± 8.38
2-BM	1.14 ± 1.14	165.6 ± 165.6	0.95 ± 0.95	0.73 ± 0.73	339.41 ± 339.41	181.06 ± 181.06
Total	5.00 ± 2.62	167.3 ± 167.3	5.97 ± 5.41	5.75 ± 5.38	340.02 ± 340.02	181.67 ± 181.67

Table 3: **Total Background.** Scaled to the 3/3 sample. k034 column is the result of e949-pnn1 analysis. e787 is the result of the e787-PNN2 analysis. The other columns are current results that are expanded upon throughout the rest of the tables. The errors are statistical. KB_{live} for k034 is 1.77×10^{12} and for e787 is 1.71×10^{12} . e787 background has been scaled up accordingly for comparison purposes.

I noticed in the rejection of the 1-Beam branches were doubled due to one additional event passing all cuts at the PNN2 level cuts, but the same event was being removed from the PNN1 level cuts. I determined what cut the event was passing. This event was not being rejected by PNN2-level *rsdedxcl* cut.
PNN1's *rsdedx_cl* cut is the following:

```
if(cl_rsdedx.lt.0.04.and.chimax_rsdedx.lt.0)return
if(cl_rsdedx.lt.0.2.and.chimax_rsdedx.gt.0)return
```

PNN2's *rsdedx_cl* cut has been changed to the following:

```
if(cl_rsdedx.lt.0.04)return
```

Question: What is the reason this cut has been changed? How much acceptance increase do we get from loosening this cut?

Ilektra had loosen the *rsdedx_cl* in January 2006. She is attempting to find out why the change was made.

My proposal is to change it back to the PNN1 level until the muon studies can determine whether this cut needs to be optimized.

Cut comparison: Why does PNN2 have 150× the K-K and 80× the K-π PNN1 2-beam background?

The following is a comparison of PNN1 and PNN2 data samples (PNN2 include PNN1 or PNN2 triggers with the *pnn2box* applied). I am comparing the two sets of data with the same cuts applied during the PNN1 beam-background analysis, with the same bifurcations. Of course, the layv4 and boxcut was changed to allow the different kinematic regions of interest to remain in the sample.

I am attempting to determine why the rejection of various cuts vary depending on what kinematic region of the outgoing product. The following tables have the comparison on a cut-by-cut basis for all beam-background bifurcation branches.

Column titles refer to the (data-set)(cuts)(bifurcation type). So p1p1b949, refers to PNN1 data with PNN1 level cuts using the original e949-PNN1 bifurcation method as shown in k034. p2p1b949 is the same except that we are using PNN1+PNN2 triggers with the *PNN2BOX* and a different layv4. There are 3 columns for each data set, cuts performed sequentially, first (single), and last (allbut). The numbers in parenthesis is the rejection of the cut (on that row) for the given type of cut (seq, first, or last). The other number is the number of events remaining after the cut is applied (if in the 'last' column then it is the amount of events remaining before the cut is applied).

Original Latex file created on 24May06_1510 and Modified on May 25, 2006.
Numbers in tables created on unknown unknown unknown.
Data processed in Dec 2005 - Jan 2006.
This data has been skimmed from PNN2-ntuples with the following cuts: OR of 1/3 skims, BAD_RUN, (BOX2 or boxcuts), RSDEDXMAX, RSDEDXCL on the PNN2_SKIM set.

The title of a column describes the data set used.
pnn2 = PNN1+PNN2 data with the most up-to-date cuts applied.
pnn1 = PNN1 data with the most up-to-date cuts applied.
pnn2only = PNN2 data with the most up-to-date cuts applied.

Tables 1-5 are a summary of the long tables that follow.

The long tables track the events on a cut-by-cut basis. There are 3 columns per data set analyzed. In each column the first number in the cell is the number of events and the number in parenthesis is the rejection. The 1st column is the cuts applied sequentially; the 2nd is the application of only the listed cut; The 3rd is the number of events remaining before this cut is applied and the rejection of the cut.

Some cuts may have 787, 949, or cur attached to them. That means that the cut is set at the e787-pnn2, e949-pnn1, or the current e949-pnn2 level. Note that many of the cuts labeled cur are more than likely to be a carry over from e949-pnn1.

---

rejection (n)	p1p1b949	p2p1b949
Loose Setup	8960.0 ± 5172.8 (3)	25158.0 ± 25157.5 (1)
TD	16515.0 ± 16514.5 (1)	14908.0 ± 14907.5 (1)
$TD \cdot KIN$	4783.0 ± 4782.5 (1)	2437.0 ± 2436.5 (1)

Table 4: **1-Beam Rejection Summary** of Tables 6-8. Each row is a different branch to measure the DELCO rejection. First number is the rejection. The number is parenthesis is the number of events remaining that the rejection is based upon. The minimum rejection is used in calculation of the 1-BM background for a conservative estimate.

Norm. branches	p1p1b949	p2p1b949
ALL cuts below NORM	8.0 ± 2.8	14.0 ± 3.7
$PV \cdot TD$ *norm*	57.0 ± 7.5	217.0 ± 14.7
$CkTRS \cdot CkTail$ *rej*	21.3 ± 7.9	3.2 ± 0.1
$B4DEDX$ *norm*	525.0 ± 22.9	321.0 ± 17.9
$CpiTRS \cdot CpiTail$ *rej*	248.0 ± 247.5	144.0 ± 143.5
N_K	2.8 ± 1.1	99.1 ± 8.2
N_{pi}	2.1 ± 2.3	2.2 ± 2.2

Table 5: **1-Beam Normalization Summary** of Tables 9-13. The ALL-cuts-below row uses the combination of all cuts in the following 4 rows (branches) and is the normalization number used in the calculation of the numbers reported in Table 5 (Total Background). The sum of the last two rows provide a check on the ALL-cuts-below number.

$rejection\ (n)$	p1p1b949	p2p1b949
$Rej_{K-K}:\ BWTRS \cdot CkTRS \cdot CkTail$	143.0 ± 50.4 (8)	28.7 ± 3.8 (56)
$Rej_{K-pi}:\ BWTRS \cdot CpiTRS \cdot CpiTail$	3520.3 ± 1437.0 (6)	108.3 ± 22.0 (24)

Table 6: **2-Beam Rejection Summary** of Tables 14-15. First number is the rejection. The number in parenthesis is the number of events remaining that the rejection is based upon. K-K is the case where two Kaons are entering the beam. K-pi is the case where we have a Kaon and a Pion entering. $\overline{B4TRS \cdot B4CCD}$ is applied.

$Norm.\ branches$	p1p1b949	p2p1b949
$K\text{-}K_n:\ B4TRS \cdot B4CCD$	2.0 ± 1.4	12.0 ± 3.5
$K\text{-}K_r:\ TG \cdot TGKIN \cdot TGPV$	58.0 ± 57.5	29.7 ± 16.8
$K\text{-}pi_n:\ B4TRS \cdot B4CCD$	89.0 ± 9.4	26.0 ± 5.1
$K\text{-}pi_r:\ TG \cdot TGKIN \cdot TGPV$	357.7 ± 145.8	188.0 ± 132.6
N_{K-K}	0.0 ± 0.0	0.4 ± 0.3
N_{K-pi}	0.2 ± 0.1	0.1 ± 0.1

Table 7: **2-Beam Normalization Summary** of Tables 16-19. The 2-BM Normalization has 2 branches that are further bifurcated. $K\text{-}K_{r,n}$, $K\text{-}pi_{r,n}$ are the results of the bifurcations, r=rejection, n=normalization, which we used to determine the last two rows. N_{K-K} *and* N_{K-pi} are the 2-BM normalization values which are used in combination with Table 3 to give the final background in Table 5. For KK (Kpi), $\overline{CkTRS \cdot CkTAIL \cdot BWTRS}$ ($\overline{CpiTRS \cdot CpiTAIL \cdot BWTRS}$) is applied

$Bkgrnd\ (\times 10^{-3})$	k034	e787	p1p1b949	p2p1b949
1-BM	3.86 ± 2.36	1.66 ± 1.66	5.02 ± 5.02	17.24 ± 17.24
2-$BM\ \ KK$	0.983 ± 0.983	145.9 ± 145.9	0.74 ± 0.94	45.28 ± 29.44
2-$BM\ \ Kpi$	0.106 ± 0.106	19.7 ± 19.7	0.21 ± 0.12	3.89 ± 2.95
2-BM	1.14 ± 1.14	165.6 ± 165.6	0.95 ± 0.95	49.17 ± 29.59
$Total$	5.00 ± 2.62	167.3 ± 167.3	5.97 ± 5.41	66.41 ± 34.55

Table 8: **Total Background.** Scaled to the 3/3 sample. k034 column is the result of e949-pnn1 analysis. e787 is the result of the e787-PNN2 analysis. The other columns are current results that are expanded upon throughout the rest of the tables. The errors are statistical. KB_{live} for k034 is 1.77×10^{12} and for e787 is 1.71×10^{12} . e787 background has been scaled up accordingly for comparison purposes.

Table 9: 1-Beam Rejection. Branch no. 1

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
BOX 949	405468 (0.00)	0 (405468.00)	3 (1.00)	654085 (0.00)	0 (654085.00)	1 (1.00)
rsdedxmax cur	405468 (1.00)	0 (405468.00)	3 (1.00)	654085 (1.00)	0 (654085.00)	1 (1.00)
rsdedxcl 949	405468 (1.00)	0 (405468.00)	3 (1.00)	654085 (1.00)	0 (654085.00)	1 (1.00)
rslike cur	405468 (1.00)	0 (405468.00)	3 (1.00)	654085 (1.00)	0 (654085.00)	1 (1.00)
rngmom cur	376276 (1.08)	29192 (13.89)	9 (3.00)	506041 (1.29)	148044 (4.42)	3 (3.00)
pv(not tg) cur	257815 (1.46)	127407 (3.18)	3 (1.00)	269155 (1.88)	286409 (2.28)	6 (6.00)
bwtrs cur	149137 (1.73)	161277 (2.51)	7 (2.33)	204820 (1.31)	147119 (4.45)	1 (1.00)
b4trs cur	131155 (1.14)	154090 (2.63)	6 (2.00)	178709 (1.15)	143751 (4.55)	4 (4.00)
b4ccd cur	130971 (1.00)	3094 (131.05)	3 (1.00)	178289 (1.00)	7445 (87.86)	1 (1.00)
tgqualt 949	130971 (1.00)	0 (405468.00)	3 (1.00)	178289 (1.00)	0 (654085.00)	1 (1.00)
timcon cur	130357 (1.00)	4184 (96.91)	3 (1.00)	177334 (1.01)	7776 (84.12)	1 (1.00)
epitg 949	129024 (1.01)	26358 (15.38)	3 (1.00)	175255 (1.01)	17722 (36.91)	1 (1.00)
tger 949	128352 (1.01)	4121 (98.39)	3 (1.00)	173255 (1.01)	18275 (35.79)	1 (1.00)
targf 949	123680 (1.04)	87765 (4.62)	4 (1.33)	165367 (1.05)	88509 (7.39)	4 (4.00)
ticcon 949	123678 (1.00)	38 (10670.20)	3 (1.00)	165363 (1.00)	95 (6885.11)	1 (1.00)
dtgttp 949	123624 (1.00)	212 (1912.58)	3 (1.00)	165255 (1.00)	577 (1133.60)	1 (1.00)
rtdif 949	119155 (1.04)	11156 (36.35)	3 (1.00)	159042 (1.04)	16163 (40.47)	1 (1.00)
epimaxk 949	112541 (1.06)	47010 (8.63)	3 (1.00)	150770 (1.05)	41675 (15.69)	1 (1.00)
drp 949	111313 (1.01)	2795 (145.07)	3 (1.00)	146934 (1.03)	12500 (52.33)	1 (1.00)
*phivtx*1 949	87804 (1.27)	89495 (4.53)	4 (1.33)	117351 (1.25)	144733 (4.52)	3 (3.00)
eiccon 949	84970 (1.03)	14116 (28.72)	3 (1.00)	112708 (1.04)	28883 (22.65)	1 (1.00)
opsveto 949	70254 (1.21)	113833 (3.56)	3 (1.00)	84595 (1.33)	202745 (3.23)	1 (1.00)
kic 949	64215 (1.09)	98906 (4.10)	3 (1.00)	74565 (1.13)	130535 (5.01)	1 (1.00)
tggeo cur	58119 (1.10)	162074 (2.50)	3 (1.00)	63559 (1.17)	275388 (2.38)	2 (2.00)
tdedge 949	54328 (1.07)	64632 (6.27)	3 (1.00)	58945 (1.08)	94323 (6.93)	1 (1.00)
tgzfool 949	54178 (1.00)	2478 (163.63)	3 (1.00)	58776 (1.00)	10104 (64.74)	1 (1.00)
upvtrs cur	47530 (1.14)	46493 (8.72)	3 (1.00)	51081 (1.15)	54697 (11.96)	1 (1.00)
rvtrs cur	47301 (1.00)	5636 (71.94)	3 (1.00)	50803 (1.01)	13274 (49.28)	1 (1.00)
tgtcon cur	45863 (1.03)	24528 (16.53)	3 (1.00)	48217 (1.05)	54148 (12.08)	7 (7.00)
b4etcon cur	44529 (1.03)	13216 (30.68)	4 (1.33)	46980 (1.03)	20825 (31.41)	1 (1.00)
b4abm < 1.0	**26880** (1.66)	255598 (1.59)	1166 (388.67)	**25158** (1.87)	485804 (1.35)	471 (471.00)
DELCO 949	**3** (8960.00)	266878 (1.52)	26880 (8960.00)	**1** (25158.00)	470196 (1.39)	25158 (25158.00)
Total Rej.	8960.00			25158.00		

Table 10: 1-Beam Rejection. Branch no. 2

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
BOX 949	405468 (0.00)	0 (405468.00)	0 (0.00)	654085 (0.00)	0 (654085.00)	1 (1.00)
rsdedxmax cur	405468 (1.00)	0 (405468.00)	0 (0.00)	654085 (1.00)	0 (654085.00)	1 (1.00)
rsdedxcl 949	405468 (1.00)	0 (405468.00)	0 (0.00)	654085 (1.00)	0 (654085.00)	1 (1.00)
rslike cur	405468 (1.00)	0 (405468.00)	0 (0.00)	654085 (1.00)	0 (654085.00)	1 (1.00)
rngmom cur	376276 (1.08)	29192 (13.89)	0 (0.00)	506041 (1.29)	148044 (4.42)	1 (1.00)
pv(not tg) cur	257815 (1.46)	127407 (3.18)	0 (0.00)	269155 (1.88)	286409 (2.28)	2 (2.00)
bwtrs cur	149137 (1.73)	161277 (2.51)	3 (3.00)	204820 (1.31)	147119 (4.45)	1 (1.00)
b4trs cur	131155 (1.14)	154090 (2.63)	2 (2.00)	178709 (1.15)	143751 (4.55)	3 (3.00)
b4ccd cur	130971 (1.00)	3094 (131.05)	0 (0.00)	178289 (1.00)	7445 (87.86)	1 (1.00)
tgqualt 949	130971 (1.00)	0 (405468.00)	0 (0.00)	178289 (1.00)	0 (654085.00)	1 (1.00)
timcon cur	130357 (1.00)	4184 (96.91)	0 (0.00)	177334 (1.01)	7776 (84.12)	1 (1.00)
epitg 949	129024 (1.01)	26358 (15.38)	0 (0.00)	175255 (1.01)	17722 (36.91)	1 (1.00)
tger 949	128352 (1.01)	4121 (98.39)	0 (0.00)	173255 (1.01)	18275 (35.79)	1 (1.00)
targf 949	123680 (1.04)	87765 (4.62)	1 (1.00)	165367 (1.05)	88509 (7.39)	3 (3.00)
ticcon 949	123678 (1.00)	38 (10670.20)	0 (0.00)	165363 (1.00)	95 (6885.11)	1 (1.00)
dtgttp 949	123624 (1.00)	212 (1912.58)	0 (0.00)	165255 (1.00)	577 (1133.60)	1 (1.00)
rtdif 949	119155 (1.04)	11156 (36.35)	0 (0.00)	159042 (1.04)	16163 (40.47)	1 (1.00)
epimaxk 949	112541 (1.06)	47010 (8.63)	0 (0.00)	150770 (1.05)	41675 (15.69)	1 (1.00)
drp 949	111313 (1.01)	2795 (145.07)	0 (0.00)	146934 (1.03)	12500 (52.33)	1 (1.00)
*phivtx*1 949	87804 (1.27)	89495 (4.53)	0 (0.00)	117351 (1.25)	144733 (4.52)	3 (3.00)
eiccon 949	84970 (1.03)	14116 (28.72)	0 (0.00)	112708 (1.04)	28883 (22.65)	1 (1.00)
opsveto 949	70254 (1.21)	113833 (3.56)	0 (0.00)	84595 (1.33)	202745 (3.23)	1 (1.00)
kic 949	64215 (1.09)	98906 (4.10)	0 (0.00)	74565 (1.13)	130535 (5.01)	1 (1.00)
tggeo cur	58119 (1.10)	162074 (2.50)	0 (0.00)	63559 (1.17)	275388 (2.38)	1 (1.00)
tdedge 949	54328 (1.07)	64632 (6.27)	0 (0.00)	58945 (1.08)	94323 (6.93)	1 (1.00)
tgzfool 949	54178 (1.00)	2478 (163.63)	0 (0.00)	58776 (1.00)	10104 (64.74)	1 (1.00)
upvtrs cur	47530 (1.14)	46493 (8.72)	0 (0.00)	51081 (1.15)	54697 (11.96)	1 (1.00)
rvtrs cur	47301 (1.00)	5636 (71.94)	0 (0.00)	50803 (1.01)	13274 (49.28)	1 (1.00)
tgtcon cur	45863 (1.03)	24528 (16.53)	0 (0.00)	48217 (1.05)	54148 (12.08)	5 (5.00)
b4etcon cur	44529 (1.03)	13216 (30.68)	0 (0.00)	46980 (1.03)	20825 (31.41)	1 (1.00)
b4abm < 1.0	26880 (1.66)	255598 (1.59)	4 (4.00)	25158 (1.87)	485804 (1.35)	227 (227.00)
piflg cur	26851 (1.00)	6709 (60.44)	0 (0.00)	25086 (1.00)	15434 (42.38)	1 (1.00)
*ev*502 *cur*	22153 (1.21)	80728 (5.02)	0 (0.00)	19898 (1.26)	174904 (3.74)	1 (1.00)
elveto cur	20308 (1.09)	53750 (7.54)	0 (0.00)	18290 (1.09)	135422 (4.83)	1 (1.00)
tdfool cur	20273 (1.00)	26409 (15.35)	0 (0.00)	18247 (1.00)	95454 (6.85)	1 (1.00)
*tdvarnn*02 *cur*	16515 (1.23)	97792 (4.15)	0 (0.00)	14908 (1.22)	213045 (3.07)	1 (1.00)
TD *cur*	**16515** (1.00)	172945 (2.34)	0 (0.00)	**14908** (1.00)	345081 (1.90)	1 (1.00)
DELCO 949	**0** (16515.00)	266878 (1.52)	16515 (16515.00)	**1** (14908.00)	470196 (1.39)	14908 (14908.00)
Total Rej.	16515.00			14908.00		

