

Comparing Km2 Acceptance for the output ntuples for the original PNN2 2006 processing to the new and improved 2007 code.

Cuts	Loose		Tight	
	2006 ntuples	2007 ntuples	2006 ntuples	2007 ntuples
RD	0.99994 ± 0.000590	0.99993 ± 0.000581	0.99994 ± 0.000590	0.99993 ± 0.000581
Recon	0.99943 ± 0.000821	0.99944 ± 0.000806	0.99962 ± 0.001167	0.99962 ± 0.001147
Beam	0.09873 ± 0.000051	0.13655 ± 0.000070	0.09389 ± 0.000049	0.12366 ± 0.000063
PV	0.48212 ± 0.002516	0.48465 ± 0.002092	0.25935 ± 0.001394	0.25876 ± 0.001182
Muon	0.04757 ± 0.002516	0.06614 ± 0.002092	0.02434 ± 0.001394	0.03198 ± 0.001182
BadStc	0.99845 ± 0.002549	0.99845 ± 0.002543	0.99923 ± 0.003700	0.99925 ± 0.003689
Kin	0.82969 ± 0.002788	0.82979 ± 0.002782	0.84320 ± 0.004755	0.84313 ± 0.004740
TD1	0.46436 ± 0.001308	0.46439 ± 0.001305	0.37855 ± 0.001544	0.37859 ± 0.001540
Piscat	0.38467 ± 0.001308	0.38475 ± 0.001305	0.31895 ± 0.001544	0.31896 ± 0.001540
UTC	0.94348 ± 0.000772	0.94334 ± 0.000794	0.94348 ± 0.000772	0.94334 ± 0.000794
OPS	0.97404 ± 0.003909	0.97392 ± 0.004030	0.97357 ± 0.005020	0.97337 ± 0.005178
TGkin	0.65879 ± 0.002693	0.66118 ± 0.002788	0.65965 ± 0.003466	0.66192 ± 0.003589
Kpi2	0.60542 ± 0.002693	0.60745 ± 0.002788	0.60593 ± 0.003466	0.60779 ± 0.003589

Table 1: Acceptance Summary Table.

$Bkgrnd (\times 10^{-3})$	k034	e787	Loose		Tight	
			2006 ntuples	2007 ntuples	2006 ntuples	2007 ntuples
1-BM	3.86 ± 2.36	1.66 ± 1.66	0.84 ± 0.84	1.18 ± 1.18	0.53 ± 0.53	0.51 ± 0.51
2-BM KK	0.983 ± 0.983	145.9 ± 145.9	30.81 ± 4.89	32.56 ± 5.10	14.81 ± 3.00	14.32 ± 2.96
2-BM Kpi	0.106 ± 0.106	19.7 ± 19.7	0.54 ± 0.78	1.56 ± 1.50	0.23 ± 0.36	0.65 ± 0.83
2-BM	1.14 ± 1.14	165.6 ± 165.6	31.35 ± 4.96	34.11 ± 5.32	15.04 ± 3.02	14.97 ± 3.08
BMTotal	5.00 ± 2.62	167.3 ± 167.3	32.19 ± 5.05	35.30 ± 5.48	15.57 ± 3.09	15.48 ± 3.14
Mu Band	28.0 ± 5.0	20.0 ± 14.2	56.3 ± 45.1	116.8 ± 68.9	8.85 ± 9.89	20.4 ± 16.6

Table 2: **Background** Scaled to the 3/3 sample.

Cuts	Loose		Tight	
	2006 ntuples	2007 ntuples	2006 ntuples	2007 ntuples
Band PV ERbox	0.0563 ± 0.0451	0.1168 ± 0.0689	0.00885 ± 0.00989	0.0204 ± 0.0166

Table 3: **Muon Background** Scaled to the 3/3. Corrected for PV acceptance.

Table 4: Muon RD Branch no. 1

Cuts	km2loose acc	km2newloose acc	km2tight acc	km2newtight acc
<i>BADRUN</i>	5189813 (-)	5358988 (-)	5189813 (-)	5358988 (-)
<i>ictime - cktbm</i>	3324048 (-)	3457079 (-)	3324048 (-)	3457079 (-)
<i>icbit</i>	3322245 (-)	3455005 (-)	3322245 (-)	3455005 (-)
<i>b4dedx</i>	3222580 (-)	3342586 (-)	3222580 (-)	3342586 (-)
<i>UTC</i>	3217622 (-)	3337468 (-)	3217622 (-)	3337468 (-)
<i>TARGET</i>	3217622 (-)	3337468 (-)	3217622 (-)	3337468 (-)
<i>utcqual Loose</i>	2871573 (-)	2965700 (-)	2871573 (-)	2965700 (-)
<i>RD_{TRK}</i>	2871573 (1)	2965700 (1)	2871573 (1)	2965700 (1)
<i>TRKTIM</i>	2871396 (0.999938)	2965503 (0.999934)	2871396 (0.999938)	2965503 (0.999934)
Muon RD Acc.	0.99994 ± 0.000590	0.99993 ± 0.000581	0.99994 ± 0.000590	0.99993 ± 0.000581

Table 5: Muon Recon Branch no. 1

Cuts	km2loose acc	km2newloose acc	km2tight acc	km2newtight acc
<i>BADRUN</i>	5189813 (-)	5358988 (-)	5189813 (-)	5358988 (-)
<i>ictime - cktbm</i>	3324048 (-)	3457079 (-)	3324048 (-)	3457079 (-)
<i>icbit</i>	3322245 (-)	3455005 (-)	3322245 (-)	3455005 (-)
<i>b4dedx</i>	3222580 (-)	3342586 (-)	3222580 (-)	3342586 (-)
<i>cpitrs</i>	3179262 (-)	3296001 (-)	3179262 (-)	3296001 (-)
<i>cpitail</i>	3176138 (-)	3292765 (-)	3176138 (-)	3292765 (-)
<i>cktrs</i>	3014946 (-)	3111758 (-)	3014946 (-)	3111758 (-)
<i>cktail</i>	2937942 (-)	3029704 (-)	2937942 (-)	3029704 (-)
<i>bwtrs</i>	2747076 (-)	2831668 (-)	2747076 (-)	2831668 (-)
<i>PVnoBV Loose60</i>	1483490 (-)	1538173 (-)	733287 (-)	758970 (-)
<i>RD_TRK</i>	1483490 (-)	1538173 (-)	733287 (-)	758970 (-)
<i>TRKTIM</i>	1483375 (-)	1537986 (-)	733236 (-)	758893 (-)
<i>abs(ictime - trs)</i>	1483375 (-)	1537986 (-)	733236 (-)	758893 (-)
<i>RDUTM</i>	1482537 (0.999435)	1537121 (0.999438)	732958 (0.999621)	758607 (0.999623)
<i>TARGET</i>	1482537 (1)	1537121 (1)	732958 (1)	758607 (1)
Muon Recon Acc.	0.99943 ± 0.000821	0.99944 ± 0.000806	0.99962 ± 0.001167	0.99962 ± 0.001147