Table 11: 1-Beam Rejection. Branch no. 3

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
BOX 949	405468 (0.00)	0 (405468.00)	0 (0.00)	654085 (0.00)	0 (654085.00)	1 (1.00)
rsdedxmax cur	405468 (1.00)	0 (405468.00)	0 (0.00)	654085 (1.00)	0 (654085.00)	1 (1.00)
rsdedxcl 949	405468 (1.00)	0 (405468.00)	0 (0.00)	654085 (1.00)	0 (654085.00)	1 (1.00)
rslike cur	405468 (1.00)	0 (405468.00)	0 (0.00)	654085 (1.00)	0 (654085.00)	1 (1.00)
rngmom cur	376276 (1.08)	29192 (13.89)	0 (0.00)	506041 (1.29)	148044 (4.42)	1 (1.00)
pv(not tg) cur	257815 (1.46)	127407 (3.18)	0 (0.00)	269155 (1.88)	286409 (2.28)	1 (1.00)
bwtrs cur	149137 (1.73)	161277 (2.51)	1 (1.00)	204820 (1.31)	147119 (4.45)	1 (1.00)
b4trs cur	131155 (1.14)	154090 (2.63)	0 (0.00)	178709 (1.15)	143751 (4.55)	1 (1.00)
b4ccd cur	130971 (1.00)	3094 (131.05)	0 (0.00)	178289 (1.00)	7445 (87.86)	1 (1.00)
tgqualt 949	130971 (1.00)	0 (405468.00)	0 (0.00)	178289 (1.00)	0 (654085.00)	1 (1.00)
timcon cur	130357 (1.00)	4184 (96.91)	0 (0.00)	177334 (1.01)	7776 (84.12)	1 (1.00)
epitg 949	129024 (1.01)	26358 (15.38)	0 (0.00)	175255 (1.01)	17722 (36.91)	1 (1.00)
tger 949	128352 (1.01)	4121 (98.39)	0 (0.00)	173255 (1.01)	18275 (35.79)	1 (1.00)
targf 949	123680 (1.04)	87765 (4.62)	0 (0.00)	165367 (1.05)	88509 (7.39)	1 (1.00)
ticcon 949	123678 (1.00)	38 (10670.20)	0 (0.00)	165363 (1.00)	95 (6885.11)	1 (1.00)
dtgttp 949	123624 (1.00)	212 (1912.58)	0 (0.00)	165255 (1.00)	577 (1133.60)	1 (1.00)
rtdif 949	119155 (1.04)	11156 (36.35)	0 (0.00)	159042 (1.04)	16163 (40.47)	1 (1.00)
epimaxk 949	112541 (1.06)	47010 (8.63)	0 (0.00)	150770 (1.05)	41675 (15.69)	1 (1.00)
drp 949	111313 (1.01)	2795 (145.07)	0 (0.00)	146934 (1.03)	12500 (52.33)	1 (1.00)
*phivtx*1 949	87804 (1.27)	89495 (4.53)	0 (0.00)	117351 (1.25)	144733 (4.52)	1 (1.00)
eiccon 949	84970 (1.03)	14116 (28.72)	0 (0.00)	112708 (1.04)	28883 (22.65)	1 (1.00)
opsveto 949	70254 (1.21)	113833 (3.56)	0 (0.00)	84595 (1.33)	202745 (3.23)	1 (1.00)
kic 949	64215 (1.09)	98906 (4.10)	0 (0.00)	74565 (1.13)	130535 (5.01)	1 (1.00)
tggeo cur	58119 (1.10)	162074 (2.50)	0 (0.00)	63559 (1.17)	275388 (2.38)	1 (1.00)
tdedge 949	54328 (1.07)	64632 (6.27)	0 (0.00)	58945 (1.08)	94323 (6.93)	1 (1.00)
tgzfool 949	54178 (1.00)	2478 (163.63)	0 (0.00)	58776 (1.00)	10104 (64.74)	1 (1.00)
upvtrs cur	47530 (1.14)	46493 (8.72)	0 (0.00)	51081 (1.15)	54697 (11.96)	1 (1.00)
rvtrs cur	47301 (1.00)	5636 (71.94)	0 (0.00)	50803 (1.01)	13274 (49.28)	1 (1.00)
tgtcon cur	45863 (1.03)	24528 (16.53)	0 (0.00)	48217 (1.05)	54148 (12.08)	2 (2.00)
b4etcon cur	44529 (1.03)	13216 (30.68)	0 (0.00)	46980 (1.03)	20825 (31.41)	1 (1.00)
b4abm < 1.0	26880 (1.66)	255598 (1.59)	0 (0.00)	25158 (1.87)	485804 (1.35)	61 (61.00)
piflg cur	26851 (1.00)	6709 (60.44)	0 (0.00)	25086 (1.00)	15434 (42.38)	1 (1.00)
*ev*502 *cur*	22153 (1.21)	80728 (5.02)	0 (0.00)	19898 (1.26)	174904 (3.74)	1 (1.00)
elveto cur	20308 (1.09)	53750 (7.54)	0 (0.00)	18290 (1.09)	135422 (4.83)	1 (1.00)
tdfool cur	20273 (1.00)	26409 (15.35)	0 (0.00)	18247 (1.00)	95454 (6.85)	1 (1.00)
*tdvarnn*02 *cur*	16515 (1.23)	97792 (4.15)	0 (0.00)	14908 (1.22)	213045 (3.07)	1 (1.00)
TD *cur*	16515 (1.00)	172945 (2.34)	0 (0.00)	14908 (1.00)	345081 (1.90)	1 (1.00)
BOX 949	16515 (1.00)	0 (405468.00)	0 (0.00)	14908 (1.00)	0 (654085.00)	1 (1.00)
*icodel*14 *cur*	16493 (1.00)	3961 (102.36)	0 (0.00)	14908 (1.00)	3 (218028.00)	1 (1.00)
*cos*3*d cur*	15594 (1.06)	28549 (14.20)	0 (0.00)	14114 (1.06)	51196 (12.78)	1 (1.00)
*layv*4 949	15594 (1.00)	2 (202734.00)	0 (0.00)	14114 (1.00)	0 (654085.00)	1 (1.00)
zfrf cur	14518 (1.07)	45753 (8.86)	0 (0.00)	14110 (1.00)	648 (1009.39)	1 (1.00)
zutout cur	14517 (1.00)	977 (415.01)	0 (0.00)	14107 (1.00)	557 (1174.30)	1 (1.00)
FIDUCIAL 949	14517 (1.00)	53686 (7.55)	0 (0.00)	14107 (1.00)	52109 (12.55)	1 (1.00)
utcqual 949	11719 (1.24)	114267 (3.55)	0 (0.00)	11240 (1.26)	208256 (3.14)	1 (1.00)
rsdedxcl 949	11719 (1.00)	0 (405468.00)	0 (0.00)	11240 (1.00)	0 (654085.00)	1 (1.00)
rsdedxmax cur	11719 (1.00)	0 (405468.00)	0 (0.00)	11240 (1.00)	0 (654085.00)	1 (1.00)
rslike cur	11719 (1.00)	0 (405468.00)	0 (0.00)	11240 (1.00)	0 (654085.00)	1 (1.00)
rngmom cur	11719 (1.00)	29192 (13.89)	0 (0.00)	11240 (1.00)	148044 (4.42)	1 (1.00)
*prrf*1 949	10232 (1.15)	58307 (6.95)	0 (0.00)	6620 (1.70)	253120 (2.58)	1 (1.00)
prrfz 949	9059 (1.13)	58421 (6.94)	0 (0.00)	5659 (1.17)	102690 (6.37)	1 (1.00)
PRRF 949	9059 (1.00)	103898 (3.90)	0 (0.00)	5659 (1.00)	323368 (2.02)	1 (1.00)
rtghi cur	9048 (1.00)	1747 (232.09)	0 (0.00)	5658 (1.00)	1813 (360.77)	1 (1.00)
etghi cur	8915 (1.01)	13027 (31.13)	0 (0.00)	5611 (1.01)	14056 (46.53)	1 (1.00)
*tgdedx*1 *cur*	8552 (1.04)	45439 (8.92)	0 (0.00)	5057 (1.11)	121866 (5.37)	1 (1.00)

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Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
*tgdedx*2 *cur*	8268 (1.03)	38479 (10.54)	0 (0.00)	4872 (1.04)	56131 (11.65)	1 (1.00)
tgdedx *cur*	8268 (1.00)	91524 (4.43)	0 (0.00)	4872 (1.00)	185457 (3.53)	1 (1.00)
*tglike*1 *cur*	8059 (1.03)	47861 (8.47)	0 (0.00)	4660 (1.05)	95963 (6.82)	1 (1.00)
*tglike*2 *cur*	7822 (1.03)	37487 (10.82)	0 (0.00)	4473 (1.04)	84235 (7.76)	1 (1.00)
TGLIKE *cur*	7822 (1.00)	63787 (6.36)	0 (0.00)	4473 (1.00)	128668 (5.08)	1 (1.00)
*tgdb*4 *cur*	7584 (1.03)	30670 (13.22)	0 (0.00)	4369 (1.02)	53110 (12.32)	1 (1.00)
*tgdb*4*tip cur*	5952 (1.27)	126413 (3.21)	0 (0.00)	3139 (1.39)	184461 (3.55)	1 (1.00)
tgdvxtip cur	5210 (1.14)	84301 (4.81)	0 (0.00)	2700 (1.16)	112127 (5.83)	1 (1.00)
tgdvxpi cur	4871 (1.07)	73883 (5.49)	0 (0.00)	2486 (1.09)	76314 (8.57)	1 (1.00)
TGB4 *cur*	4871 (1.00)	207101 (1.96)	0 (0.00)	2486 (1.00)	278240 (2.35)	1 (1.00)
pigap cur	4783 (1.02)	33913 (11.96)	0 (0.00)	2437 (1.02)	47738 (13.70)	1 (1.00)
KIN 949	**4783** (1.00)	340833 (1.19)	0 (0.00)	**2437** (1.00)	596904 (1.10)	1 (1.00)
DELCO 949	**0** (4783.00)	266878 (1.52)	4783 (4783.00)	**1** (2437.00)	470196 (1.39)	2437 (2437.00)
Total Rej.	4783.00			2437.00		

Table 12: 1-Beam Normalization. Branch no. 1

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
BOX 949	405468 (0.00)	0 (405468.00)	8 (1.00)	654085 (0.00)	0 (654085.00)	14 (1.00)
rsdedxmax cur	405468 (1.00)	0 (405468.00)	8 (1.00)	654085 (1.00)	0 (654085.00)	14 (1.00)
rsdedxcl 949	405468 (1.00)	0 (405468.00)	8 (1.00)	654085 (1.00)	0 (654085.00)	14 (1.00)
rslike cur	405468 (1.00)	0 (405468.00)	8 (1.00)	654085 (1.00)	0 (654085.00)	14 (1.00)
rngmom cur	376276 (1.08)	29192 (13.89)	8 (1.00)	506041 (1.29)	148044 (4.42)	14 (1.00)
BOX 949	376276 (1.00)	0 (405468.00)	8 (1.00)	506041 (1.00)	0 (654085.00)	14 (1.00)
*icodel*14 *cur*	374316 (1.01)	3961 (102.36)	8 (1.00)	506041 (1.00)	3 (218028.00)	14 (1.00)
*cos*3*d cur*	348023 (1.08)	28549 (14.20)	8 (1.00)	461701 (1.10)	51196 (12.78)	14 (1.00)
*layv*4 949	348021 (1.00)	2 (202734.00)	8 (1.00)	461701 (1.00)	0 (654085.00)	14 (1.00)
zfrf cur	325899 (1.07)	45753 (8.86)	8 (1.00)	461415 (1.00)	648 (1009.39)	14 (1.00)
zutout cur	325785 (1.00)	977 (415.01)	8 (1.00)	461128 (1.00)	557 (1174.30)	14 (1.00)
FIDUCIAL 949	325785 (1.00)	53686 (7.55)	8 (1.00)	461128 (1.00)	52109 (12.55)	14 (1.00)
utcqual 949	252148 (1.29)	114267 (3.55)	8 (1.00)	342630 (1.35)	208256 (3.14)	14 (1.00)
rsdedxcl 949	252148 (1.00)	0 (405468.00)	8 (1.00)	342630 (1.00)	0 (654085.00)	14 (1.00)
rsdedxmax cur	252148 (1.00)	0 (405468.00)	8 (1.00)	342630 (1.00)	0 (654085.00)	14 (1.00)
rslike cur	252148 (1.00)	0 (405468.00)	8 (1.00)	342630 (1.00)	0 (654085.00)	14 (1.00)
tgktim off	252148 (1.00)	0 (405468.00)	8 (1.00)	342630 (1.00)	0 (654085.00)	14 (1.00)
rngmom cur	252148 (1.00)	29192 (13.89)	8 (1.00)	342630 (1.00)	148044 (4.42)	14 (1.00)
*prrf*1 949	221464 (1.14)	58307 (6.95)	8 (1.00)	205095 (1.67)	253120 (2.58)	14 (1.00)
prrfz 949	195228 (1.13)	58421 (6.94)	8 (1.00)	171907 (1.19)	102690 (6.37)	14 (1.00)
PRRF 949	195228 (1.00)	103898 (3.90)	8 (1.00)	171907 (1.00)	323368 (2.02)	14 (1.00)
rtghi cur	194688 (1.00)	1747 (232.09)	8 (1.00)	171766 (1.00)	1813 (360.77)	14 (1.00)
etghi cur	187587 (1.04)	13027 (31.13)	8 (1.00)	168828 (1.02)	14056 (46.53)	14 (1.00)
*tgdedx*1 *cur*	167218 (1.12)	45439 (8.92)	8 (1.00)	132090 (1.28)	121866 (5.37)	14 (1.00)
*tgdedx*2 *cur*	151163 (1.11)	38479 (10.54)	8 (1.00)	122356 (1.08)	56131 (11.65)	14 (1.00)
tgdedx *cur*	151163 (1.00)	91524 (4.43)	8 (1.00)	122356 (1.00)	185457 (3.53)	14 (1.00)
*tglike*1 *cur*	139711 (1.08)	47861 (8.47)	8 (1.00)	111768 (1.09)	95963 (6.82)	14 (1.00)
*tglike*2 *cur*	134246 (1.04)	37487 (10.82)	8 (1.00)	105714 (1.06)	84235 (7.76)	14 (1.00)
TGLIKE *cur*	134246 (1.00)	63787 (6.36)	8 (1.00)	105714 (1.00)	128668 (5.08)	14 (1.00)
*tgdb*4 *cur*	124973 (1.07)	30670 (13.22)	8 (1.00)	97845 (1.08)	53110 (12.32)	14 (1.00)
*tgdb*4*tip cur*	91567 (1.36)	126413 (3.21)	8 (1.00)	73438 (1.33)	184461 (3.55)	14 (1.00)
tgdvxtip cur	77697 (1.18)	84301 (4.81)	8 (1.00)	63488 (1.16)	112127 (5.83)	14 (1.00)
tgdvxpi cur	68398 (1.14)	73883 (5.49)	8 (1.00)	59332 (1.07)	76314 (8.57)	14 (1.00)
TGB4 *cur*	68398 (1.00)	207101 (1.96)	8 (1.00)	59332 (1.00)	278240 (2.35)	14 (1.00)
pigap cur	64635 (1.06)	33913 (11.96)	8 (1.00)	57181 (1.04)	47738 (13.70)	14 (1.00)
KIN 949	64635 (1.00)	340833 (1.19)	8 (1.00)	57181 (1.00)	596904 (1.10)	14 (1.00)
tgpv cur	48432 (1.33)	153571 (2.64)	8 (1.00)	41751 (1.37)	199153 (3.28)	14 (1.00)
bwtrs cur	42063 (1.15)	161277 (2.51)	8 (1.00)	37108 (1.13)	147119 (4.45)	15 (1.07)
*b*4*trs cur*	38267 (1.10)	154090 (2.63)	9 (1.12)	33791 (1.10)	143751 (4.55)	14 (1.00)
*b*4*ccd cur*	38241 (1.00)	3094 (131.05)	8 (1.00)	33540 (1.01)	7445 (87.86)	14 (1.00)
tgqualt 949	38241 (1.00)	0 (405468.00)	8 (1.00)	33540 (1.00)	0 (654085.00)	14 (1.00)
timcon cur	38135 (1.00)	4184 (96.91)	8 (1.00)	33306 (1.01)	7776 (84.12)	14 (1.00)
epitg 949	38101 (1.00)	26358 (15.38)	8 (1.00)	33270 (1.00)	17722 (36.91)	14 (1.00)
tger 949	38087 (1.00)	4121 (98.39)	8 (1.00)	33258 (1.00)	18275 (35.79)	14 (1.00)
targf 949	36786 (1.04)	87765 (4.62)	8 (1.00)	31915 (1.04)	88509 (7.39)	15 (1.07)
ticcon 949	36785 (1.00)	38 (10670.20)	8 (1.00)	31915 (1.00)	95 (6885.11)	14 (1.00)
dtgttp 949	36774 (1.00)	212 (1912.58)	8 (1.00)	31885 (1.00)	577 (1133.60)	14 (1.00)
rtdif 949	36543 (1.01)	11156 (36.35)	8 (1.00)	31338 (1.02)	16163 (40.47)	14 (1.00)
epimaxk 949	35463 (1.03)	47010 (8.63)	8 (1.00)	30812 (1.02)	41675 (15.69)	15 (1.07)
drp 949	35376 (1.00)	2795 (145.07)	8 (1.00)	30604 (1.01)	12500 (52.33)	14 (1.00)
*phivtx*1 949	28806 (1.23)	89495 (4.53)	8 (1.00)	26249 (1.17)	144733 (4.52)	15 (1.07)
eiccon 949	27990 (1.03)	14116 (28.72)	8 (1.00)	25325 (1.04)	28883 (22.65)	16 (1.14)
opsveto 949	23936 (1.17)	113833 (3.56)	8 (1.00)	20754 (1.22)	202745 (3.23)	17 (1.21)
kic 949	19000 (1.26)	98906 (4.10)	8 (1.00)	17961 (1.16)	130535 (5.01)	14 (1.00)
tggeo cur	16827 (1.13)	162074 (2.50)	8 (1.00)	14855 (1.21)	275388 (2.38)	15 (1.07)