Table 6: Muon Beam Branch no. 1

Cuts	km2loose acc	km2newloose acc	km2tight acc	km2newtight acc
<i>BADRUN</i>	5189813 (-)	5358988 (-)	5189813 (-)	5358988 (-)
<i>RD_TRK</i>	5189736 (-)	5358910 (-)	5189736 (-)	5358910 (-)
<i>TRKTIM</i>	5187898 (-)	5357048 (-)	5187898 (-)	5357048 (-)
<i>RDUTM</i>	4964444 (-)	5126174 (-)	4964444 (-)	5126174 (-)
<i>TARGET</i>	4964444 (-)	5126174 (-)	4964444 (-)	5126174 (-)
<i>icbit</i>	4961592 (-)	5123258 (-)	4961592 (-)	5123258 (-)
<i>KMU2BOX</i>	4110918 (-)	4254248 (-)	4110918 (-)	4254248 (-)
<i>cos3d</i>	3970030 (-)	4105720 (-)	3970030 (-)	4105720 (-)
<i>utcqual Loose</i>	3701622 (-)	3823045 (-)	3701622 (-)	3823045 (-)
<i>TGCUT</i>	3623499 (0.978895)	3739543 (0.978158)	3623499 (0.978895)	3739543 (0.978158)
<i>tgqualt</i>	3497070 (0.965109)	3609268 (0.965163)	3497070 (0.965109)	3609268 (0.965163)
<i>npitg</i>	3497070 (1)	3609268 (1)	3497070 (1)	3609268 (1)
<i>timcon</i>	3491946 (0.998535)	3604003 (0.998541)	3491946 (0.998535)	3604003 (0.998541)
<i>tgtcon</i>	3454110 (0.989165)	3564990 (0.989175)	3454110 (0.989165)	3564990 (0.989175)
<i>b4etcon</i>	3419878 (0.990089)	3529692 (0.990099)	3419878 (0.990089)	3529692 (0.990099)
<i>DCBIT</i>	3012705 (0.880939)	3109174 (0.880863)	3012705 (0.880939)	3109174 (0.880863)
<i>DELCO</i>	2976694 (0.988047)	3071983 (0.988038)	2976694 (0.988047)	3071983 (0.988038)
<i>Delc Loose</i>	2581750 (0.867321)	2664389 (0.867319)	2122260 (0.712959)	2190178 (0.712953)
<i>PSCUT</i>	2448986 (0.948576)	2527342 (0.948563)	2009337 (0.946791)	2073593 (0.946769)
<i>b4dedx</i>	2435564 (0.994519)	2513492 (0.99452)	1998225 (0.99447)	2062135 (0.994474)
<i>bwtrs</i>	2235637 (0.917913)	2307067 (0.917873)	1832855 (0.917242)	1891380 (0.917195)
<i>cpitrs</i>	2231875 (0.998317)	2303180 (0.998315)	1829835 (0.998352)	1888260 (0.99835)
<i>cpitail</i>	2230844 (0.999538)	2302109 (0.999535)	1829001 (0.999544)	1887395 (0.999542)
<i>cktrs</i>	2216659 (0.993641)	2287435 (0.993626)	1820013 (0.995086)	1878068 (0.995058)
<i>cktail</i>	2180934 (0.983883)	2250546 (0.983873)	1809162 (0.994038)	1866885 (0.994045)
<i>b4trs</i>	2124974 (0.974341)	2192796 (0.97434)	1761223 (0.973502)	1817397 (0.973492)
<i>b4ccd</i>	2095946 (0.98634)	2163144 (0.986478)	1742254 (0.98923)	1798074 (0.989368)
<i>upvtrs</i>	2061527 (0.983578)	2127590 (0.983564)	1714684 (0.984176)	1769599 (0.984164)
<i>rvtrs</i>	2059558 (0.999045)	2125558 (0.999045)	1713140 (0.9991)	1768006 (0.9991)
<i>tggeo</i>	1976928 (0.95988)	2040219 (0.959851)	1643000 (0.959058)	1695600 (0.959047)
<i>b4ekz</i>	1802367 (0.911701)	1860090 (0.911711)	1495538 (0.910248)	1543474 (0.910282)
<i>tgzfool</i>	1780125 (0.98766)	1837124 (0.987653)	1477110 (0.987678)	1524431 (0.987662)
<i>targf</i>	1722793 (0.967793)	1778024 (0.96783)	1429371 (0.967681)	1475249 (0.967737)
<i>dtgttp</i>	1722787 (0.999997)	1778017 (0.999996)	1429365 (0.999996)	1475242 (0.999995)
<i>rtdif</i>	1706324 (0.990444)	1760983 (0.99042)	1415636 (0.990395)	1461030 (0.990366)
<i>tgktim</i>	1689493 (0.990136)	1743623 (0.990142)	1410486 (0.996362)	1455702 (0.996353)
<i>eiccon</i>	1644137 (0.973154)	1696861 (0.973181)	1372704 (0.973213)	1416735 (0.973231)
<i>ticcon</i>	1644133 (0.999998)	1696857 (0.999998)	1372701 (0.999998)	1416732 (0.999998)
<i>pigap</i>	1610337 (0.979444)	1662059 (0.979493)	1344511 (0.979464)	1387712 (0.979516)
<i>tgdb4</i>	1584185 (0.98376)	1617233 (0.97303)	1322347 (0.983515)	1349584 (0.972525)
<i>tgdb4tip</i>	1576204 (0.994962)	1608985 (0.9949)	1315471 (0.9948)	1342470 (0.994729)
<i>tgdvrtip</i>	1569993 (0.99606)	1604719 (0.997349)	1310171 (0.995971)	1338850 (0.997303)
<i>tgdvxpi</i>	1535360 (0.977941)	1569044 (0.977769)	1283230 (0.979437)	1311099 (0.979273)
TGB4	1535360 (1)	1569044 (1)	1283230 (1)	1311099 (1)
<i>phivtx1</i>	1489745 (0.97029)	1522063 (0.970058)	1240997 (0.967089)	1267518 (0.96676)
<i>ccd pul</i>	445487 (0.299036)	630826 (0.414455)	424234 (0.341849)	571821 (0.451134)