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Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
tdedge 949	16100 (1.05)	64632 (6.27)	8 (1.00)	14274 (1.04)	94323 (6.93)	14 (1.00)
tgzfool 949	16100 (1.00)	2478 (163.63)	8 (1.00)	14273 (1.00)	10104 (64.74)	14 (1.00)
upvtrs cur	14035 (1.15)	46493 (8.72)	8 (1.00)	12833 (1.11)	54697 (11.96)	14 (1.00)
rvtrs cur	13974 (1.00)	5636 (71.94)	8 (1.00)	12776 (1.00)	13274 (49.28)	14 (1.00)
tgtcon cur	13783 (1.01)	24528 (16.53)	8 (1.00)	11374 (1.12)	54148 (12.08)	33 (2.36)
b4etcon cur	13380 (1.03)	13216 (30.68)	8 (1.00)	11134 (1.02)	20825 (31.41)	14 (1.00)
b4ekz cur	1747 (7.66)	307776 (1.32)	10 (1.25)	4065 (2.74)	451738 (1.45)	21 (1.50)
b4ekzic cur	1747 (1.00)	28447 (14.25)	8 (1.00)	4065 (1.00)	69489 (9.41)	14 (1.00)
b4tim off	1747 (1.00)	0 (405468.00)	8 (1.00)	4065 (1.00)	0 (654085.00)	14 (1.00)
tgktim off	1747 (1.00)	0 (405468.00)	8 (1.00)	4065 (1.00)	0 (654085.00)	14 (1.00)
tgenr off	1747 (1.00)	0 (405468.00)	8 (1.00)	4065 (1.00)	0 (654085.00)	14 (1.00)
*chi*567 *off*	1747 (1.00)	0 (405468.00)	8 (1.00)	4065 (1.00)	0 (654085.00)	14 (1.00)
npitg	1740 (1.00)	11761 (34.48)	8 (1.00)	3909 (1.04)	48590 (13.46)	14 (1.00)
verrng off	1740 (1.00)	0 (405468.00)	8 (1.00)	3909 (1.00)	0 (654085.00)	14 (1.00)
*chi*5*max off*	1740 (1.00)	0 (405468.00)	8 (1.00)	3909 (1.00)	0 (654085.00)	14 (1.00)
angli off	1740 (1.00)	0 (405468.00)	8 (1.00)	3909 (1.00)	0 (654085.00)	14 (1.00)
ALLKfit off	1740 (1.00)	0 (405468.00)	8 (1.00)	3909 (1.00)	0 (654085.00)	14 (1.00)
tpics off	1740 (1.00)	0 (405468.00)	8 (1.00)	3909 (1.00)	0 (654085.00)	14 (1.00)
epionk off	1740 (1.00)	0 (405468.00)	8 (1.00)	3909 (1.00)	0 (654085.00)	14 (1.00)
ccdpul off	1740 (1.00)	0 (405468.00)	8 (1.00)	3909 (1.00)	0 (654085.00)	14 (1.00)
timkf off	1740 (1.00)	0 (405468.00)	8 (1.00)	3909 (1.00)	0 (654085.00)	14 (1.00)
$\overline{DELCO}$ 949	**1736** (1.00)	138590 (2.93)	8 (1.00)	**2108** (1.85)	183889 (3.56)	46 (3.29)
cpitrs cur	226 (7.68)	347377 (1.17)	451 (56.38)	1243 (1.70)	297310 (2.20)	294 (21.00)
cpitail cur	224 (1.01)	64755 (6.26)	8 (1.00)	1242 (1.00)	52804 (12.39)	14 (1.00)
b4dedx cur	214 (1.05)	172331 (2.35)	9 (1.12)	1226 (1.01)	196446 (3.33)	14 (1.00)
cktrs cur	25 (8.56)	50745 (7.99)	31 (3.88)	448 (2.74)	208742 (3.13)	115 (8.21)
cktail cur	15 (1.67)	38423 (10.55)	12 (1.50)	326 (1.37)	135216 (4.84)	22 (1.57)
PV cur	11 (1.36)	232333 (1.75)	8 (1.00)	25 (13.04)	376655 (1.74)	198 (14.14)
piflg cur	11 (1.00)	6709 (60.44)	8 (1.00)	25 (1.00)	15434 (42.38)	14 (1.00)
*ev*502 *cur*	10 (1.10)	80728 (5.02)	8 (1.00)	19 (1.32)	174904 (3.74)	14 (1.00)
elveto cur	9 (1.11)	53750 (7.54)	8 (1.00)	17 (1.12)	135422 (4.83)	14 (1.00)
tdfool cur	9 (1.00)	26409 (15.35)	8 (1.00)	17 (1.00)	95454 (6.85)	14 (1.00)
*tdvarnn*02 *cur*	8 (1.12)	97792 (4.15)	8 (1.00)	14 (1.21)	213045 (3.07)	14 (1.00)
TD *cur*	**8** (1.00)	172945 (2.34)	8 (1.00)	**14** (1.00)	345081 (1.90)	14 (1.00)
Total Rej.	217.00			150.57		

Table 13: 1-Beam Normalization. Branch no. 2

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
BOX 949	405468 (0.00)	0 (405468.00)	57 (1.00)	654085 (0.00)	0 (654085.00)	217 (1.00)
rsdedxmax cur	405468 (1.00)	0 (405468.00)	57 (1.00)	654085 (1.00)	0 (654085.00)	217 (1.00)
rsdedxcl 949	405468 (1.00)	0 (405468.00)	57 (1.00)	654085 (1.00)	0 (654085.00)	217 (1.00)
rslike cur	405468 (1.00)	0 (405468.00)	57 (1.00)	654085 (1.00)	0 (654085.00)	217 (1.00)
rngmom cur	376276 (1.08)	29192 (13.89)	57 (1.00)	506041 (1.29)	148044 (4.42)	217 (1.00)
BOX 949	376276 (1.00)	0 (405468.00)	57 (1.00)	506041 (1.00)	0 (654085.00)	217 (1.00)
*icodel*14 *cur*	374316 (1.01)	3961 (102.36)	57 (1.00)	506041 (1.00)	3 (218028.00)	217 (1.00)
*cos*3*d cur*	348023 (1.08)	28549 (14.20)	57 (1.00)	461701 (1.10)	51196 (12.78)	217 (1.00)
*layv*4 949	348021 (1.00)	2 (202734.00)	57 (1.00)	461701 (1.00)	0 (654085.00)	217 (1.00)
zfrf cur	325899 (1.07)	45753 (8.86)	57 (1.00)	461415 (1.00)	648 (1009.39)	217 (1.00)
zutout cur	325785 (1.00)	977 (415.01)	57 (1.00)	461128 (1.00)	557 (1174.30)	217 (1.00)
FIDUCIAL 949	325785 (1.00)	53686 (7.55)	57 (1.00)	461128 (1.00)	52109 (12.55)	217 (1.00)
utcqual 949	252148 (1.29)	114267 (3.55)	57 (1.00)	342630 (1.35)	208256 (3.14)	217 (1.00)
rsdedxcl 949	252148 (1.00)	0 (405468.00)	57 (1.00)	342630 (1.00)	0 (654085.00)	217 (1.00)
rsdedxmax cur	252148 (1.00)	0 (405468.00)	57 (1.00)	342630 (1.00)	0 (654085.00)	217 (1.00)
rslike cur	252148 (1.00)	0 (405468.00)	57 (1.00)	342630 (1.00)	0 (654085.00)	217 (1.00)
tgktim off	252148 (1.00)	0 (405468.00)	57 (1.00)	342630 (1.00)	0 (654085.00)	217 (1.00)
rngmom cur	252148 (1.00)	29192 (13.89)	57 (1.00)	342630 (1.00)	148044 (4.42)	217 (1.00)
*prrf*1 949	221464 (1.14)	58307 (6.95)	57 (1.00)	205095 (1.67)	253120 (2.58)	217 (1.00)
prrfz 949	195228 (1.13)	58421 (6.94)	57 (1.00)	171907 (1.19)	102690 (6.37)	217 (1.00)
PRRF 949	195228 (1.00)	103898 (3.90)	57 (1.00)	171907 (1.00)	323368 (2.02)	217 (1.00)
rtghi cur	194688 (1.00)	1747 (232.09)	57 (1.00)	171766 (1.00)	1813 (360.77)	217 (1.00)
etghi cur	187587 (1.04)	13027 (31.13)	57 (1.00)	168828 (1.02)	14056 (46.53)	217 (1.00)
*tgdedx*1 *cur*	167218 (1.12)	45439 (8.92)	57 (1.00)	132090 (1.28)	121866 (5.37)	217 (1.00)
*tgdedx*2 *cur*	151163 (1.11)	38479 (10.54)	57 (1.00)	122356 (1.08)	56131 (11.65)	217 (1.00)
tgdedx *cur*	151163 (1.00)	91524 (4.43)	57 (1.00)	122356 (1.00)	185457 (3.53)	217 (1.00)
*tglike*1 *cur*	139711 (1.08)	47861 (8.47)	57 (1.00)	111768 (1.09)	95963 (6.82)	217 (1.00)
*tglike*2 *cur*	134246 (1.04)	37487 (10.82)	57 (1.00)	105714 (1.06)	84235 (7.76)	217 (1.00)
TGLIKE *cur*	134246 (1.00)	63787 (6.36)	57 (1.00)	105714 (1.00)	128668 (5.08)	217 (1.00)
*tgdb*4 *cur*	124973 (1.07)	30670 (13.22)	57 (1.00)	97845 (1.08)	53110 (12.32)	217 (1.00)
*tgdb*4*tip cur*	91567 (1.36)	126413 (3.21)	57 (1.00)	73438 (1.33)	184461 (3.55)	217 (1.00)
tgdvxtip cur	77697 (1.18)	84301 (4.81)	57 (1.00)	63488 (1.16)	112127 (5.83)	217 (1.00)
tgdvxpi cur	68398 (1.14)	73883 (5.49)	57 (1.00)	59332 (1.07)	76314 (8.57)	217 (1.00)
TGB4 *cur*	68398 (1.00)	207101 (1.96)	57 (1.00)	59332 (1.00)	278240 (2.35)	217 (1.00)
pigap cur	64635 (1.06)	33913 (11.96)	57 (1.00)	57181 (1.04)	47738 (13.70)	217 (1.00)
KIN 949	64635 (1.00)	340833 (1.19)	57 (1.00)	57181 (1.00)	596904 (1.10)	217 (1.00)
tgpv cur	48432 (1.33)	153571 (2.64)	57 (1.00)	41751 (1.37)	199153 (3.28)	217 (1.00)
bwtrs cur	42063 (1.15)	161277 (2.51)	68 (1.19)	37108 (1.13)	147119 (4.45)	237 (1.09)
*b*4*trs cur*	38267 (1.10)	154090 (2.63)	63 (1.11)	33791 (1.10)	143751 (4.55)	243 (1.12)
*b*4*ccd cur*	38241 (1.00)	3094 (131.05)	57 (1.00)	33540 (1.01)	7445 (87.86)	218 (1.00)
tgqualt 949	38241 (1.00)	0 (405468.00)	57 (1.00)	33540 (1.00)	0 (654085.00)	217 (1.00)
timcon cur	38135 (1.00)	4184 (96.91)	57 (1.00)	33306 (1.01)	7776 (84.12)	217 (1.00)
epitg 949	38101 (1.00)	26358 (15.38)	57 (1.00)	33270 (1.00)	17722 (36.91)	217 (1.00)
tger 949	38087 (1.00)	4121 (98.39)	57 (1.00)	33258 (1.00)	18275 (35.79)	217 (1.00)
targf 949	36786 (1.04)	87765 (4.62)	57 (1.00)	31915 (1.04)	88509 (7.39)	226 (1.04)
ticcon 949	36785 (1.00)	38 (10670.20)	57 (1.00)	31915 (1.00)	95 (6885.11)	217 (1.00)
dtgttp 949	36774 (1.00)	212 (1912.58)	57 (1.00)	31885 (1.00)	577 (1133.60)	217 (1.00)
rtdif 949	36543 (1.01)	11156 (36.35)	58 (1.02)	31338 (1.02)	16163 (40.47)	224 (1.03)
epimaxk 949	35463 (1.03)	47010 (8.63)	60 (1.05)	30812 (1.02)	41675 (15.69)	222 (1.02)
drp 949	35376 (1.00)	2795 (145.07)	57 (1.00)	30604 (1.01)	12500 (52.33)	218 (1.00)
*phivtx*1 949	28806 (1.23)	89495 (4.53)	72 (1.26)	26249 (1.17)	144733 (4.52)	245 (1.13)
eiccon 949	27990 (1.03)	14116 (28.72)	61 (1.07)	25325 (1.04)	28883 (22.65)	221 (1.02)
opsveto 949	23936 (1.17)	113833 (3.56)	78 (1.37)	20754 (1.22)	202745 (3.23)	271 (1.25)
kic 949	19000 (1.26)	98906 (4.10)	57 (1.00)	17961 (1.16)	130535 (5.01)	218 (1.00)
tggeo cur	16827 (1.13)	162074 (2.50)	63 (1.11)	14855 (1.21)	275388 (2.38)	255 (1.18)

continued on next page

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
tdedge 949	16100 (1.05)	64632 (6.27)	60 (1.05)	14274 (1.04)	94323 (6.93)	227 (1.05)
tgzfool 949	16100 (1.00)	2478 (163.63)	57 (1.00)	14273 (1.00)	10104 (64.74)	217 (1.00)
upvtrs cur	14035 (1.15)	46493 (8.72)	58 (1.02)	12833 (1.11)	54697 (11.96)	224 (1.03)
rvtrs cur	13974 (1.00)	5636 (71.94)	58 (1.02)	12776 (1.00)	13274 (49.28)	219 (1.01)
tgtcon cur	13783 (1.01)	24528 (16.53)	58 (1.02)	11374 (1.12)	54148 (12.08)	224 (1.03)
b4etcon cur	13380 (1.03)	13216 (30.68)	58 (1.02)	11134 (1.02)	20825 (31.41)	221 (1.02)
b4ekz cur	1747 (7.66)	307776 (1.32)	141 (2.47)	4065 (2.74)	451738 (1.45)	439 (2.02)
b4ekzic cur	1747 (1.00)	28447 (14.25)	57 (1.00)	4065 (1.00)	69489 (9.41)	217 (1.00)
b4tim off	1747 (1.00)	0 (405468.00)	57 (1.00)	4065 (1.00)	0 (654085.00)	217 (1.00)
tgktim off	1747 (1.00)	0 (405468.00)	57 (1.00)	4065 (1.00)	0 (654085.00)	217 (1.00)
tgenr off	1747 (1.00)	0 (405468.00)	57 (1.00)	4065 (1.00)	0 (654085.00)	217 (1.00)
*chi*567 *off*	1747 (1.00)	0 (405468.00)	57 (1.00)	4065 (1.00)	0 (654085.00)	217 (1.00)
npitg	1740 (1.00)	11761 (34.48)	57 (1.00)	3909 (1.04)	48590 (13.46)	220 (1.01)
verrng off	1740 (1.00)	0 (405468.00)	57 (1.00)	3909 (1.00)	0 (654085.00)	217 (1.00)
*chi*5*max off*	1740 (1.00)	0 (405468.00)	57 (1.00)	3909 (1.00)	0 (654085.00)	217 (1.00)
angli off	1740 (1.00)	0 (405468.00)	57 (1.00)	3909 (1.00)	0 (654085.00)	217 (1.00)
ALLKfit off	1740 (1.00)	0 (405468.00)	57 (1.00)	3909 (1.00)	0 (654085.00)	217 (1.00)
tpics off	1740 (1.00)	0 (405468.00)	57 (1.00)	3909 (1.00)	0 (654085.00)	217 (1.00)
epionk off	1740 (1.00)	0 (405468.00)	57 (1.00)	3909 (1.00)	0 (654085.00)	217 (1.00)
ccdpul off	1740 (1.00)	0 (405468.00)	57 (1.00)	3909 (1.00)	0 (654085.00)	217 (1.00)
timkf off	1740 (1.00)	0 (405468.00)	57 (1.00)	3909 (1.00)	0 (654085.00)	217 (1.00)
$\overline{DELCO\ 949}$	1736 (1.00)	138590 (2.93)	57 (1.00)	2108 (1.85)	183889 (3.56)	218 (1.00)
cpitrs cur	226 (7.68)	347377 (1.17)	77 (1.35)	1243 (1.70)	297310 (2.20)	230 (1.06)
cpitail cur	224 (1.01)	64755 (6.26)	57 (1.00)	1242 (1.00)	52804 (12.39)	217 (1.00)
b4dedx cur	214 (1.05)	172331 (2.35)	60 (1.05)	1226 (1.01)	196446 (3.33)	222 (1.02)
$\overline{cktrs \cdot cktail}$	**199** (1.08)	343590 (1.18)	65 (1.14)	**900** (1.36)	417307 (1.57)	231 (1.06)
PV cur	98 (2.03)	232333 (1.75)	119 (2.09)	377 (2.39)	376655 (1.74)	511 (2.35)
piflg cur	98 (1.00)	6709 (60.44)	57 (1.00)	377 (1.00)	15434 (42.38)	217 (1.00)
*ev*502 *cur*	73 (1.34)	80728 (5.02)	57 (1.00)	287 (1.31)	174904 (3.74)	217 (1.00)
elveto cur	70 (1.04)	53750 (7.54)	57 (1.00)	262 (1.10)	135422 (4.83)	217 (1.00)
tdfool cur	70 (1.00)	26409 (15.35)	57 (1.00)	262 (1.00)	95454 (6.85)	217 (1.00)
*tdvarnn*02 *cur*	57 (1.23)	97792 (4.15)	57 (1.00)	217 (1.21)	213045 (3.07)	217 (1.00)
TD *cur*	**57** (1.00)	172945 (2.34)	57 (1.00)	**217** (1.00)	345081 (1.90)	217 (1.00)
Total Rej.	3.49			4.15		