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Cuts	km2loose acc	km2newloose acc	km2tight acc	km2newtight acc
<i>timkf</i>	400376 (0.898738)	569412 (0.902645)	381031 (0.898162)	515770 (0.901978)
<i>verrng</i>	373562 (0.933028)	531061 (0.932648)	355478 (0.932937)	481061 (0.932705)
<i>angli</i>	373323 (0.99936)	530723 (0.999364)	355245 (0.999345)	480749 (0.999351)
<i>ALLK fit</i>	366294 (0.981172)	523457 (0.986309)	348342 (0.980568)	474120 (0.986211)
<i>tpics</i>	365775 (0.998583)	522753 (0.998655)	347831 (0.998533)	473438 (0.998562)
<i>kic</i>	365679 (0.999738)	522604 (0.999715)	347736 (0.999727)	473298 (0.999704)
<i>epionk</i>	365476 (0.999445)	522043 (0.998927)	347533 (0.999416)	472737 (0.998815)
Muon Beam Acc.	0.09873 ± 0.000051	0.13655 ± 0.000070	0.09389 ± 0.000049	0.12366 ± 0.000063

Table 7: Muon PV Branch no. 1

Cuts	km2loose acc	km2newloose acc	km2tight acc	km2newtight acc
<i>BADRUN</i>	5189813 (-)	5358988 (-)	5189813 (-)	5358988 (-)
<i>icbit</i>	5185746 (-)	5354824 (-)	5185746 (-)	5354824 (-)
<i>KMU2BOX</i>	4110927 (-)	4254255 (-)	4110927 (-)	4254255 (-)
<i>cos3d</i>	3970039 (-)	4105727 (-)	3970039 (-)	4105727 (-)
<i>utcqual Loose</i>	3701627 (-)	3823051 (-)	3701627 (-)	3823051 (-)
<i>RD_TRK</i>	3701627 (-)	3823051 (-)	3701627 (-)	3823051 (-)
<i>TRKTIM</i>	3701622 (-)	3823045 (-)	3701622 (-)	3823045 (-)
<i>RDUTM</i>	3701622 (-)	3823045 (-)	3701622 (-)	3823045 (-)
<i>TARGET</i>	3701622 (-)	3823045 (-)	3701622 (-)	3823045 (-)
<i>TGCUT</i>	3623499 (-)	3739543 (-)	3623499 (-)	3739543 (-)
<i>tgqualt</i>	3497070 (-)	3609268 (-)	3497070 (-)	3609268 (-)
<i>npitg</i>	3497070 (-)	3609268 (-)	3497070 (-)	3609268 (-)
<i>timcon</i>	3491946 (-)	3604003 (-)	3491946 (-)	3604003 (-)
<i>tgtcon</i>	3454110 (-)	3564990 (-)	3454110 (-)	3564990 (-)
<i>b4etcon</i>	3419878 (-)	3529692 (-)	3419878 (-)	3529692 (-)
<i>DCBIT</i>	3012705 (-)	3109174 (-)	3012705 (-)	3109174 (-)