Table 14: 1-Beam Normalization. Branch no. 3

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
BOX 949	405468 (0.00)	0 (405468.00)	7 (1.00)	654085 (0.00)	0 (654085.00)	312 (1.00)
rsdedxmax cur	405468 (1.00)	0 (405468.00)	7 (1.00)	654085 (1.00)	0 (654085.00)	312 (1.00)
rsdedxcl 949	405468 (1.00)	0 (405468.00)	7 (1.00)	654085 (1.00)	0 (654085.00)	312 (1.00)
rslike cur	405468 (1.00)	0 (405468.00)	7 (1.00)	654085 (1.00)	0 (654085.00)	312 (1.00)
rngmom cur	376276 (1.08)	29192 (13.89)	7 (1.00)	506041 (1.29)	148044 (4.42)	312 (1.00)
BOX 949	376276 (1.00)	0 (405468.00)	7 (1.00)	506041 (1.00)	0 (654085.00)	312 (1.00)
*icodel*14 *cur*	374316 (1.01)	3961 (102.36)	7 (1.00)	506041 (1.00)	3 (218028.00)	312 (1.00)
*cos*3*d cur*	348023 (1.08)	28549 (14.20)	7 (1.00)	461701 (1.10)	51196 (12.78)	312 (1.00)
*layv*4 949	348021 (1.00)	2 (202734.00)	7 (1.00)	461701 (1.00)	0 (654085.00)	312 (1.00)
zfrf cur	325899 (1.07)	45753 (8.86)	7 (1.00)	461415 (1.00)	648 (1009.39)	312 (1.00)
zutout cur	325785 (1.00)	977 (415.01)	7 (1.00)	461128 (1.00)	557 (1174.30)	312 (1.00)
FIDUCIAL 949	325785 (1.00)	53686 (7.55)	7 (1.00)	461128 (1.00)	52109 (12.55)	312 (1.00)
utcqual 949	252148 (1.29)	114267 (3.55)	7 (1.00)	342630 (1.35)	208256 (3.14)	312 (1.00)
rsdedxcl 949	252148 (1.00)	0 (405468.00)	7 (1.00)	342630 (1.00)	0 (654085.00)	312 (1.00)
rsdedxmax cur	252148 (1.00)	0 (405468.00)	7 (1.00)	342630 (1.00)	0 (654085.00)	312 (1.00)
rslike cur	252148 (1.00)	0 (405468.00)	7 (1.00)	342630 (1.00)	0 (654085.00)	312 (1.00)
tgktim off	252148 (1.00)	0 (405468.00)	7 (1.00)	342630 (1.00)	0 (654085.00)	312 (1.00)
rngmom cur	252148 (1.00)	29192 (13.89)	7 (1.00)	342630 (1.00)	148044 (4.42)	312 (1.00)
*prrf*1 949	221464 (1.14)	58307 (6.95)	7 (1.00)	205095 (1.67)	253120 (2.58)	312 (1.00)
prrfz 949	195228 (1.13)	58421 (6.94)	7 (1.00)	171907 (1.19)	102690 (6.37)	312 (1.00)
PRRF 949	195228 (1.00)	103898 (3.90)	7 (1.00)	171907 (1.00)	323368 (2.02)	312 (1.00)
rtghi cur	194688 (1.00)	1747 (232.09)	7 (1.00)	171766 (1.00)	1813 (360.77)	312 (1.00)
etghi cur	187587 (1.04)	13027 (31.13)	7 (1.00)	168828 (1.02)	14056 (46.53)	312 (1.00)
*tgdedx*1 *cur*	167218 (1.12)	45439 (8.92)	7 (1.00)	132090 (1.28)	121866 (5.37)	312 (1.00)
*tgdedx*2 *cur*	151163 (1.11)	38479 (10.54)	7 (1.00)	122356 (1.08)	56131 (11.65)	312 (1.00)
tgdedx *cur*	151163 (1.00)	91524 (4.43)	7 (1.00)	122356 (1.00)	185457 (3.53)	312 (1.00)
*tglike*1 *cur*	139711 (1.08)	47861 (8.47)	7 (1.00)	111768 (1.09)	95963 (6.82)	312 (1.00)
*tglike*2 *cur*	134246 (1.04)	37487 (10.82)	7 (1.00)	105714 (1.06)	84235 (7.76)	312 (1.00)
TGLIKE *cur*	134246 (1.00)	63787 (6.36)	7 (1.00)	105714 (1.00)	128668 (5.08)	312 (1.00)
*tgdb*4 *cur*	124973 (1.07)	30670 (13.22)	7 (1.00)	97845 (1.08)	53110 (12.32)	312 (1.00)
*tgdb*4*tip cur*	91567 (1.36)	126413 (3.21)	7 (1.00)	73438 (1.33)	184461 (3.55)	312 (1.00)
tgdvxtip cur	77697 (1.18)	84301 (4.81)	7 (1.00)	63488 (1.16)	112127 (5.83)	312 (1.00)
tgdvxpi cur	68398 (1.14)	73883 (5.49)	7 (1.00)	59332 (1.07)	76314 (8.57)	312 (1.00)
TGB4 *cur*	68398 (1.00)	207101 (1.96)	7 (1.00)	59332 (1.00)	278240 (2.35)	312 (1.00)
pigap cur	64635 (1.06)	33913 (11.96)	7 (1.00)	57181 (1.04)	47738 (13.70)	312 (1.00)
KIN 949	64635 (1.00)	340833 (1.19)	7 (1.00)	57181 (1.00)	596904 (1.10)	312 (1.00)
tgpv cur	48432 (1.33)	153571 (2.64)	8 (1.14)	41751 (1.37)	199153 (3.28)	343 (1.10)
bwtrs cur	42063 (1.15)	161277 (2.51)	8 (1.14)	37108 (1.13)	147119 (4.45)	325 (1.04)
*b*4*trs cur*	38267 (1.10)	154090 (2.63)	7 (1.00)	33791 (1.10)	143751 (4.55)	325 (1.04)
*b*4*ccd cur*	38241 (1.00)	3094 (131.05)	7 (1.00)	33540 (1.01)	7445 (87.86)	323 (1.04)
tgqualt 949	38241 (1.00)	0 (405468.00)	7 (1.00)	33540 (1.00)	0 (654085.00)	312 (1.00)
timcon cur	38135 (1.00)	4184 (96.91)	7 (1.00)	33306 (1.01)	7776 (84.12)	312 (1.00)
epitg 949	38101 (1.00)	26358 (15.38)	7 (1.00)	33270 (1.00)	17722 (36.91)	312 (1.00)
tger 949	38087 (1.00)	4121 (98.39)	7 (1.00)	33258 (1.00)	18275 (35.79)	312 (1.00)
targf 949	36786 (1.04)	87765 (4.62)	7 (1.00)	31915 (1.04)	88509 (7.39)	318 (1.02)
ticcon 949	36785 (1.00)	38 (10670.20)	7 (1.00)	31915 (1.00)	95 (6885.11)	312 (1.00)
dtgttp 949	36774 (1.00)	212 (1912.58)	7 (1.00)	31885 (1.00)	577 (1133.60)	312 (1.00)
rtdif 949	36543 (1.01)	11156 (36.35)	7 (1.00)	31338 (1.02)	16163 (40.47)	315 (1.01)
epimaxk 949	35463 (1.03)	47010 (8.63)	7 (1.00)	30812 (1.02)	41675 (15.69)	321 (1.03)
drp 949	35376 (1.00)	2795 (145.07)	7 (1.00)	30604 (1.01)	12500 (52.33)	314 (1.01)
*phivtx*1 949	28806 (1.23)	89495 (4.53)	8 (1.14)	26249 (1.17)	144733 (4.52)	361 (1.16)
eiccon 949	27990 (1.03)	14116 (28.72)	7 (1.00)	25325 (1.04)	28883 (22.65)	319 (1.02)
opsveto 949	23936 (1.17)	113833 (3.56)	7 (1.00)	20754 (1.22)	202745 (3.23)	338 (1.08)
kic 949	19000 (1.26)	98906 (4.10)	7 (1.00)	17961 (1.16)	130535 (5.01)	313 (1.00)
tggeo cur	16827 (1.13)	162074 (2.50)	8 (1.14)	14855 (1.21)	275388 (2.38)	380 (1.22)

continued on next page

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
tdedge 949	16100 (1.05)	64632 (6.27)	7 (1.00)	14274 (1.04)	94323 (6.93)	321 (1.03)
tgzfool 949	16100 (1.00)	2478 (163.63)	7 (1.00)	14273 (1.00)	10104 (64.74)	312 (1.00)
upvtrs cur	14035 (1.15)	46493 (8.72)	7 (1.00)	12833 (1.11)	54697 (11.96)	320 (1.03)
rvtrs cur	13974 (1.00)	5636 (71.94)	7 (1.00)	12776 (1.00)	13274 (49.28)	314 (1.01)
tgtcon cur	13783 (1.01)	24528 (16.53)	7 (1.00)	11374 (1.12)	54148 (12.08)	735 (2.36)
b4etcon cur	13380 (1.03)	13216 (30.68)	9 (1.29)	11134 (1.02)	20825 (31.41)	316 (1.01)
b4ekz cur	1747 (7.66)	307776 (1.32)	14 (2.00)	4065 (2.74)	451738 (1.45)	400 (1.28)
b4ekzic cur	1747 (1.00)	28447 (14.25)	7 (1.00)	4065 (1.00)	69489 (9.41)	312 (1.00)
b4tim off	1747 (1.00)	0 (405468.00)	7 (1.00)	4065 (1.00)	0 (654085.00)	312 (1.00)
tgktim off	1747 (1.00)	0 (405468.00)	7 (1.00)	4065 (1.00)	0 (654085.00)	312 (1.00)
tgenr off	1747 (1.00)	0 (405468.00)	7 (1.00)	4065 (1.00)	0 (654085.00)	312 (1.00)
*chi*567 *off*	1747 (1.00)	0 (405468.00)	7 (1.00)	4065 (1.00)	0 (654085.00)	312 (1.00)
npitg	1740 (1.00)	11761 (34.48)	7 (1.00)	3909 (1.04)	48590 (13.46)	343 (1.10)
verrng off	1740 (1.00)	0 (405468.00)	7 (1.00)	3909 (1.00)	0 (654085.00)	312 (1.00)
*chi*5*max off*	1740 (1.00)	0 (405468.00)	7 (1.00)	3909 (1.00)	0 (654085.00)	312 (1.00)
angli off	1740 (1.00)	0 (405468.00)	7 (1.00)	3909 (1.00)	0 (654085.00)	312 (1.00)
ALLKfit off	1740 (1.00)	0 (405468.00)	7 (1.00)	3909 (1.00)	0 (654085.00)	312 (1.00)
tpics off	1740 (1.00)	0 (405468.00)	7 (1.00)	3909 (1.00)	0 (654085.00)	312 (1.00)
epionk off	1740 (1.00)	0 (405468.00)	7 (1.00)	3909 (1.00)	0 (654085.00)	312 (1.00)
ccdpul off	1740 (1.00)	0 (405468.00)	7 (1.00)	3909 (1.00)	0 (654085.00)	312 (1.00)
timkf off	1740 (1.00)	0 (405468.00)	7 (1.00)	3909 (1.00)	0 (654085.00)	312 (1.00)
$\overline{DELCO}$ 949	1736 (1.00)	138590 (2.93)	11 (1.57)	2108 (1.85)	183889 (3.56)	2038 (6.53)
cpitrs cur	226 (7.68)	347377 (1.17)	386 (55.14)	1243 (1.70)	297310 (2.20)	525 (1.68)
cpitail cur	224 (1.01)	64755 (6.26)	7 (1.00)	1242 (1.00)	52804 (12.39)	313 (1.00)
b4dedx cur	214 (1.05)	172331 (2.35)	8 (1.14)	1226 (1.01)	196446 (3.33)	313 (1.00)
$\overline{PV \cdot TD}$	**149** (1.44)	96379 (4.21)	15 (2.14)	**995** (1.23)	122790 (5.33)	326 (1.04)
cktrs cur	13 (11.46)	50745 (7.99)	82 (11.71)	426 (2.34)	208742 (3.13)	589 (1.89)
cktail cur	**7** (1.86)	38423 (10.55)	13 (1.86)	**312** (1.37)	135216 (4.84)	426 (1.37)
Total Rej.	21.29			3.19		

Table 15: 1-Beam Normalization. Branch no. 4

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
BOX 949	405468 (0.00)	0 (405468.00)	525 (1.00)	654085 (0.00)	0 (654085.00)	321 (1.00)
rsdedxmax cur	405468 (1.00)	0 (405468.00)	525 (1.00)	654085 (1.00)	0 (654085.00)	321 (1.00)
rsdedxcl 949	405468 (1.00)	0 (405468.00)	525 (1.00)	654085 (1.00)	0 (654085.00)	321 (1.00)
rslike cur	405468 (1.00)	0 (405468.00)	525 (1.00)	654085 (1.00)	0 (654085.00)	321 (1.00)
rngmom cur	376276 (1.08)	29192 (13.89)	525 (1.00)	506041 (1.29)	148044 (4.42)	321 (1.00)
BOX 949	376276 (1.00)	0 (405468.00)	525 (1.00)	506041 (1.00)	0 (654085.00)	321 (1.00)
*icodel*14 *cur*	374316 (1.01)	3961 (102.36)	525 (1.00)	506041 (1.00)	3 (218028.00)	321 (1.00)
*cos*3*d cur*	348023 (1.08)	28549 (14.20)	525 (1.00)	461701 (1.10)	51196 (12.78)	321 (1.00)
*layv*4 949	348021 (1.00)	2 (202734.00)	525 (1.00)	461701 (1.00)	0 (654085.00)	321 (1.00)
zfrf cur	325899 (1.07)	45753 (8.86)	525 (1.00)	461415 (1.00)	648 (1009.39)	321 (1.00)
zutout cur	325785 (1.00)	977 (415.01)	525 (1.00)	461128 (1.00)	557 (1174.30)	321 (1.00)
FIDUCIAL 949	325785 (1.00)	53686 (7.55)	525 (1.00)	461128 (1.00)	52109 (12.55)	321 (1.00)
utcqual 949	252148 (1.29)	114267 (3.55)	525 (1.00)	342630 (1.35)	208256 (3.14)	321 (1.00)
rsdedxcl 949	252148 (1.00)	0 (405468.00)	525 (1.00)	342630 (1.00)	0 (654085.00)	321 (1.00)
rsdedxmax cur	252148 (1.00)	0 (405468.00)	525 (1.00)	342630 (1.00)	0 (654085.00)	321 (1.00)
rslike cur	252148 (1.00)	0 (405468.00)	525 (1.00)	342630 (1.00)	0 (654085.00)	321 (1.00)
tgktim off	252148 (1.00)	0 (405468.00)	525 (1.00)	342630 (1.00)	0 (654085.00)	321 (1.00)
rngmom cur	252148 (1.00)	29192 (13.89)	525 (1.00)	342630 (1.00)	148044 (4.42)	321 (1.00)
*prrf*1 949	221464 (1.14)	58307 (6.95)	525 (1.00)	205095 (1.67)	253120 (2.58)	321 (1.00)
prrfz 949	195228 (1.13)	58421 (6.94)	525 (1.00)	171907 (1.19)	102690 (6.37)	321 (1.00)
PRRF 949	195228 (1.00)	103898 (3.90)	525 (1.00)	171907 (1.00)	323368 (2.02)	321 (1.00)
rtghi cur	194688 (1.00)	1747 (232.09)	525 (1.00)	171766 (1.00)	1813 (360.77)	321 (1.00)
etghi cur	187587 (1.04)	13027 (31.13)	525 (1.00)	168828 (1.02)	14056 (46.53)	321 (1.00)
*tgdedx*1 *cur*	167218 (1.12)	45439 (8.92)	525 (1.00)	132090 (1.28)	121866 (5.37)	321 (1.00)
*tgdedx*2 *cur*	151163 (1.11)	38479 (10.54)	525 (1.00)	122356 (1.08)	56131 (11.65)	321 (1.00)
tgdedx *cur*	151163 (1.00)	91524 (4.43)	525 (1.00)	122356 (1.00)	185457 (3.53)	321 (1.00)
*tglike*1 *cur*	139711 (1.08)	47861 (8.47)	525 (1.00)	111768 (1.09)	95963 (6.82)	321 (1.00)
*tglike*2 *cur*	134246 (1.04)	37487 (10.82)	525 (1.00)	105714 (1.06)	84235 (7.76)	321 (1.00)
TGLIKE *cur*	134246 (1.00)	63787 (6.36)	525 (1.00)	105714 (1.00)	128668 (5.08)	321 (1.00)
*tgdb*4 *cur*	124973 (1.07)	30670 (13.22)	525 (1.00)	97845 (1.08)	53110 (12.32)	321 (1.00)
*tgdb*4*tip cur*	91567 (1.36)	126413 (3.21)	525 (1.00)	73438 (1.33)	184461 (3.55)	321 (1.00)
tgdvxtip cur	77697 (1.18)	84301 (4.81)	525 (1.00)	63488 (1.16)	112127 (5.83)	321 (1.00)
tgdvxpi cur	68398 (1.14)	73883 (5.49)	525 (1.00)	59332 (1.07)	76314 (8.57)	321 (1.00)
TGB4 *cur*	68398 (1.00)	207101 (1.96)	525 (1.00)	59332 (1.00)	278240 (2.35)	321 (1.00)
pigap cur	64635 (1.06)	33913 (11.96)	525 (1.00)	57181 (1.04)	47738 (13.70)	321 (1.00)
KIN 949	64635 (1.00)	340833 (1.19)	525 (1.00)	57181 (1.00)	596904 (1.10)	321 (1.00)
tgpv cur	48432 (1.33)	153571 (2.64)	550 (1.05)	41751 (1.37)	199153 (3.28)	339 (1.06)
bwtrs cur	42063 (1.15)	161277 (2.51)	575 (1.10)	37108 (1.13)	147119 (4.45)	345 (1.07)
*b*4*trs cur*	38267 (1.10)	154090 (2.63)	589 (1.12)	33791 (1.10)	143751 (4.55)	366 (1.14)
*b*4*ccd cur*	38241 (1.00)	3094 (131.05)	526 (1.00)	33540 (1.01)	7445 (87.86)	321 (1.00)
tgqualt 949	38241 (1.00)	0 (405468.00)	525 (1.00)	33540 (1.00)	0 (654085.00)	321 (1.00)
timcon cur	38135 (1.00)	4184 (96.91)	525 (1.00)	33306 (1.01)	7776 (84.12)	321 (1.00)
epitg 949	38101 (1.00)	26358 (15.38)	525 (1.00)	33270 (1.00)	17722 (36.91)	321 (1.00)
tger 949	38087 (1.00)	4121 (98.39)	525 (1.00)	33258 (1.00)	18275 (35.79)	321 (1.00)
targf 949	36786 (1.04)	87765 (4.62)	541 (1.03)	31915 (1.04)	88509 (7.39)	329 (1.02)
ticcon 949	36785 (1.00)	38 (10670.20)	525 (1.00)	31915 (1.00)	95 (6885.11)	321 (1.00)
dtgttp 949	36774 (1.00)	212 (1912.58)	525 (1.00)	31885 (1.00)	577 (1133.60)	321 (1.00)
rtdif 949	36543 (1.01)	11156 (36.35)	529 (1.01)	31338 (1.02)	16163 (40.47)	321 (1.00)
epimaxk 949	35463 (1.03)	47010 (8.63)	536 (1.02)	30812 (1.02)	41675 (15.69)	334 (1.04)
drp 949	35376 (1.00)	2795 (145.07)	525 (1.00)	30604 (1.01)	12500 (52.33)	321 (1.00)
*phivtx*1 949	28806 (1.23)	89495 (4.53)	633 (1.21)	26249 (1.17)	144733 (4.52)	369 (1.15)
eiccon 949	27990 (1.03)	14116 (28.72)	540 (1.03)	25325 (1.04)	28883 (22.65)	326 (1.02)
opsveto 949	23936 (1.17)	113833 (3.56)	649 (1.24)	20754 (1.22)	202745 (3.23)	409 (1.27)
kic 949	19000 (1.26)	98906 (4.10)	527 (1.00)	17961 (1.16)	130535 (5.01)	326 (1.02)
tggeo cur	16827 (1.13)	162074 (2.50)	567 (1.08)	14855 (1.21)	275388 (2.38)	364 (1.13)

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Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
tdedge 949	16100 (1.05)	64632 (6.27)	553 (1.05)	14274 (1.04)	94323 (6.93)	333 (1.04)
tgzfool 949	16100 (1.00)	2478 (163.63)	525 (1.00)	14273 (1.00)	10104 (64.74)	321 (1.00)
upvtrs cur	14035 (1.15)	46493 (8.72)	598 (1.14)	12833 (1.11)	54697 (11.96)	378 (1.18)
rvtrs cur	13974 (1.00)	5636 (71.94)	526 (1.00)	12776 (1.00)	13274 (49.28)	322 (1.00)
tgtcon cur	13783 (1.01)	24528 (16.53)	536 (1.02)	11374 (1.12)	54148 (12.08)	328 (1.02)
b4etcon cur	13380 (1.03)	13216 (30.68)	539 (1.03)	11134 (1.02)	20825 (31.41)	328 (1.02)
b4ekz cur	1747 (7.66)	307776 (1.32)	1684 (3.21)	4065 (2.74)	451738 (1.45)	906 (2.82)
b4ekzic cur	1747 (1.00)	28447 (14.25)	525 (1.00)	4065 (1.00)	69489 (9.41)	321 (1.00)
b4tim off	1747 (1.00)	0 (405468.00)	525 (1.00)	4065 (1.00)	0 (654085.00)	321 (1.00)
tgktim off	1747 (1.00)	0 (405468.00)	525 (1.00)	4065 (1.00)	0 (654085.00)	321 (1.00)
tgenr off	1747 (1.00)	0 (405468.00)	525 (1.00)	4065 (1.00)	0 (654085.00)	321 (1.00)
*chi*567 *off*	1747 (1.00)	0 (405468.00)	525 (1.00)	4065 (1.00)	0 (654085.00)	321 (1.00)
npitg	1740 (1.00)	11761 (34.48)	526 (1.00)	3909 (1.04)	48590 (13.46)	322 (1.00)
verrng off	1740 (1.00)	0 (405468.00)	525 (1.00)	3909 (1.00)	0 (654085.00)	321 (1.00)
*chi*5*max off*	1740 (1.00)	0 (405468.00)	525 (1.00)	3909 (1.00)	0 (654085.00)	321 (1.00)
angli off	1740 (1.00)	0 (405468.00)	525 (1.00)	3909 (1.00)	0 (654085.00)	321 (1.00)
ALLKfit off	1740 (1.00)	0 (405468.00)	525 (1.00)	3909 (1.00)	0 (654085.00)	321 (1.00)
tpics off	1740 (1.00)	0 (405468.00)	525 (1.00)	3909 (1.00)	0 (654085.00)	321 (1.00)
epionk off	1740 (1.00)	0 (405468.00)	525 (1.00)	3909 (1.00)	0 (654085.00)	321 (1.00)
ccdpul off	1740 (1.00)	0 (405468.00)	525 (1.00)	3909 (1.00)	0 (654085.00)	321 (1.00)
timkf off	1740 (1.00)	0 (405468.00)	525 (1.00)	3909 (1.00)	0 (654085.00)	321 (1.00)
$\overline{DELCO\ 949}$	1736 (1.00)	138590 (2.93)	525 (1.00)	2108 (1.85)	183889 (3.56)	321 (1.00)
cktrs cur	1516 (1.15)	50745 (7.99)	533 (1.02)	1301 (1.62)	208742 (3.13)	325 (1.01)
cktail cur	1476 (1.03)	38423 (10.55)	533 (1.02)	1159 (1.12)	135216 (4.84)	327 (1.02)
pv(*not tg*) *cur*	1313 (1.12)	127407 (3.18)	592 (1.13)	765 (1.52)	286409 (2.28)	363 (1.13)
piflg cur	1311 (1.00)	6709 (60.44)	525 (1.00)	763 (1.00)	15434 (42.38)	321 (1.00)
*ev*502 *cur*	1079 (1.22)	80728 (5.02)	525 (1.00)	623 (1.22)	174904 (3.74)	321 (1.00)
elveto cur	992 (1.09)	53750 (7.54)	525 (1.00)	576 (1.08)	135422 (4.83)	321 (1.00)
tdfool cur	991 (1.00)	26409 (15.35)	525 (1.00)	574 (1.00)	95454 (6.85)	321 (1.00)
*tdvarnn*02 *cur*	781 (1.27)	97792 (4.15)	525 (1.00)	479 (1.20)	213045 (3.07)	321 (1.00)
TD *cur*	781 (1.00)	172945 (2.34)	525 (1.00)	479 (1.00)	345081 (1.90)	321 (1.00)
$\overline{cpitrs \cdot cpitail}$	**772** (1.01)	57690 (7.03)	533 (1.02)	**465** (1.03)	356137 (1.84)	335 (1.04)
b4dedx cur	**525** (1.47)	172331 (2.35)	772 (1.47)	**321** (1.45)	196446 (3.33)	465 (1.45)
Total Rej.	1.47			1.45		

Table 16: 1-Beam Normalization. Branch no. 5

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
BOX 949	405468 (0.00)	0 (405468.00)	1 (1.00)	654085 (0.00)	0 (654085.00)	0 (0.00)
rsdedxmax cur	405468 (1.00)	0 (405468.00)	1 (1.00)	654085 (1.00)	0 (654085.00)	0 (0.00)
rsdedxcl 949	405468 (1.00)	0 (405468.00)	1 (1.00)	654085 (1.00)	0 (654085.00)	0 (0.00)
rslike cur	405468 (1.00)	0 (405468.00)	1 (1.00)	654085 (1.00)	0 (654085.00)	0 (0.00)
rngmom cur	376276 (1.08)	29192 (13.89)	1 (1.00)	506041 (1.29)	148044 (4.42)	0 (0.00)
BOX 949	376276 (1.00)	0 (405468.00)	1 (1.00)	506041 (1.00)	0 (654085.00)	0 (0.00)
*icodel*14 *cur*	374316 (1.01)	3961 (102.36)	1 (1.00)	506041 (1.00)	3 (218028.00)	0 (0.00)
*cos*3*d cur*	348023 (1.08)	28549 (14.20)	1 (1.00)	461701 (1.10)	51196 (12.78)	0 (0.00)
*layv*4 949	348021 (1.00)	2 (202734.00)	1 (1.00)	461701 (1.00)	0 (654085.00)	0 (0.00)
zfrf cur	325899 (1.07)	45753 (8.86)	1 (1.00)	461415 (1.00)	648 (1009.39)	0 (0.00)
zutout cur	325785 (1.00)	977 (415.01)	1 (1.00)	461128 (1.00)	557 (1174.30)	0 (0.00)
FIDUCIAL 949	325785 (1.00)	53686 (7.55)	1 (1.00)	461128 (1.00)	52109 (12.55)	0 (0.00)
utcqual 949	252148 (1.29)	114267 (3.55)	1 (1.00)	342630 (1.35)	208256 (3.14)	0 (0.00)
rsdedxcl 949	252148 (1.00)	0 (405468.00)	1 (1.00)	342630 (1.00)	0 (654085.00)	0 (0.00)
rsdedxmax cur	252148 (1.00)	0 (405468.00)	1 (1.00)	342630 (1.00)	0 (654085.00)	0 (0.00)
rslike cur	252148 (1.00)	0 (405468.00)	1 (1.00)	342630 (1.00)	0 (654085.00)	0 (0.00)
tgktim off	252148 (1.00)	0 (405468.00)	1 (1.00)	342630 (1.00)	0 (654085.00)	0 (0.00)
rngmom cur	252148 (1.00)	29192 (13.89)	1 (1.00)	342630 (1.00)	148044 (4.42)	0 (0.00)
*prrf*1 949	221464 (1.14)	58307 (6.95)	1 (1.00)	205095 (1.67)	253120 (2.58)	0 (0.00)
prrfz 949	195228 (1.13)	58421 (6.94)	1 (1.00)	171907 (1.19)	102690 (6.37)	0 (0.00)
PRRF 949	195228 (1.00)	103898 (3.90)	1 (1.00)	171907 (1.00)	323368 (2.02)	0 (0.00)
rtghi cur	194688 (1.00)	1747 (232.09)	1 (1.00)	171766 (1.00)	1813 (360.77)	0 (0.00)
etghi cur	187587 (1.04)	13027 (31.13)	1 (1.00)	168828 (1.02)	14056 (46.53)	0 (0.00)
*tgdedx*1 *cur*	167218 (1.12)	45439 (8.92)	1 (1.00)	132090 (1.28)	121866 (5.37)	0 (0.00)
*tgdedx*2 *cur*	151163 (1.11)	38479 (10.54)	1 (1.00)	122356 (1.08)	56131 (11.65)	0 (0.00)
tgdedx *cur*	151163 (1.00)	91524 (4.43)	1 (1.00)	122356 (1.00)	185457 (3.53)	0 (0.00)
*tglike*1 *cur*	139711 (1.08)	47861 (8.47)	1 (1.00)	111768 (1.09)	95963 (6.82)	0 (0.00)
*tglike*2 *cur*	134246 (1.04)	37487 (10.82)	1 (1.00)	105714 (1.06)	84235 (7.76)	0 (0.00)
TGLIKE *cur*	134246 (1.00)	63787 (6.36)	1 (1.00)	105714 (1.00)	128668 (5.08)	0 (0.00)
*tgdb*4 *cur*	124973 (1.07)	30670 (13.22)	1 (1.00)	97845 (1.08)	53110 (12.32)	0 (0.00)
*tgdb*4*tip cur*	91567 (1.36)	126413 (3.21)	1 (1.00)	73438 (1.33)	184461 (3.55)	0 (0.00)
tgdvxtip cur	77697 (1.18)	84301 (4.81)	1 (1.00)	63488 (1.16)	112127 (5.83)	0 (0.00)
tgdvxpi cur	68398 (1.14)	73883 (5.49)	1 (1.00)	59332 (1.07)	76314 (8.57)	0 (0.00)
TGB4 *cur*	68398 (1.00)	207101 (1.96)	1 (1.00)	59332 (1.00)	278240 (2.35)	0 (0.00)
pigap cur	64635 (1.06)	33913 (11.96)	1 (1.00)	57181 (1.04)	47738 (13.70)	0 (0.00)
KIN 949	64635 (1.00)	340833 (1.19)	1 (1.00)	57181 (1.00)	596904 (1.10)	0 (0.00)
tgpv cur	48432 (1.33)	153571 (2.64)	1 (1.00)	41751 (1.37)	199153 (3.28)	0 (0.00)
bwtrs cur	42063 (1.15)	161277 (2.51)	2 (2.00)	37108 (1.13)	147119 (4.45)	0 (0.00)
*b*4*trs cur*	38267 (1.10)	154090 (2.63)	2 (2.00)	33791 (1.10)	143751 (4.55)	0 (0.00)
*b*4*ccd cur*	38241 (1.00)	3094 (131.05)	1 (1.00)	33540 (1.01)	7445 (87.86)	0 (0.00)
tgqualt 949	38241 (1.00)	0 (405468.00)	1 (1.00)	33540 (1.00)	0 (654085.00)	0 (0.00)
timcon cur	38135 (1.00)	4184 (96.91)	1 (1.00)	33306 (1.01)	7776 (84.12)	0 (0.00)
epitg 949	38101 (1.00)	26358 (15.38)	1 (1.00)	33270 (1.00)	17722 (36.91)	0 (0.00)
tger 949	38087 (1.00)	4121 (98.39)	1 (1.00)	33258 (1.00)	18275 (35.79)	0 (0.00)
targf 949	36786 (1.04)	87765 (4.62)	1 (1.00)	31915 (1.04)	88509 (7.39)	0 (0.00)
ticcon 949	36785 (1.00)	38 (10670.20)	1 (1.00)	31915 (1.00)	95 (6885.11)	0 (0.00)
dtgttp 949	36774 (1.00)	212 (1912.58)	1 (1.00)	31885 (1.00)	577 (1133.60)	0 (0.00)
rtdif 949	36543 (1.01)	11156 (36.35)	1 (1.00)	31338 (1.02)	16163 (40.47)	0 (0.00)
epimaxk 949	35463 (1.03)	47010 (8.63)	1 (1.00)	30812 (1.02)	41675 (15.69)	0 (0.00)
drp 949	35376 (1.00)	2795 (145.07)	1 (1.00)	30604 (1.01)	12500 (52.33)	0 (0.00)
*phivtx*1 949	28806 (1.23)	89495 (4.53)	1 (1.00)	26249 (1.17)	144733 (4.52)	0 (0.00)
eiccon 949	27990 (1.03)	14116 (28.72)	1 (1.00)	25325 (1.04)	28883 (22.65)	0 (0.00)
opsveto 949	23936 (1.17)	113833 (3.56)	2 (2.00)	20754 (1.22)	202745 (3.23)	0 (0.00)
kic 949	19000 (1.26)	98906 (4.10)	1 (1.00)	17961 (1.16)	130535 (5.01)	0 (0.00)
tggeo cur	16827 (1.13)	162074 (2.50)	2 (2.00)	14855 (1.21)	275388 (2.38)	0 (0.00)

continued on next page

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
tdedge 949	16100 (1.05)	64632 (6.27)	1 (1.00)	14274 (1.04)	94323 (6.93)	0 (0.00)
tgzfool 949	16100 (1.00)	2478 (163.63)	1 (1.00)	14273 (1.00)	10104 (64.74)	0 (0.00)
upvtrs cur	14035 (1.15)	46493 (8.72)	1 (1.00)	12833 (1.11)	54697 (11.96)	0 (0.00)
rvtrs cur	13974 (1.00)	5636 (71.94)	1 (1.00)	12776 (1.00)	13274 (49.28)	0 (0.00)
tgtcon cur	13783 (1.01)	24528 (16.53)	1 (1.00)	11374 (1.12)	54148 (12.08)	0 (0.00)
b4etcon cur	13380 (1.03)	13216 (30.68)	1 (1.00)	11134 (1.02)	20825 (31.41)	0 (0.00)
b4ekz cur	1747 (7.66)	307776 (1.32)	18 (18.00)	4065 (2.74)	451738 (1.45)	15 (15.00)
b4ekzic cur	1747 (1.00)	28447 (14.25)	1 (1.00)	4065 (1.00)	69489 (9.41)	0 (0.00)
b4tim off	1747 (1.00)	0 (405468.00)	1 (1.00)	4065 (1.00)	0 (654085.00)	0 (0.00)
tgktim off	1747 (1.00)	0 (405468.00)	1 (1.00)	4065 (1.00)	0 (654085.00)	0 (0.00)
tgenr off	1747 (1.00)	0 (405468.00)	1 (1.00)	4065 (1.00)	0 (654085.00)	0 (0.00)
*chi*567 *off*	1747 (1.00)	0 (405468.00)	1 (1.00)	4065 (1.00)	0 (654085.00)	0 (0.00)
npitg	1740 (1.00)	11761 (34.48)	1 (1.00)	3909 (1.04)	48590 (13.46)	0 (0.00)
verrng off	1740 (1.00)	0 (405468.00)	1 (1.00)	3909 (1.00)	0 (654085.00)	0 (0.00)
*chi*5*max off*	1740 (1.00)	0 (405468.00)	1 (1.00)	3909 (1.00)	0 (654085.00)	0 (0.00)
angli off	1740 (1.00)	0 (405468.00)	1 (1.00)	3909 (1.00)	0 (654085.00)	0 (0.00)
ALLKfit off	1740 (1.00)	0 (405468.00)	1 (1.00)	3909 (1.00)	0 (654085.00)	0 (0.00)
tpics off	1740 (1.00)	0 (405468.00)	1 (1.00)	3909 (1.00)	0 (654085.00)	0 (0.00)
epionk off	1740 (1.00)	0 (405468.00)	1 (1.00)	3909 (1.00)	0 (654085.00)	0 (0.00)
ccdpul off	1740 (1.00)	0 (405468.00)	1 (1.00)	3909 (1.00)	0 (654085.00)	0 (0.00)
timkf off	1740 (1.00)	0 (405468.00)	1 (1.00)	3909 (1.00)	0 (654085.00)	0 (0.00)
$\overline{DELCO\ 949}$	1736 (1.00)	138590 (2.93)	1 (1.00)	2108 (1.85)	183889 (3.56)	1 (1.00)
cktrs cur	1516 (1.15)	50745 (7.99)	4 (4.00)	1301 (1.62)	208742 (3.13)	3 (3.00)
cktail cur	1476 (1.03)	38423 (10.55)	1 (1.00)	1159 (1.12)	135216 (4.84)	1 (1.00)
pv(*not tg*) *cur*	1313 (1.12)	127407 (3.18)	2 (2.00)	765 (1.52)	286409 (2.28)	1 (1.00)
piflg cur	1311 (1.00)	6709 (60.44)	1 (1.00)	763 (1.00)	15434 (42.38)	0 (0.00)
*ev*502 *cur*	1079 (1.22)	80728 (5.02)	1 (1.00)	623 (1.22)	174904 (3.74)	0 (0.00)
elveto cur	992 (1.09)	53750 (7.54)	1 (1.00)	576 (1.08)	135422 (4.83)	0 (0.00)
tdfool cur	991 (1.00)	26409 (15.35)	1 (1.00)	574 (1.00)	95454 (6.85)	0 (0.00)
*tdvarnn*02 *cur*	781 (1.27)	97792 (4.15)	1 (1.00)	479 (1.20)	213045 (3.07)	0 (0.00)
TD *cur*	781 (1.00)	172945 (2.34)	1 (1.00)	479 (1.00)	345081 (1.90)	0 (0.00)
$\overline{b4dedx}$	**248** (3.15)	233137 (1.74)	9 (9.00)	**144** (3.33)	457639 (1.43)	14 (14.00)
cpitrs cur	1 (248.00)	347377 (1.17)	208 (208.00)	0 (144.00)	297310 (2.20)	121 (121.00)
cpitail cur	**1** (1.00)	64755 (6.26)	1 (1.00)	**0** (0.00)	52804 (12.39)	0 (0.00)
Total Rej.	248.00			144.00		

Table 17: 2-Beam Rejection. Branch no. 1

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
BOX 949	405468 (0.00)	0 (405468.00)	8 (1.00)	654085 (0.00)	0 (654085.00)	56 (1.00)
rsdedxmax cur	405468 (1.00)	0 (405468.00)	8 (1.00)	654085 (1.00)	0 (654085.00)	56 (1.00)
rsdedxcl 949	405468 (1.00)	0 (405468.00)	8 (1.00)	654085 (1.00)	0 (654085.00)	56 (1.00)
rslike cur	405468 (1.00)	0 (405468.00)	8 (1.00)	654085 (1.00)	0 (654085.00)	56 (1.00)
rngmom cur	376276 (1.08)	29192 (13.89)	8 (1.00)	506041 (1.29)	148044 (4.42)	58 (1.04)
pv(not tg) cur	257815 (1.46)	127407 (3.18)	47 (5.88)	269155 (1.88)	286409 (2.28)	378 (6.75)
piflg cur	256248 (1.01)	6709 (60.44)	8 (1.00)	268211 (1.00)	15434 (42.38)	56 (1.00)
*ev*502 *cur*	210663 (1.22)	80728 (5.02)	8 (1.00)	212773 (1.26)	174904 (3.74)	56 (1.00)
elveto cur	191916 (1.10)	53750 (7.54)	8 (1.00)	194545 (1.09)	135422 (4.83)	56 (1.00)
tdfool cur	191562 (1.00)	26409 (15.35)	8 (1.00)	194076 (1.00)	95454 (6.85)	56 (1.00)
*tdvarnn*02 *cur*	156450 (1.22)	97792 (4.15)	8 (1.00)	158823 (1.22)	213045 (3.07)	56 (1.00)
TD *cur*	156450 (1.00)	172945 (2.34)	8 (1.00)	158823 (1.00)	345081 (1.90)	56 (1.00)
b4dedx cur	85311 (1.83)	172331 (2.35)	10 (1.25)	83537 (1.90)	196446 (3.33)	60 (1.07)
tgqualt 949	85311 (1.00)	0 (405468.00)	8 (1.00)	83537 (1.00)	0 (654085.00)	56 (1.00)
timcon cur	84289 (1.01)	4184 (96.91)	8 (1.00)	82580 (1.01)	7776 (84.12)	56 (1.00)
DELCO 949	50392 (1.67)	266878 (1.52)	23 (2.88)	22122 (3.73)	470196 (1.39)	66 (1.18)
tger 949	49721 (1.01)	4121 (98.39)	8 (1.00)	20066 (1.10)	18275 (35.79)	60 (1.07)
tgzfool 949	49470 (1.01)	2478 (163.63)	8 (1.00)	19758 (1.02)	10104 (64.74)	57 (1.02)
upvtrs cur	43507 (1.14)	46493 (8.72)	10 (1.25)	17573 (1.12)	54697 (11.96)	57 (1.02)
rvtrs cur	43085 (1.01)	5636 (71.94)	8 (1.00)	17204 (1.02)	13274 (49.28)	60 (1.07)
b4etcon cur	42295 (1.02)	13216 (30.68)	8 (1.00)	16805 (1.02)	20825 (31.41)	57 (1.02)
$\overline{b4trs \cdot b4ccd}$	40470 (1.05)	250258 (1.62)	33 (4.12)	7494 (2.24)	612029 (1.07)	990 (17.68)
cpitrs cur	1724 (23.47)	347377 (1.17)	164 (20.50)	2157 (3.47)	297310 (2.20)	75 (1.34)
cpitail cur	1707 (1.01)	64755 (6.26)	8 (1.00)	2151 (1.00)	52804 (12.39)	56 (1.00)
$1.1 < b4ars\_atc < 5.0$	**1144** (1.49)	234263 (1.73)	16 (2.00)	**1609** (1.34)	351097 (1.86)	89 (1.59)
bwtrs cur	24 (47.67)	161277 (2.51)	78 (9.75)	96 (16.76)	147119 (4.45)	88 (1.57)
cktrs cur	8 (3.00)	50745 (7.99)	16 (2.00)	60 (1.60)	208742 (3.13)	66 (1.18)
cktail cur	**8** (1.00)	38423 (10.55)	8 (1.00)	**56** (1.07)	135216 (4.84)	60 (1.07)
Total Rej.	143.00			28.73		