<i>DELCO</i>	2976694 (-)	3071983 (-)	2976694 (-)	3071983 (-)
<i>Delc Loose</i>	2581750 (-)	2664389 (-)	2122260 (-)	2190178 (-)
<i>PSCUT</i>	2448986 (-)	2527342 (-)	2009337 (-)	2073593 (-)
<i>b4dedx</i>	2435564 (-)	2513492 (-)	1998225 (-)	2062135 (-)
<i>bwtrs</i>	2235637 (-)	2307067 (-)	1832855 (-)	1891380 (-)
<i>cpitrs</i>	2231875 (-)	2303180 (-)	1829835 (-)	1888260 (-)
<i>cpitail</i>	2230844 (-)	2302109 (-)	1829001 (-)	1887395 (-)
<i>cktrs</i>	2216659 (-)	2287435 (-)	1820013 (-)	1878068 (-)
<i>cktail</i>	2180934 (-)	2250546 (-)	1809162 (-)	1866885 (-)
<i>b4trs</i>	2124974 (-)	2192796 (-)	1761223 (-)	1817397 (-)
<i>b4ccd</i>	2095946 (-)	2163144 (-)	1742254 (-)	1798074 (-)
<i>upvtrs</i>	2061527 (-)	2127590 (-)	1714684 (-)	1769599 (-)
<i>rvtrs</i>	2059558 (-)	2125558 (-)	1713140 (-)	1768006 (-)
<i>tggeo</i>	1976928 (-)	2040219 (-)	1643000 (-)	1695600 (-)
<i>b4ekz</i>	1802367 (-)	1860090 (-)	1495538 (-)	1543474 (-)
<i>tgz fool</i>	1780125 (-)	1837124 (-)	1477110 (-)	1524431 (-)
<i>targf</i>	1722793 (-)	1778024 (-)	1429371 (-)	1475249 (-)
<i>dtgttp</i>	1722787 (-)	1778017 (-)	1429365 (-)	1475242 (-)
<i>rtdif</i>	1706324 (-)	1760983 (-)	1415636 (-)	1461030 (-)
<i>tgktim</i>	1689493 (-)	1743623 (-)	1410486 (-)	1455702 (-)
<i>eicon</i>	1644137 (-)	1696861 (-)	1372704 (-)	1416735 (-)
<i>ticcon</i>	1644133 (-)	1696857 (-)	1372701 (-)	1416732 (-)
<i>pigap</i>	1610337 (-)	1662059 (-)	1344511 (-)	1387712 (-)
<i>tgdb4</i>	1584185 (-)	1617233 (-)	1322347 (-)	1349584 (-)
<i>tgdb4tip</i>	1576204 (-)	1608985 (-)	1315471 (-)	1342470 (-)
<i>tgdvxtip</i>	1569993 (-)	1604719 (-)	1310171 (-)	1338850 (-)
<i>tgdvxpi</i>	1535360 (-)	1569044 (-)	1283230 (-)	1311099 (-)
TGB4	1535360 (-)	1569044 (-)	1283230 (-)	1311099 (-)
<i>phivtx1</i>	1489745 (-)	1522063 (-)	1240997 (-)	1267518 (-)
<i>ccd pul</i>	445487 (-)	630826 (-)	424234 (-)	571821 (-)