Table 18: 2-Beam Rejection. Branch no. 2

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
BOX 949	405468 (0.00)	0 (405468.00)	6 (1.00)	654085 (0.00)	0 (654085.00)	24 (1.00)
rsdedxmax cur	405468 (1.00)	0 (405468.00)	6 (1.00)	654085 (1.00)	0 (654085.00)	24 (1.00)
rsdedxcl 949	405468 (1.00)	0 (405468.00)	6 (1.00)	654085 (1.00)	0 (654085.00)	24 (1.00)
rslike cur	405468 (1.00)	0 (405468.00)	6 (1.00)	654085 (1.00)	0 (654085.00)	24 (1.00)
rngmom cur	376276 (1.08)	29192 (13.89)	6 (1.00)	506041 (1.29)	148044 (4.42)	25 (1.04)
pv(not tg) cur	257815 (1.46)	127407 (3.18)	25 (4.17)	269155 (1.88)	286409 (2.28)	285 (11.88)
piflg cur	256248 (1.01)	6709 (60.44)	6 (1.00)	268211 (1.00)	15434 (42.38)	24 (1.00)
*ev*502 *cur*	210663 (1.22)	80728 (5.02)	6 (1.00)	212773 (1.26)	174904 (3.74)	24 (1.00)
elveto cur	191916 (1.10)	53750 (7.54)	6 (1.00)	194545 (1.09)	135422 (4.83)	24 (1.00)
tdfool cur	191562 (1.00)	26409 (15.35)	6 (1.00)	194076 (1.00)	95454 (6.85)	24 (1.00)
*tdvarnn*02 *cur*	156450 (1.22)	97792 (4.15)	6 (1.00)	158823 (1.22)	213045 (3.07)	24 (1.00)
TD *cur*	156450 (1.00)	172945 (2.34)	6 (1.00)	158823 (1.00)	345081 (1.90)	24 (1.00)
b4dedx cur	85311 (1.83)	172331 (2.35)	6 (1.00)	83537 (1.90)	196446 (3.33)	25 (1.04)
tgqualt 949	85311 (1.00)	0 (405468.00)	6 (1.00)	83537 (1.00)	0 (654085.00)	24 (1.00)
timcon cur	84289 (1.01)	4184 (96.91)	6 (1.00)	82580 (1.01)	7776 (84.12)	24 (1.00)
DELCO 949	50392 (1.67)	266878 (1.52)	19 (3.17)	22122 (3.73)	470196 (1.39)	28 (1.17)
tger 949	49721 (1.01)	4121 (98.39)	6 (1.00)	20066 (1.10)	18275 (35.79)	25 (1.04)
tgzfool 949	49470 (1.01)	2478 (163.63)	6 (1.00)	19758 (1.02)	10104 (64.74)	24 (1.00)
upvtrs cur	43507 (1.14)	46493 (8.72)	6 (1.00)	17573 (1.12)	54697 (11.96)	26 (1.08)
rvtrs cur	43085 (1.01)	5636 (71.94)	6 (1.00)	17204 (1.02)	13274 (49.28)	24 (1.00)
b4etcon cur	42295 (1.02)	13216 (30.68)	6 (1.00)	16805 (1.02)	20825 (31.41)	24 (1.00)
$\overline{b4trs \cdot b4ccd}$	40470 (1.05)	250258 (1.62)	34 (5.67)	7494 (2.24)	612029 (1.07)	1492 (62.17)
cktrs cur	38402 (1.05)	50745 (7.99)	8 (1.33)	5475 (1.37)	208742 (3.13)	27 (1.12)
cktail cur	38181 (1.01)	38423 (10.55)	6 (1.00)	5404 (1.01)	135216 (4.84)	25 (1.04)
$b4ars\_atc < 1.1$	23748 (1.61)	174087 (2.33)	12 (2.00)	3066 (1.76)	308467 (2.12)	57 (2.38)
$tgz > -7.0$	**21122** (1.12)	55365 (7.32)	7 (1.17)	**2600** (1.18)	107166 (6.10)	30 (1.25)
bwtrs cur	258 (81.87)	161277 (2.51)	73 (12.17)	65 (40.00)	147119 (4.45)	65 (2.71)
cpitrs cur	7 (36.86)	347377 (1.17)	192 (32.00)	24 (2.71)	297310 (2.20)	56 (2.33)
cpitail cur	**6** (1.17)	64755 (6.26)	7 (1.17)	**24** (1.00)	52804 (12.39)	24 (1.00)
Total Rej.	3520.33			108.33		

Table 19: 2-Beam Normalization. Branch no. 1

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
BOX 949	405468 (0.00)	0 (405468.00)	2 (1.00)	654085 (0.00)	0 (654085.00)	12 (1.00)
rsdedxmax cur	405468 (1.00)	0 (405468.00)	2 (1.00)	654085 (1.00)	0 (654085.00)	12 (1.00)
rsdedxcl 949	405468 (1.00)	0 (405468.00)	2 (1.00)	654085 (1.00)	0 (654085.00)	12 (1.00)
rslike cur	405468 (1.00)	0 (405468.00)	2 (1.00)	654085 (1.00)	0 (654085.00)	12 (1.00)
pv(not tg) cur	278061 (1.46)	127407 (3.18)	4 (2.00)	367676 (1.78)	286409 (2.28)	160 (13.33)
tgqualt 949	278061 (1.00)	0 (405468.00)	2 (1.00)	367676 (1.00)	0 (654085.00)	12 (1.00)
timcon cur	275588 (1.01)	4184 (96.91)	2 (1.00)	364090 (1.01)	7776 (84.12)	12 (1.00)
epitg 949	257396 (1.07)	26358 (15.38)	2 (1.00)	357613 (1.02)	17722 (36.91)	13 (1.08)
tger 949	254770 (1.01)	4121 (98.39)	2 (1.00)	347310 (1.03)	18275 (35.79)	12 (1.00)
ticcon 949	254765 (1.00)	38 (10670.20)	2 (1.00)	347300 (1.00)	95 (6885.11)	12 (1.00)
dtgttp 949	254685 (1.00)	212 (1912.58)	2 (1.00)	347098 (1.00)	577 (1133.60)	12 (1.00)
rtdif 949	247388 (1.03)	11156 (36.35)	2 (1.00)	337138 (1.03)	16163 (40.47)	13 (1.08)
drp 949	245425 (1.01)	2795 (145.07)	2 (1.00)	331122 (1.02)	12500 (52.33)	12 (1.00)
eiccon 949	237783 (1.03)	14116 (28.72)	2 (1.00)	320203 (1.03)	28883 (22.65)	12 (1.00)
kic 949	202583 (1.17)	98906 (4.10)	2 (1.00)	276216 (1.16)	130535 (5.01)	12 (1.00)
tggeo cur	173930 (1.16)	162074 (2.50)	6 (3.00)	229921 (1.20)	275388 (2.38)	33 (2.75)
tgzfool 949	173339 (1.00)	2478 (163.63)	2 (1.00)	228272 (1.01)	10104 (64.74)	12 (1.00)
upvtrs cur	153469 (1.13)	46493 (8.72)	2 (1.00)	206107 (1.11)	54697 (11.96)	12 (1.00)
rvtrs cur	152271 (1.01)	5636 (71.94)	2 (1.00)	204148 (1.01)	13274 (49.28)	12 (1.00)
tgtcon cur	144722 (1.05)	24528 (16.53)	2 (1.00)	192746 (1.06)	54148 (12.08)	18 (1.50)
b4etcon cur	140215 (1.03)	13216 (30.68)	2 (1.00)	186942 (1.03)	20825 (31.41)	12 (1.00)
b4tim off	140215 (1.00)	0 (405468.00)	2 (1.00)	186942 (1.00)	0 (654085.00)	12 (1.00)
tgktim off	140215 (1.00)	0 (405468.00)	2 (1.00)	186942 (1.00)	0 (654085.00)	12 (1.00)
tgenr off	140215 (1.00)	0 (405468.00)	2 (1.00)	186942 (1.00)	0 (654085.00)	12 (1.00)
chi567 off	140215 (1.00)	0 (405468.00)	2 (1.00)	186942 (1.00)	0 (654085.00)	12 (1.00)
npitg	139088 (1.01)	11761 (34.48)	2 (1.00)	183405 (1.02)	48590 (13.46)	13 (1.08)
verrng off	139088 (1.00)	0 (405468.00)	2 (1.00)	183405 (1.00)	0 (654085.00)	12 (1.00)
chi5max off	139088 (1.00)	0 (405468.00)	2 (1.00)	183405 (1.00)	0 (654085.00)	12 (1.00)
angli off	139088 (1.00)	0 (405468.00)	2 (1.00)	183405 (1.00)	0 (654085.00)	12 (1.00)
ALLKfit off	139088 (1.00)	0 (405468.00)	2 (1.00)	183405 (1.00)	0 (654085.00)	12 (1.00)
tpics off	139088 (1.00)	0 (405468.00)	2 (1.00)	183405 (1.00)	0 (654085.00)	12 (1.00)
epionk off	139088 (1.00)	0 (405468.00)	2 (1.00)	183405 (1.00)	0 (654085.00)	12 (1.00)
ccdpul off	139088 (1.00)	0 (405468.00)	2 (1.00)	183405 (1.00)	0 (654085.00)	12 (1.00)
timkf off	139088 (1.00)	0 (405468.00)	2 (1.00)	183405 (1.00)	0 (654085.00)	12 (1.00)
DELCO 949	32966 (4.22)	266878 (1.52)	448 (224.00)	22672 (8.09)	470196 (1.39)	1165 (97.08)
b4dedx cur	31638 (1.04)	172331 (2.35)	2 (1.00)	21947 (1.03)	196446 (3.33)	12 (1.00)
cpitrs cur	5803 (5.45)	347377 (1.17)	77 (38.50)	14386 (1.53)	297310 (2.20)	27 (2.25)
cpitail cur	5786 (1.00)	64755 (6.26)	2 (1.00)	14372 (1.00)	52804 (12.39)	12 (1.00)
$\overline{cktrs \cdot cktail \cdot bwtrs}$	2437 (2.37)	208174 (1.95)	2 (1.00)	10396 (1.38)	346164 (1.89)	150 (12.50)
BOX 949	2437 (1.00)	0 (405468.00)	2 (1.00)	10396 (1.00)	0 (654085.00)	12 (1.00)
icodel14 cur	2306 (1.06)	3961 (102.36)	2 (1.00)	10396 (1.00)	3 (218028.00)	12 (1.00)
cos3d cur	2077 (1.11)	28549 (14.20)	2 (1.00)	9847 (1.06)	51196 (12.78)	12 (1.00)
layv4 949	2077 (1.00)	2 (202734.00)	2 (1.00)	9847 (1.00)	0 (654085.00)	12 (1.00)
zfrf cur	1908 (1.09)	45753 (8.86)	2 (1.00)	9845 (1.00)	648 (1009.39)	12 (1.00)
zutout cur	1907 (1.00)	977 (415.01)	2 (1.00)	9831 (1.00)	557 (1174.30)	12 (1.00)
FIDUCIAL 949	1907 (1.00)	53686 (7.55)	2 (1.00)	9831 (1.00)	52109 (12.55)	12 (1.00)
utcqual 949	1314 (1.45)	114267 (3.55)	2 (1.00)	7658 (1.28)	208256 (3.14)	12 (1.00)
rsdedxcl 949	1314 (1.00)	0 (405468.00)	2 (1.00)	7658 (1.00)	0 (654085.00)	12 (1.00)
rsdedxmax cur	1314 (1.00)	0 (405468.00)	2 (1.00)	7658 (1.00)	0 (654085.00)	12 (1.00)
rslike cur	1314 (1.00)	0 (405468.00)	2 (1.00)	7658 (1.00)	0 (654085.00)	12 (1.00)
tgktim off	1314 (1.00)	0 (405468.00)	2 (1.00)	7658 (1.00)	0 (654085.00)	12 (1.00)
rngmom cur	697 (1.89)	29192 (13.89)	2 (1.00)	1485 (5.16)	148044 (4.42)	12 (1.00)
prrf1 949	613 (1.14)	58307 (6.95)	2 (1.00)	830 (1.79)	253120 (2.58)	12 (1.00)
prrfz 949	550 (1.11)	58421 (6.94)	2 (1.00)	712 (1.17)	102690 (6.37)	12 (1.00)
PRRF 949	550 (1.00)	103898 (3.90)	2 (1.00)	712 (1.00)	323368 (2.02)	12 (1.00)

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Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
rtghi cur	550 (1.00)	1747 (232.09)	2 (1.00)	712 (1.00)	1813 (360.77)	12 (1.00)
etghi cur	544 (1.01)	13027 (31.13)	2 (1.00)	709 (1.00)	14056 (46.53)	12 (1.00)
*tgdedx*1 *cur*	482 (1.13)	45439 (8.92)	2 (1.00)	580 (1.22)	121866 (5.37)	12 (1.00)
*tgdedx*2 *cur*	369 (1.31)	38479 (10.54)	2 (1.00)	403 (1.44)	56131 (11.65)	12 (1.00)
tgdedx *cur*	369 (1.00)	91524 (4.43)	2 (1.00)	403 (1.00)	185457 (3.53)	12 (1.00)
*tglike*1 *cur*	314 (1.18)	47861 (8.47)	2 (1.00)	346 (1.16)	95963 (6.82)	12 (1.00)
*tglike*2 *cur*	294 (1.07)	37487 (10.82)	2 (1.00)	337 (1.03)	84235 (7.76)	12 (1.00)
TGLIKE *cur*	294 (1.00)	63787 (6.36)	2 (1.00)	337 (1.00)	128668 (5.08)	12 (1.00)
*tgdb*4 *cur*	286 (1.03)	30670 (13.22)	2 (1.00)	324 (1.04)	53110 (12.32)	12 (1.00)
*tgdb*4*tip cur*	197 (1.45)	126413 (3.21)	2 (1.00)	242 (1.34)	184461 (3.55)	12 (1.00)
tgdvxtip cur	169 (1.17)	84301 (4.81)	2 (1.00)	211 (1.15)	112127 (5.83)	12 (1.00)
tgdvxpi cur	113 (1.50)	73883 (5.49)	2 (1.00)	157 (1.34)	76314 (8.57)	12 (1.00)
TGB4 *cur*	113 (1.00)	207101 (1.96)	2 (1.00)	157 (1.00)	278240 (2.35)	12 (1.00)
pigap cur	106 (1.07)	33913 (11.96)	2 (1.00)	151 (1.04)	47738 (13.70)	12 (1.00)
KIN 949	106 (1.00)	340833 (1.19)	2 (1.00)	151 (1.00)	596904 (1.10)	12 (1.00)
piflg cur	105 (1.01)	6709 (60.44)	2 (1.00)	150 (1.01)	15434 (42.38)	12 (1.00)
*ev*502 *cur*	84 (1.25)	80728 (5.02)	2 (1.00)	121 (1.24)	174904 (3.74)	12 (1.00)
elveto cur	82 (1.02)	53750 (7.54)	2 (1.00)	107 (1.13)	135422 (4.83)	12 (1.00)
tdfool cur	82 (1.00)	26409 (15.35)	2 (1.00)	106 (1.01)	95454 (6.85)	12 (1.00)
*tdvarnn*02 *cur*	58 (1.41)	97792 (4.15)	2 (1.00)	89 (1.19)	213045 (3.07)	12 (1.00)
TD *cur*	**58** (1.00)	172945 (2.34)	2 (1.00)	**89** (1.00)	345081 (1.90)	12 (1.00)
b4trs cur	3 (19.33)	154090 (2.63)	55 (27.50)	13 (6.85)	143751 (4.55)	81 (6.75)
b4ccd cur	**2** (1.50)	3094 (131.05)	3 (1.50)	**12** (1.08)	7445 (87.86)	13 (1.08)
Total Rej.	29.00			7.42		

Table 20: 2-Beam Normalization. Branch no. 2

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
BOX 949	405468 (0.00)	0 (405468.00)	0 (0.00)	654085 (0.00)	0 (654085.00)	3 (1.00)
rsdedxmax cur	405468 (1.00)	0 (405468.00)	0 (0.00)	654085 (1.00)	0 (654085.00)	3 (1.00)
rsdedxcl 949	405468 (1.00)	0 (405468.00)	0 (0.00)	654085 (1.00)	0 (654085.00)	3 (1.00)
rslike cur	405468 (1.00)	0 (405468.00)	0 (0.00)	654085 (1.00)	0 (654085.00)	3 (1.00)
pv(not tg) cur	278061 (1.46)	127407 (3.18)	0 (0.00)	367676 (1.78)	286409 (2.28)	65 (21.67)
tgqualt 949	278061 (1.00)	0 (405468.00)	0 (0.00)	367676 (1.00)	0 (654085.00)	3 (1.00)
timcon cur	275588 (1.01)	4184 (96.91)	0 (0.00)	364090 (1.01)	7776 (84.12)	3 (1.00)
epitg 949	257396 (1.07)	26358 (15.38)	0 (0.00)	357613 (1.02)	17722 (36.91)	3 (1.00)
tger 949	254770 (1.01)	4121 (98.39)	0 (0.00)	347310 (1.03)	18275 (35.79)	3 (1.00)
ticcon 949	254765 (1.00)	38 (10670.20)	0 (0.00)	347300 (1.00)	95 (6885.11)	3 (1.00)
dtgttp 949	254685 (1.00)	212 (1912.58)	0 (0.00)	347098 (1.00)	577 (1133.60)	3 (1.00)
rtdif 949	247388 (1.03)	11156 (36.35)	0 (0.00)	337138 (1.03)	16163 (40.47)	3 (1.00)
drp 949	245425 (1.01)	2795 (145.07)	0 (0.00)	331122 (1.02)	12500 (52.33)	3 (1.00)
eiccon 949	237783 (1.03)	14116 (28.72)	0 (0.00)	320203 (1.03)	28883 (22.65)	3 (1.00)
kic 949	202583 (1.17)	98906 (4.10)	0 (0.00)	276216 (1.16)	130535 (5.01)	3 (1.00)
tggeo cur	173930 (1.16)	162074 (2.50)	0 (0.00)	229921 (1.20)	275388 (2.38)	4 (1.33)
tgzfool 949	173339 (1.00)	2478 (163.63)	0 (0.00)	228272 (1.01)	10104 (64.74)	3 (1.00)
upvtrs cur	153469 (1.13)	46493 (8.72)	0 (0.00)	206107 (1.11)	54697 (11.96)	3 (1.00)
rvtrs cur	152271 (1.01)	5636 (71.94)	0 (0.00)	204148 (1.01)	13274 (49.28)	3 (1.00)
tgtcon cur	144722 (1.05)	24528 (16.53)	0 (0.00)	192746 (1.06)	54148 (12.08)	8 (2.67)
b4etcon cur	140215 (1.03)	13216 (30.68)	0 (0.00)	186942 (1.03)	20825 (31.41)	3 (1.00)
b4tim off	140215 (1.00)	0 (405468.00)	0 (0.00)	186942 (1.00)	0 (654085.00)	3 (1.00)
tgktim off	140215 (1.00)	0 (405468.00)	0 (0.00)	186942 (1.00)	0 (654085.00)	3 (1.00)
tgenr off	140215 (1.00)	0 (405468.00)	0 (0.00)	186942 (1.00)	0 (654085.00)	3 (1.00)
chi567 off	140215 (1.00)	0 (405468.00)	0 (0.00)	186942 (1.00)	0 (654085.00)	3 (1.00)
npitg	139088 (1.01)	11761 (34.48)	0 (0.00)	183405 (1.02)	48590 (13.46)	3 (1.00)
verrng off	139088 (1.00)	0 (405468.00)	0 (0.00)	183405 (1.00)	0 (654085.00)	3 (1.00)
chi5max off	139088 (1.00)	0 (405468.00)	0 (0.00)	183405 (1.00)	0 (654085.00)	3 (1.00)
angli off	139088 (1.00)	0 (405468.00)	0 (0.00)	183405 (1.00)	0 (654085.00)	3 (1.00)
ALLKfit off	139088 (1.00)	0 (405468.00)	0 (0.00)	183405 (1.00)	0 (654085.00)	3 (1.00)
tpics off	139088 (1.00)	0 (405468.00)	0 (0.00)	183405 (1.00)	0 (654085.00)	3 (1.00)
epionk off	139088 (1.00)	0 (405468.00)	0 (0.00)	183405 (1.00)	0 (654085.00)	3 (1.00)
ccdpul off	139088 (1.00)	0 (405468.00)	0 (0.00)	183405 (1.00)	0 (654085.00)	3 (1.00)
timkf off	139088 (1.00)	0 (405468.00)	0 (0.00)	183405 (1.00)	0 (654085.00)	3 (1.00)
DELCO 949	32966 (4.22)	266878 (1.52)	74 (74.00)	22672 (8.09)	470196 (1.39)	270 (90.00)
b4dedx cur	31638 (1.04)	172331 (2.35)	0 (0.00)	21947 (1.03)	196446 (3.33)	3 (1.00)
cpitrs cur	5803 (5.45)	347377 (1.17)	6 (6.00)	14386 (1.53)	297310 (2.20)	4 (1.33)
cpitail cur	5786 (1.00)	64755 (6.26)	0 (0.00)	14372 (1.00)	52804 (12.39)	3 (1.00)
$\overline{cktrs \cdot cktail \cdot bwtrs}$	2437 (2.37)	208174 (1.95)	0 (0.00)	10396 (1.38)	346164 (1.89)	37 (12.33)
BOX 949	2437 (1.00)	0 (405468.00)	0 (0.00)	10396 (1.00)	0 (654085.00)	3 (1.00)
icodel14 cur	2306 (1.06)	3961 (102.36)	0 (0.00)	10396 (1.00)	3 (218028.00)	3 (1.00)
cos3d cur	2077 (1.11)	28549 (14.20)	0 (0.00)	9847 (1.06)	51196 (12.78)	3 (1.00)
layv4 949	2077 (1.00)	2 (202734.00)	0 (0.00)	9847 (1.00)	0 (654085.00)	3 (1.00)
zfrf cur	1908 (1.09)	45753 (8.86)	0 (0.00)	9845 (1.00)	648 (1009.39)	3 (1.00)
zutout cur	1907 (1.00)	977 (415.01)	0 (0.00)	9831 (1.00)	557 (1174.30)	3 (1.00)
FIDUCIAL 949	1907 (1.00)	53686 (7.55)	0 (0.00)	9831 (1.00)	52109 (12.55)	3 (1.00)
utcqual 949	1314 (1.45)	114267 (3.55)	0 (0.00)	7658 (1.28)	208256 (3.14)	3 (1.00)
rsdedxcl 949	1314 (1.00)	0 (405468.00)	0 (0.00)	7658 (1.00)	0 (654085.00)	3 (1.00)
rsdedxmax cur	1314 (1.00)	0 (405468.00)	0 (0.00)	7658 (1.00)	0 (654085.00)	3 (1.00)
rslike cur	1314 (1.00)	0 (405468.00)	0 (0.00)	7658 (1.00)	0 (654085.00)	3 (1.00)
tgktim off	1314 (1.00)	0 (405468.00)	0 (0.00)	7658 (1.00)	0 (654085.00)	3 (1.00)
rngmom cur	697 (1.89)	29192 (13.89)	0 (0.00)	1485 (5.16)	148044 (4.42)	3 (1.00)
prrf1 949	613 (1.14)	58307 (6.95)	0 (0.00)	830 (1.79)	253120 (2.58)	3 (1.00)
prrfz 949	550 (1.11)	58421 (6.94)	0 (0.00)	712 (1.17)	102690 (6.37)	3 (1.00)
PRRF 949	550 (1.00)	103898 (3.90)	0 (0.00)	712 (1.00)	323368 (2.02)	3 (1.00)

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Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
rtghi cur	550 (1.00)	1747 (232.09)	0 (0.00)	712 (1.00)	1813 (360.77)	3 (1.00)
etghi cur	544 (1.01)	13027 (31.13)	0 (0.00)	709 (1.00)	14056 (46.53)	3 (1.00)
*tgdedx*1 *cur*	482 (1.13)	45439 (8.92)	0 (0.00)	580 (1.22)	121866 (5.37)	3 (1.00)
*tgdedx*2 *cur*	369 (1.31)	38479 (10.54)	0 (0.00)	403 (1.44)	56131 (11.65)	3 (1.00)
tgdedx *cur*	369 (1.00)	91524 (4.43)	0 (0.00)	403 (1.00)	185457 (3.53)	3 (1.00)
*tglike*1 *cur*	314 (1.18)	47861 (8.47)	0 (0.00)	346 (1.16)	95963 (6.82)	3 (1.00)
*tglike*2 *cur*	294 (1.07)	37487 (10.82)	0 (0.00)	337 (1.03)	84235 (7.76)	3 (1.00)
TGLIKE *cur*	294 (1.00)	63787 (6.36)	0 (0.00)	337 (1.00)	128668 (5.08)	3 (1.00)
*tgdb*4 *cur*	286 (1.03)	30670 (13.22)	0 (0.00)	324 (1.04)	53110 (12.32)	3 (1.00)
*tgdb*4*tip cur*	197 (1.45)	126413 (3.21)	0 (0.00)	242 (1.34)	184461 (3.55)	3 (1.00)
tgdvxtip cur	169 (1.17)	84301 (4.81)	0 (0.00)	211 (1.15)	112127 (5.83)	3 (1.00)
tgdvxpi cur	113 (1.50)	73883 (5.49)	0 (0.00)	157 (1.34)	76314 (8.57)	3 (1.00)
TGB4 *cur*	113 (1.00)	207101 (1.96)	0 (0.00)	157 (1.00)	278240 (2.35)	3 (1.00)
pigap cur	106 (1.07)	33913 (11.96)	0 (0.00)	151 (1.04)	47738 (13.70)	3 (1.00)
KIN 949	106 (1.00)	340833 (1.19)	0 (0.00)	151 (1.00)	596904 (1.10)	3 (1.00)
piflg cur	105 (1.01)	6709 (60.44)	0 (0.00)	150 (1.01)	15434 (42.38)	3 (1.00)
*ev*502 *cur*	84 (1.25)	80728 (5.02)	0 (0.00)	121 (1.24)	174904 (3.74)	3 (1.00)
elveto cur	82 (1.02)	53750 (7.54)	0 (0.00)	107 (1.13)	135422 (4.83)	3 (1.00)
tdfool cur	82 (1.00)	26409 (15.35)	0 (0.00)	106 (1.01)	95454 (6.85)	3 (1.00)
*tdvarnn*02 *cur*	58 (1.41)	97792 (4.15)	0 (0.00)	89 (1.19)	213045 (3.07)	3 (1.00)
TD *cur*	**58** (1.00)	172945 (2.34)	0 (0.00)	**89** (1.00)	345081 (1.90)	3 (1.00)
targf 949	37 (1.57)	87765 (4.62)	0 (0.00)	49 (1.82)	88509 (7.39)	4 (1.33)
*b*4*ekz cur*	8 (4.62)	307776 (1.32)	2 (2.00)	26 (1.88)	451738 (1.45)	4 (1.33)
epimaxk 949	6 (1.33)	47010 (8.63)	0 (0.00)	26 (1.00)	41675 (15.69)	3 (1.00)
*phivtx*1 949	3 (2.00)	89495 (4.53)	0 (0.00)	17 (1.53)	144733 (4.52)	3 (1.00)
opsveto 949	2 (1.50)	113833 (3.56)	0 (0.00)	6 (2.83)	202745 (3.23)	4 (1.33)
tdedge 949	2 (1.00)	64632 (6.27)	0 (0.00)	6 (1.00)	94323 (6.93)	3 (1.00)
tgccdpf null	2 (1.00)	0 (405468.00)	0 (0.00)	6 (1.00)	0 (654085.00)	3 (1.00)
rtghi cur	2 (1.00)	1747 (232.09)	0 (0.00)	6 (1.00)	1813 (360.77)	3 (1.00)
etghi cur	2 (1.00)	13027 (31.13)	0 (0.00)	6 (1.00)	14056 (46.53)	3 (1.00)
*tgdedx*1 *cur*	2 (1.00)	45439 (8.92)	0 (0.00)	6 (1.00)	121866 (5.37)	3 (1.00)
*tgdedx*2 *cur*	2 (1.00)	38479 (10.54)	0 (0.00)	6 (1.00)	56131 (11.65)	3 (1.00)
tgdedx *cur*	2 (1.00)	91524 (4.43)	0 (0.00)	6 (1.00)	185457 (3.53)	3 (1.00)
*tglike*1 *cur*	2 (1.00)	47861 (8.47)	0 (0.00)	6 (1.00)	95963 (6.82)	3 (1.00)
*tglike*2 *cur*	2 (1.00)	37487 (10.82)	0 (0.00)	6 (1.00)	84235 (7.76)	3 (1.00)
TGLIKE *cur*	2 (1.00)	63787 (6.36)	0 (0.00)	6 (1.00)	128668 (5.08)	3 (1.00)
*tgdb*4 *cur*	2 (1.00)	30670 (13.22)	0 (0.00)	6 (1.00)	53110 (12.32)	3 (1.00)
*tgdb*4*tip cur*	2 (1.00)	126413 (3.21)	0 (0.00)	6 (1.00)	184461 (3.55)	3 (1.00)
tgdvxtip cur	2 (1.00)	84301 (4.81)	0 (0.00)	6 (1.00)	112127 (5.83)	3 (1.00)
tgdvxpi cur	2 (1.00)	73883 (5.49)	0 (0.00)	6 (1.00)	76314 (8.57)	3 (1.00)
TGB4 *cur*	2 (1.00)	207101 (1.96)	0 (0.00)	6 (1.00)	278240 (2.35)	3 (1.00)
pigap cur	2 (1.00)	33913 (11.96)	0 (0.00)	6 (1.00)	47738 (13.70)	3 (1.00)
TGKIN	2 (1.00)	264306 (1.53)	0 (0.00)	6 (1.00)	416178 (1.57)	3 (1.00)
tgpv cur	**0** (2.00)	153571 (2.64)	2 (2.00)	**3** (2.00)	199153 (3.28)	6 (2.00)
Total Rej.	58.00			29.67		

Table 21: 2-Beam Normalization. Branch no. 3

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
BOX 949	405468 (0.00)	0 (405468.00)	89 (1.00)	654085 (0.00)	0 (654085.00)	26 (1.00)
rsdedxmax cur	405468 (1.00)	0 (405468.00)	89 (1.00)	654085 (1.00)	0 (654085.00)	26 (1.00)
rsdedxcl 949	405468 (1.00)	0 (405468.00)	89 (1.00)	654085 (1.00)	0 (654085.00)	26 (1.00)
rslike cur	405468 (1.00)	0 (405468.00)	89 (1.00)	654085 (1.00)	0 (654085.00)	26 (1.00)
pv(not tg) cur	278061 (1.46)	127407 (3.18)	98 (1.10)	367676 (1.78)	286409 (2.28)	122 (4.69)
tgqualt 949	278061 (1.00)	0 (405468.00)	89 (1.00)	367676 (1.00)	0 (654085.00)	26 (1.00)
timcon cur	275588 (1.01)	4184 (96.91)	89 (1.00)	364090 (1.01)	7776 (84.12)	26 (1.00)
epitg 949	257396 (1.07)	26358 (15.38)	93 (1.04)	357613 (1.02)	17722 (36.91)	27 (1.04)
tger 949	254770 (1.01)	4121 (98.39)	89 (1.00)	347310 (1.03)	18275 (35.79)	26 (1.00)
ticcon 949	254765 (1.00)	38 (10670.20)	89 (1.00)	347300 (1.00)	95 (6885.11)	26 (1.00)
dtgttp 949	254685 (1.00)	212 (1912.58)	89 (1.00)	347098 (1.00)	577 (1133.60)	26 (1.00)
rtdif 949	247388 (1.03)	11156 (36.35)	89 (1.00)	337138 (1.03)	16163 (40.47)	26 (1.00)
drp 949	245425 (1.01)	2795 (145.07)	89 (1.00)	331122 (1.02)	12500 (52.33)	26 (1.00)
eiccon 949	237783 (1.03)	14116 (28.72)	92 (1.03)	320203 (1.03)	28883 (22.65)	26 (1.00)
kic 949	202583 (1.17)	98906 (4.10)	91 (1.02)	276216 (1.16)	130535 (5.01)	26 (1.00)
tggeo cur	173930 (1.16)	162074 (2.50)	142 (1.60)	229921 (1.20)	275388 (2.38)	48 (1.85)
tgzfool 949	173339 (1.00)	2478 (163.63)	89 (1.00)	228272 (1.01)	10104 (64.74)	26 (1.00)
upvtrs cur	153469 (1.13)	46493 (8.72)	103 (1.16)	206107 (1.11)	54697 (11.96)	29 (1.12)
rvtrs cur	152271 (1.01)	5636 (71.94)	89 (1.00)	204148 (1.01)	13274 (49.28)	26 (1.00)
tgtcon cur	144722 (1.05)	24528 (16.53)	95 (1.07)	192746 (1.06)	54148 (12.08)	33 (1.27)
b4etcon cur	140215 (1.03)	13216 (30.68)	90 (1.01)	186942 (1.03)	20825 (31.41)	26 (1.00)
b4tim off	140215 (1.00)	0 (405468.00)	89 (1.00)	186942 (1.00)	0 (654085.00)	26 (1.00)
tgktim off	140215 (1.00)	0 (405468.00)	89 (1.00)	186942 (1.00)	0 (654085.00)	26 (1.00)
tgenr off	140215 (1.00)	0 (405468.00)	89 (1.00)	186942 (1.00)	0 (654085.00)	26 (1.00)
chi567 off	140215 (1.00)	0 (405468.00)	89 (1.00)	186942 (1.00)	0 (654085.00)	26 (1.00)
npitg	139088 (1.01)	11761 (34.48)	91 (1.02)	183405 (1.02)	48590 (13.46)	27 (1.04)
verrng off	139088 (1.00)	0 (405468.00)	89 (1.00)	183405 (1.00)	0 (654085.00)	26 (1.00)
chi5max off	139088 (1.00)	0 (405468.00)	89 (1.00)	183405 (1.00)	0 (654085.00)	26 (1.00)
angli off	139088 (1.00)	0 (405468.00)	89 (1.00)	183405 (1.00)	0 (654085.00)	26 (1.00)
ALLKfit off	139088 (1.00)	0 (405468.00)	89 (1.00)	183405 (1.00)	0 (654085.00)	26 (1.00)
tpics off	139088 (1.00)	0 (405468.00)	89 (1.00)	183405 (1.00)	0 (654085.00)	26 (1.00)
epionk off	139088 (1.00)	0 (405468.00)	89 (1.00)	183405 (1.00)	0 (654085.00)	26 (1.00)
ccdpul off	139088 (1.00)	0 (405468.00)	89 (1.00)	183405 (1.00)	0 (654085.00)	26 (1.00)
timkf off	139088 (1.00)	0 (405468.00)	89 (1.00)	183405 (1.00)	0 (654085.00)	26 (1.00)
DELCO 949	32966 (4.22)	266878 (1.52)	3385 (38.03)	22672 (8.09)	470196 (1.39)	1772 (68.15)
b4dedx cur	31638 (1.04)	172331 (2.35)	90 (1.01)	21947 (1.03)	196446 (3.33)	26 (1.00)
cktrs cur	29152 (1.09)	50745 (7.99)	90 (1.01)	12135 (1.81)	208742 (3.13)	27 (1.04)
cktail cur	28918 (1.01)	38423 (10.55)	89 (1.00)	11805 (1.03)	135216 (4.84)	29 (1.12)
BOX 949	28918 (1.00)	0 (405468.00)	89 (1.00)	11805 (1.00)	0 (654085.00)	26 (1.00)
icodel14 cur	28160 (1.03)	3961 (102.36)	89 (1.00)	11805 (1.00)	3 (218028.00)	26 (1.00)
cos3d cur	26009 (1.08)	28549 (14.20)	89 (1.00)	10769 (1.10)	51196 (12.78)	26 (1.00)
layv4 949	26007 (1.00)	2 (202734.00)	89 (1.00)	10769 (1.00)	0 (654085.00)	26 (1.00)
zfrf cur	23583 (1.10)	45753 (8.86)	89 (1.00)	10765 (1.00)	648 (1009.39)	26 (1.00)
zutout cur	23535 (1.00)	977 (415.01)	89 (1.00)	10747 (1.00)	557 (1174.30)	26 (1.00)
FIDUCIAL 949	23535 (1.00)	53686 (7.55)	89 (1.00)	10747 (1.00)	52109 (12.55)	26 (1.00)
utcqual 949	18258 (1.29)	114267 (3.55)	89 (1.00)	8157 (1.32)	208256 (3.14)	26 (1.00)
rsdedxcl 949	18258 (1.00)	0 (405468.00)	89 (1.00)	8157 (1.00)	0 (654085.00)	26 (1.00)
rsdedxmax cur	18258 (1.00)	0 (405468.00)	89 (1.00)	8157 (1.00)	0 (654085.00)	26 (1.00)
rslike cur	18258 (1.00)	0 (405468.00)	89 (1.00)	8157 (1.00)	0 (654085.00)	26 (1.00)
tgktim off	18258 (1.00)	0 (405468.00)	89 (1.00)	8157 (1.00)	0 (654085.00)	26 (1.00)
rngmom cur	17210 (1.06)	29192 (13.89)	89 (1.00)	6154 (1.33)	148044 (4.42)	26 (1.00)
prrf1 949	15234 (1.13)	58307 (6.95)	89 (1.00)	3675 (1.67)	253120 (2.58)	26 (1.00)
prrfz 949	13400 (1.14)	58421 (6.94)	89 (1.00)	3138 (1.17)	102690 (6.37)	26 (1.00)
PRRF 949	13400 (1.00)	103898 (3.90)	89 (1.00)	3138 (1.00)	323368 (2.02)	26 (1.00)
rtghi cur	13398 (1.00)	1747 (232.09)	89 (1.00)	3136 (1.00)	1813 (360.77)	26 (1.00)