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Cuts	km2loose acc	km2newloose acc	km2tight acc	km2newtight acc
<i>timkf</i>	400376 (-)	569412 (-)	381031 (-)	515770 (-)
<i>verrng</i>	373562 (-)	531061 (-)	355478 (-)	481061 (-)
<i>angli</i>	373323 (-)	530723 (-)	355245 (-)	480749 (-)
<i>ALLK fit</i>	366294 (-)	523457 (-)	348342 (-)	474120 (-)
<i>tpics</i>	365775 (-)	522753 (-)	347831 (-)	473438 (-)
<i>kic</i>	365679 (-)	522604 (-)	347736 (-)	473298 (-)
<i>epionk</i>	365476 (-)	522043 (-)	347533 (-)	472737 (-)
<i>lay < 19</i>	36725 (-)	53682 (-)	34625 (-)	47902 (-)
<i>lhex</i>	34290 (0.933696)	50193 (0.935006)	32329 (0.93369)	44775 (0.934721)
<i>HEXAfter</i>	33035 (0.9634)	48338 (0.963043)	31153 (0.963624)	43145 (0.963596)
<i>PVOnline</i>	31645 (0.957923)	46284 (0.957508)	29841 (0.957885)	41298 (0.957191)
<i>Lay20or21</i>	31404 (0.992384)	45933 (0.992416)	29614 (0.992393)	40985 (0.992421)
<i>STLAY</i>	31112 (0.990702)	45506 (0.990704)	29344 (0.990883)	40603 (0.99068)
<i>RSHEX</i>	30005 (0.964419)	43885 (0.964378)	28290 (0.964081)	39133 (0.963796)
<i>PVCUT</i>	28836 (0.96104)	42220 (0.96206)	27187 (0.961011)	37642 (0.961899)
<i>TGPVCUT</i>	28617 (0.992405)	41833 (0.990834)	26981 (0.992423)	37296 (0.990808)
<i>TGPVTR</i>	28617 (1)	41833 (1)	26981 (1)	37296 (1)
<i>tgpv Loose60</i>	27779 (0.970717)	40611 (0.970789)	24925 (0.923798)	34403 (0.922431)
<i>ICPV Loose60</i>	27757 (0.999208)	40568 (0.998941)	24908 (0.999318)	34382 (0.99939)
<i>VCPV Loose60</i>	27739 (0.999352)	40543 (0.999384)	24863 (0.998193)	34320 (0.998197)
<i>COPV Loose60</i>	27570 (0.993907)	40315 (0.994376)	24754 (0.995616)	34182 (0.995979)
<i>MCPV Loose60</i>	27567 (0.999891)	40311 (0.999901)	24746 (0.999677)	34173 (0.999737)
<i>ECPVinner Loose60</i>	23879 (0.866217)	34905 (0.865893)	19297 (0.779803)	26621 (0.779007)
<i>ECPVouter Loose60</i>	22196 (0.92952)	32525 (0.931815)	15732 (0.815256)	21724 (0.816047)
<i>ECPV2nd Loose60</i>	22030 (0.992521)	32293 (0.992867)	14577 (0.926583)	20115 (0.925934)
<i>RDPV Loose60</i>	20395 (0.925783)	29945 (0.927291)	10397 (0.713247)	14312 (0.711509)
<i>BVPV Loose60</i>	18952 (0.929247)	27795 (0.928202)	9514 (0.915072)	13121 (0.916783)
<i>BVLPV Loose60</i>	18664 (0.984804)	27353 (0.984098)	9405 (0.988543)	12969 (0.988416)
<i>ADPV Loose60</i>	17726 (0.949743)	26043 (0.952108)	8986 (0.955449)	12403 (0.956357)
<i>earlyBVPV Loose60</i>	17708 (0.998985)	26021 (0.999155)	8982 (0.999555)	12397 (0.999516)
<i>DSPV Loose60</i>	17706 (0.999887)	26017 (0.999846)	8980 (0.999777)	12395 (0.999839)
<i>PVpnn2 Loose60</i>	17706 (1)	26017 (1)	8980 (1)	12395 (1)
Muon PV Acc.	0.48212 ± 0.002516	0.48465 ± 0.002092	0.25935 ± 0.001394	0.25876 ± 0.001182

Table 8: Muon layer14 study Branch no. 1

Cuts	km2loose acc	km2newloose acc	km2tight acc	km2newtight acc
<i>BADRUN</i>	5189813 (-)	5358988 (-)	5189813 (-)	5358988 (-)
<i>Trigger</i>	5189813 (-)	5358988 (-)	5189813 (-)	5358988 (-)
<i>LAYER14</i>	5185883 (0.999243)	5354954 (0.999247)	5185883 (0.999243)	5354954 (0.999247)
Muon PV Acc.	0.99924 ± 0.000439	0.99925 ± 0.000432	0.99924 ± 0.000439	0.99925 ± 0.000432