continued on next page

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
etghi cur	13331 (1.01)	13027 (31.13)	89 (1.00)	3118 (1.01)	14056 (46.53)	26 (1.00)
*tgdedx*1 *cur*	12147 (1.10)	45439 (8.92)	89 (1.00)	2449 (1.27)	121866 (5.37)	26 (1.00)
*tgdedx*2 *cur*	9582 (1.27)	38479 (10.54)	89 (1.00)	1949 (1.26)	56131 (11.65)	26 (1.00)
tgdedx *cur*	9582 (1.00)	91524 (4.43)	89 (1.00)	1949 (1.00)	185457 (3.53)	26 (1.00)
*tglike*1 *cur*	8673 (1.10)	47861 (8.47)	89 (1.00)	1781 (1.09)	95963 (6.82)	26 (1.00)
*tglike*2 *cur*	8369 (1.04)	37487 (10.82)	89 (1.00)	1709 (1.04)	84235 (7.76)	26 (1.00)
TGLIKE *cur*	8369 (1.00)	63787 (6.36)	89 (1.00)	1709 (1.00)	128668 (5.08)	26 (1.00)
*tgdb*4 *cur*	8050 (1.04)	30670 (13.22)	89 (1.00)	1636 (1.04)	53110 (12.32)	26 (1.00)
*tgdb*4*tip cur*	5735 (1.40)	126413 (3.21)	89 (1.00)	1234 (1.33)	184461 (3.55)	26 (1.00)
tgdvxtip cur	5225 (1.10)	84301 (4.81)	89 (1.00)	1130 (1.09)	112127 (5.83)	26 (1.00)
tgdvxpi cur	3676 (1.42)	73883 (5.49)	89 (1.00)	912 (1.24)	76314 (8.57)	26 (1.00)
TGB4 *cur*	3676 (1.00)	207101 (1.96)	89 (1.00)	912 (1.00)	278240 (2.35)	26 (1.00)
pigap cur	3426 (1.07)	33913 (11.96)	89 (1.00)	879 (1.04)	47738 (13.70)	26 (1.00)
KIN 949	3426 (1.00)	340833 (1.19)	89 (1.00)	879 (1.00)	596904 (1.10)	26 (1.00)
piflg cur	3417 (1.00)	6709 (60.44)	89 (1.00)	872 (1.01)	15434 (42.38)	26 (1.00)
*ev*502 *cur*	2831 (1.21)	80728 (5.02)	89 (1.00)	698 (1.25)	174904 (3.74)	26 (1.00)
elveto cur	2611 (1.08)	53750 (7.54)	89 (1.00)	645 (1.08)	135422 (4.83)	26 (1.00)
tdfool cur	2607 (1.00)	26409 (15.35)	89 (1.00)	645 (1.00)	95454 (6.85)	26 (1.00)
*tdvarnn*02 *cur*	2147 (1.21)	97792 (4.15)	89 (1.00)	537 (1.20)	213045 (3.07)	26 (1.00)
TD *cur*	2147 (1.00)	172945 (2.34)	89 (1.00)	537 (1.00)	345081 (1.90)	26 (1.00)
$\overline{cpitrs \cdot cpitail \cdot bwtrs}$	**2146** (1.00)	43090 (9.41)	89 (1.00)	**376** (1.43)	282892 (2.31)	164 (6.31)
*b*4*trs cur*	99 (21.68)	154090 (2.63)	2088 (23.46)	29 (12.97)	143751 (4.55)	368 (14.15)
*b*4*ccd cur*	**89** (1.11)	3094 (131.05)	99 (1.11)	**26** (1.12)	7445 (87.86)	29 (1.12)
Total Rej.	24.11			14.46		

Table 22: 2-Beam Normalization. Branch no. 4

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
BOX 949	405468 (0.00)	0 (405468.00)	6 (1.00)	654085 (0.00)	0 (654085.00)	2 (1.00)
rsdedxmax cur	405468 (1.00)	0 (405468.00)	6 (1.00)	654085 (1.00)	0 (654085.00)	2 (1.00)
rsdedxcl 949	405468 (1.00)	0 (405468.00)	6 (1.00)	654085 (1.00)	0 (654085.00)	2 (1.00)
rslike cur	405468 (1.00)	0 (405468.00)	6 (1.00)	654085 (1.00)	0 (654085.00)	2 (1.00)
pv(not tg) cur	278061 (1.46)	127407 (3.18)	6 (1.00)	367676 (1.78)	286409 (2.28)	35 (17.50)
tgqualt 949	278061 (1.00)	0 (405468.00)	6 (1.00)	367676 (1.00)	0 (654085.00)	2 (1.00)
timcon cur	275588 (1.01)	4184 (96.91)	6 (1.00)	364090 (1.01)	7776 (84.12)	2 (1.00)
epitg 949	257396 (1.07)	26358 (15.38)	6 (1.00)	357613 (1.02)	17722 (36.91)	2 (1.00)
tger 949	254770 (1.01)	4121 (98.39)	6 (1.00)	347310 (1.03)	18275 (35.79)	2 (1.00)
ticcon 949	254765 (1.00)	38 (10670.20)	6 (1.00)	347300 (1.00)	95 (6885.11)	2 (1.00)
dtgttp 949	254685 (1.00)	212 (1912.58)	6 (1.00)	347098 (1.00)	577 (1133.60)	2 (1.00)
rtdif 949	247388 (1.03)	11156 (36.35)	7 (1.17)	337138 (1.03)	16163 (40.47)	2 (1.00)
drp 949	245425 (1.01)	2795 (145.07)	6 (1.00)	331122 (1.02)	12500 (52.33)	2 (1.00)
eiccon 949	237783 (1.03)	14116 (28.72)	6 (1.00)	320203 (1.03)	28883 (22.65)	2 (1.00)
kic 949	202583 (1.17)	98906 (4.10)	6 (1.00)	276216 (1.16)	130535 (5.01)	2 (1.00)
tggeo cur	173930 (1.16)	162074 (2.50)	8 (1.33)	229921 (1.20)	275388 (2.38)	3 (1.50)
tgzfool 949	173339 (1.00)	2478 (163.63)	6 (1.00)	228272 (1.01)	10104 (64.74)	2 (1.00)
upvtrs cur	153469 (1.13)	46493 (8.72)	6 (1.00)	206107 (1.11)	54697 (11.96)	3 (1.50)
rvtrs cur	152271 (1.01)	5636 (71.94)	6 (1.00)	204148 (1.01)	13274 (49.28)	2 (1.00)
tgtcon cur	144722 (1.05)	24528 (16.53)	8 (1.33)	192746 (1.06)	54148 (12.08)	6 (3.00)
b4etcon cur	140215 (1.03)	13216 (30.68)	6 (1.00)	186942 (1.03)	20825 (31.41)	2 (1.00)
b4tim off	140215 (1.00)	0 (405468.00)	6 (1.00)	186942 (1.00)	0 (654085.00)	2 (1.00)
tgktim off	140215 (1.00)	0 (405468.00)	6 (1.00)	186942 (1.00)	0 (654085.00)	2 (1.00)
tgenr off	140215 (1.00)	0 (405468.00)	6 (1.00)	186942 (1.00)	0 (654085.00)	2 (1.00)
chi567 off	140215 (1.00)	0 (405468.00)	6 (1.00)	186942 (1.00)	0 (654085.00)	2 (1.00)
npitg	139088 (1.01)	11761 (34.48)	6 (1.00)	183405 (1.02)	48590 (13.46)	2 (1.00)
verrng off	139088 (1.00)	0 (405468.00)	6 (1.00)	183405 (1.00)	0 (654085.00)	2 (1.00)
chi5max off	139088 (1.00)	0 (405468.00)	6 (1.00)	183405 (1.00)	0 (654085.00)	2 (1.00)
angli off	139088 (1.00)	0 (405468.00)	6 (1.00)	183405 (1.00)	0 (654085.00)	2 (1.00)
ALLKfit off	139088 (1.00)	0 (405468.00)	6 (1.00)	183405 (1.00)	0 (654085.00)	2 (1.00)
tpics off	139088 (1.00)	0 (405468.00)	6 (1.00)	183405 (1.00)	0 (654085.00)	2 (1.00)
epionk off	139088 (1.00)	0 (405468.00)	6 (1.00)	183405 (1.00)	0 (654085.00)	2 (1.00)
ccdpul off	139088 (1.00)	0 (405468.00)	6 (1.00)	183405 (1.00)	0 (654085.00)	2 (1.00)
timkf off	139088 (1.00)	0 (405468.00)	6 (1.00)	183405 (1.00)	0 (654085.00)	2 (1.00)
DELCO 949	32966 (4.22)	266878 (1.52)	652 (108.67)	22672 (8.09)	470196 (1.39)	394 (197.00)
b4dedx cur	31638 (1.04)	172331 (2.35)	6 (1.00)	21947 (1.03)	196446 (3.33)	3 (1.50)
cktrs cur	29152 (1.09)	50745 (7.99)	6 (1.00)	12135 (1.81)	208742 (3.13)	2 (1.00)
cktail cur	28918 (1.01)	38423 (10.55)	6 (1.00)	11805 (1.03)	135216 (4.84)	2 (1.00)
BOX 949	28918 (1.00)	0 (405468.00)	6 (1.00)	11805 (1.00)	0 (654085.00)	2 (1.00)
icodel14 cur	28160 (1.03)	3961 (102.36)	6 (1.00)	11805 (1.00)	3 (218028.00)	2 (1.00)
cos3d cur	26009 (1.08)	28549 (14.20)	6 (1.00)	10769 (1.10)	51196 (12.78)	2 (1.00)
layv4 949	26007 (1.00)	2 (202734.00)	6 (1.00)	10769 (1.00)	0 (654085.00)	2 (1.00)
zfrf cur	23583 (1.10)	45753 (8.86)	6 (1.00)	10765 (1.00)	648 (1009.39)	2 (1.00)
zutout cur	23535 (1.00)	977 (415.01)	6 (1.00)	10747 (1.00)	557 (1174.30)	2 (1.00)
FIDUCIAL 949	23535 (1.00)	53686 (7.55)	6 (1.00)	10747 (1.00)	52109 (12.55)	2 (1.00)
utcqual 949	18258 (1.29)	114267 (3.55)	6 (1.00)	8157 (1.32)	208256 (3.14)	2 (1.00)
rsdedxcl 949	18258 (1.00)	0 (405468.00)	6 (1.00)	8157 (1.00)	0 (654085.00)	2 (1.00)
rsdedxmax cur	18258 (1.00)	0 (405468.00)	6 (1.00)	8157 (1.00)	0 (654085.00)	2 (1.00)
rslike cur	18258 (1.00)	0 (405468.00)	6 (1.00)	8157 (1.00)	0 (654085.00)	2 (1.00)
tgktim off	18258 (1.00)	0 (405468.00)	6 (1.00)	8157 (1.00)	0 (654085.00)	2 (1.00)
rngmom cur	17210 (1.06)	29192 (13.89)	6 (1.00)	6154 (1.33)	148044 (4.42)	2 (1.00)
prrf1 949	15234 (1.13)	58307 (6.95)	6 (1.00)	3675 (1.67)	253120 (2.58)	2 (1.00)
prrfz 949	13400 (1.14)	58421 (6.94)	6 (1.00)	3138 (1.17)	102690 (6.37)	2 (1.00)
PRRF 949	13400 (1.00)	103898 (3.90)	6 (1.00)	3138 (1.00)	323368 (2.02)	2 (1.00)
rtghi cur	13398 (1.00)	1747 (232.09)	6 (1.00)	3136 (1.00)	1813 (360.77)	2 (1.00)

continued on next page

Cuts	p1p1b949 seq	p1p1b949 single	p1p1b949 allbut	p2p1b949 seq	p2p1b949 single	p2p1b949 allbut
etghi cur	13331 (1.01)	13027 (31.13)	6 (1.00)	3118 (1.01)	14056 (46.53)	2 (1.00)
*tgdedx*1 *cur*	12147 (1.10)	45439 (8.92)	6 (1.00)	2449 (1.27)	121866 (5.37)	2 (1.00)
*tgdedx*2 *cur*	9582 (1.27)	38479 (10.54)	6 (1.00)	1949 (1.26)	56131 (11.65)	2 (1.00)
tgdedx *cur*	9582 (1.00)	91524 (4.43)	6 (1.00)	1949 (1.00)	185457 (3.53)	2 (1.00)
*tglike*1 *cur*	8673 (1.10)	47861 (8.47)	6 (1.00)	1781 (1.09)	95963 (6.82)	2 (1.00)
*tglike*2 *cur*	8369 (1.04)	37487 (10.82)	6 (1.00)	1709 (1.04)	84235 (7.76)	2 (1.00)
TGLIKE *cur*	8369 (1.00)	63787 (6.36)	6 (1.00)	1709 (1.00)	128668 (5.08)	2 (1.00)
*tgdb*4 *cur*	8050 (1.04)	30670 (13.22)	6 (1.00)	1636 (1.04)	53110 (12.32)	2 (1.00)
*tgdb*4*tip cur*	5735 (1.40)	126413 (3.21)	6 (1.00)	1234 (1.33)	184461 (3.55)	2 (1.00)
tgdvxtip cur	5225 (1.10)	84301 (4.81)	6 (1.00)	1130 (1.09)	112127 (5.83)	2 (1.00)
tgdvxpi cur	3676 (1.42)	73883 (5.49)	6 (1.00)	912 (1.24)	76314 (8.57)	2 (1.00)
TGB4 *cur*	3676 (1.00)	207101 (1.96)	6 (1.00)	912 (1.00)	278240 (2.35)	2 (1.00)
pigap cur	3426 (1.07)	33913 (11.96)	6 (1.00)	879 (1.04)	47738 (13.70)	2 (1.00)
KIN 949	3426 (1.00)	340833 (1.19)	6 (1.00)	879 (1.00)	596904 (1.10)	2 (1.00)
piflg cur	3417 (1.00)	6709 (60.44)	6 (1.00)	872 (1.01)	15434 (42.38)	2 (1.00)
*ev*502 *cur*	2831 (1.21)	80728 (5.02)	6 (1.00)	698 (1.25)	174904 (3.74)	2 (1.00)
elveto cur	2611 (1.08)	53750 (7.54)	6 (1.00)	645 (1.08)	135422 (4.83)	2 (1.00)
tdfool cur	2607 (1.00)	26409 (15.35)	6 (1.00)	645 (1.00)	95454 (6.85)	2 (1.00)
*tdvarnn*02 *cur*	2147 (1.21)	97792 (4.15)	6 (1.00)	537 (1.20)	213045 (3.07)	2 (1.00)
TD *cur*	2147 (1.00)	172945 (2.34)	6 (1.00)	537 (1.00)	345081 (1.90)	2 (1.00)
$\overline{cpitrs \cdot cpitail \cdot bwtrs}$	**2146** (1.00)	43090 (9.41)	6 (1.00)	**376** (1.43)	282892 (2.31)	36 (18.00)
targf 949	1154 (1.86)	87765 (4.62)	14 (2.33)	214 (1.76)	88509 (7.39)	4 (2.00)
*b*4*ekz cur*	598 (1.93)	307776 (1.32)	25 (4.17)	110 (1.95)	451738 (1.45)	11 (5.50)
epimaxk 949	564 (1.06)	47010 (8.63)	7 (1.17)	107 (1.03)	41675 (15.69)	3 (1.50)
*phivtx*1 949	259 (2.18)	89495 (4.53)	9 (1.50)	51 (2.10)	144733 (4.52)	3 (1.50)
opsveto 949	84 (3.08)	113833 (3.56)	12 (2.00)	17 (3.00)	202745 (3.23)	7 (3.50)
tdedge 949	82 (1.02)	64632 (6.27)	6 (1.00)	17 (1.00)	94323 (6.93)	2 (1.00)
tgccdpf null	82 (1.00)	0 (405468.00)	6 (1.00)	17 (1.00)	0 (654085.00)	2 (1.00)
rtghi cur	82 (1.00)	1747 (232.09)	6 (1.00)	17 (1.00)	1813 (360.77)	2 (1.00)
etghi cur	82 (1.00)	13027 (31.13)	6 (1.00)	17 (1.00)	14056 (46.53)	2 (1.00)
*tgdedx*1 *cur*	82 (1.00)	45439 (8.92)	6 (1.00)	17 (1.00)	121866 (5.37)	2 (1.00)
*tgdedx*2 *cur*	82 (1.00)	38479 (10.54)	6 (1.00)	17 (1.00)	56131 (11.65)	2 (1.00)
tgdedx *cur*	82 (1.00)	91524 (4.43)	6 (1.00)	17 (1.00)	185457 (3.53)	2 (1.00)
*tglike*1 *cur*	82 (1.00)	47861 (8.47)	6 (1.00)	17 (1.00)	95963 (6.82)	2 (1.00)
*tglike*2 *cur*	82 (1.00)	37487 (10.82)	6 (1.00)	17 (1.00)	84235 (7.76)	2 (1.00)
TGLIKE *cur*	82 (1.00)	63787 (6.36)	6 (1.00)	17 (1.00)	128668 (5.08)	2 (1.00)
*tgdb*4 *cur*	82 (1.00)	30670 (13.22)	6 (1.00)	17 (1.00)	53110 (12.32)	2 (1.00)
*tgdb*4*tip cur*	82 (1.00)	126413 (3.21)	6 (1.00)	17 (1.00)	184461 (3.55)	2 (1.00)
tgdvxtip cur	82 (1.00)	84301 (4.81)	6 (1.00)	17 (1.00)	112127 (5.83)	2 (1.00)
tgdvxpi cur	82 (1.00)	73883 (5.49)	6 (1.00)	17 (1.00)	76314 (8.57)	2 (1.00)
TGB4 *cur*	82 (1.00)	207101 (1.96)	6 (1.00)	17 (1.00)	278240 (2.35)	2 (1.00)
pigap cur	82 (1.00)	33913 (11.96)	6 (1.00)	17 (1.00)	47738 (13.70)	2 (1.00)
TGKIN	82 (1.00)	264306 (1.53)	6 (1.00)	17 (1.00)	416178 (1.57)	2 (1.00)
tgpv cur	**6** (13.67)	153571 (2.64)	82 (13.67)	**2** (8.50)	199153 (3.28)	17 (8.50)
Total Rej.	357.67			188.00		