Table 9: Muon UTCqual Study Branch no. 1

Cuts	km2loose acc	km2newloose acc	km2tight acc	km2newtight acc
<i>BADRUN</i>	5189813 (-)	5358988 (-)	5189813 (-)	5358988 (-)
<i>ictime - cktbm</i>	3324048 (-)	3457079 (-)	3324048 (-)	3457079 (-)
<i>icbit</i>	3322245 (-)	3455005 (-)	3322245 (-)	3455005 (-)
<i>b4dedx</i>	3222580 (-)	3342586 (-)	3222580 (-)	3342586 (-)
<i>cpitrs</i>	3179262 (-)	3296001 (-)	3179262 (-)	3296001 (-)
<i>cpitail</i>	3176138 (-)	3292765 (-)	3176138 (-)	3292765 (-)
<i>cktrs</i>	3014946 (-)	3111758 (-)	3014946 (-)	3111758 (-)
<i>ctail</i>	2937942 (-)	3029704 (-)	2937942 (-)	3029704 (-)
<i>bwtrs</i>	2747076 (-)	2831668 (-)	2747076 (-)	2831668 (-)
<i>PVnoBV Loose60</i>	1483490 (-)	1538173 (-)	733287 (-)	758970 (-)
<i>RD_TRK</i>	1483490 (-)	1538173 (-)	733287 (-)	758970 (-)
<i>TRKTIM</i>	1483375 (-)	1537986 (-)	733236 (-)	758893 (-)
<i>abs(ictime - trs)</i>	1483375 (-)	1537986 (-)	733236 (-)	758893 (-)
<i>RDUTM</i>	1482537 (0.999435)	1537121 (0.999438)	732958 (0.999621)	758607 (0.999623)
<i>UTC</i>	1482537 (1)	1537121 (1)	732958 (1)	758607 (1)
<i>utcqual Loose</i>	1366559 (0.921771)	1410165 (0.917407)	682236 (0.930798)	703491 (0.927346)
<i>TARGET</i>	1366559 (1)	1410165 (1)	682236 (1)	703491 (1)
Muon PV Acc.	0.92125 ± 0.000756	0.91689 ± 0.000739	0.93044 ± 0.001087	0.92700 ± 0.001064

Table 10: Muon epitg study Branch no. 1

Cuts	km2loose acc	km2newloose acc	km2tight acc	km2newtight acc
<i>BADRUN</i>	5189813 (-)	5358988 (-)	5189813 (-)	5358988 (-)
<i>RD_TRK</i>	5189736 (-)	5358910 (-)	5189736 (-)	5358910 (-)
<i>TRKTIM</i>	5187898 (-)	5357048 (-)	5187898 (-)	5357048 (-)
<i>RDUTM</i>	4964444 (-)	5126174 (-)	4964444 (-)	5126174 (-)
<i>TARGET</i>	4964444 (-)	5126174 (-)	4964444 (-)	5126174 (-)
<i>icbit</i>	4961592 (-)	5123258 (-)	4961592 (-)	5123258 (-)
<i>KMU2BOX</i>	4110918 (-)	4254248 (-)	4110918 (-)	4254248 (-)
<i>cos3d</i>	3970030 (-)	4105720 (-)	3970030 (-)	4105720 (-)
<i>utcqual Loose</i>	3701622 (-)	3823045 (-)	3701622 (-)	3823045 (-)
<i>TGCUT</i>	3623499 (0.978895)	3739543 (0.978158)	3623499 (0.978895)	3739543 (0.978158)
<i>tgqualt</i>	3497070 (0.965109)	3609268 (0.965163)	3497070 (0.965109)	3609268 (0.965163)
<i>npitg</i>	3497070 (1)	3609268 (1)	3497070 (1)	3609268 (1)
<i>timcon</i>	3491946 (0.998535)	3604003 (0.998541)	3491946 (0.998535)	3604003 (0.998541)
<i>tgtcon</i>	3454110 (0.989165)	3564990 (0.989175)	3454110 (0.989165)	3564990 (0.989175)
<i>b4etcon</i>	3419878 (0.990089)	3529692 (0.990099)	3419878 (0.990089)	3529692 (0.990099)
<i>DCBIT</i>	3012705 (0.880939)	3109174 (0.880863)	3012705 (0.880939)	3109174 (0.880863)
<i>DELCO</i>	2976694 (0.988047)	3071983 (0.988038)	2976694 (0.988047)	3071983 (0.988038)
<i>Delc Loose</i>	2581750 (0.867321)	2664389 (0.867319)	2122260 (0.712959)	2190178 (0.712953)
<i>PSCUT</i>	2448986 (0.948576)	2527342 (0.948563)	2009337 (0.946791)	2073593 (0.946769)
<i>b4dedx</i>	2435564 (0.994519)	2513492 (0.99452)	1998225 (0.99447)	2062135 (0.994474)
<i>bwtrs</i>	2235637 (0.917913)	2307067 (0.917873)	1832855 (0.917242)	1891380 (0.917195)
<i>cpitrs</i>	2231875 (0.998317)	2303180 (0.998315)	1829835 (0.998352)	1888260 (0.99835)
<i>cpitail</i>	2230844 (0.999538)	2302109 (0.999535)	1829001 (0.999544)	1887395 (0.999542)
<i>cktrs</i>	2216659 (0.993641)	2287435 (0.993626)	1820013 (0.995086)	1878068 (0.995058)
<i>cktail</i>	2180934 (0.983883)	2250546 (0.983873)	1809162 (0.994038)	1866885 (0.994045)
<i>b4trs</i>	2124974 (0.974341)	2192796 (0.97434)	1761223 (0.973502)	1817397 (0.973492)
<i>b4ccd</i>	2095946 (0.98634)	2163144 (0.986478)	1742254 (0.98923)	1798074 (0.989368)
<i>upvtrs</i>	2061527 (0.983578)	2127590 (0.983564)	1714684 (0.984176)	1769599 (0.984164)
<i>rvtrs</i>	2059558 (0.999045)	2125558 (0.999045)	1713140 (0.9991)	1768006 (0.9991)
<i>tggeo</i>	1976928 (0.95988)	2040219 (0.959851)	1643000 (0.959058)	1695600 (0.959047)
<i>b4ekz</i>	1802367 (0.911701)	1860090 (0.911711)	1495538 (0.910248)	1543474 (0.910282)
<i>tgzfool</i>	1780125 (0.98766)	1837124 (0.987653)	1477110 (0.987678)	1524431 (0.987662)
<i>epitg</i>	1630641 (0.916026)	1682638 (0.915909)	1353273 (0.916163)	1396457 (0.916051)
<i>epimaxk</i>	1630641 (1)	1682638 (1)	1353273 (1)	1396457 (1)
TGDEDX	1626327 (0.997354)	1678186 (0.997354)	1349713 (0.997369)	1392782 (0.997368)
<i>tger</i>	1624068 (0.998611)	1675867 (0.998618)	1347756 (0.99855)	1390774 (0.998558)
<i>tgenr</i>	1594604 (0.981858)	1645486 (0.981871)	1322344 (0.981145)	1364570 (0.981159)
<i>tglike1</i>	1570648 (0.984977)	1620717 (0.984947)	1301585 (0.984301)	1343090 (0.984259)
<i>tglike2</i>	1555419 (0.990304)	1605003 (0.990304)	1289050 (0.990369)	1330154 (0.990368)
TGLIKE	1555419 (1)	1605003 (1)	1289050 (1)	1330154 (1)
<i>tgedge</i>	1547702 (0.995039)	1597048 (0.995044)	1283992 (0.996076)	1324944 (0.996083)
<i>drp</i>	1544908 (0.998195)	1594184 (0.998207)	1281562 (0.998107)	1322454 (0.998121)
<i>chi567 Loose</i>	1228866 (0.79543)	1270789 (0.797141)	1018135 (0.794448)	1053341 (0.796505)
<i>chi5max</i>	1117217 (0.909145)	1157005 (0.910462)	925220 (0.90874)	958954 (0.910393)
<i>targf</i>	1091918 (0.977355)	1130937 (0.977469)	904416 (0.977515)	937505 (0.977633)
<i>dtgttp</i>	1091918 (1)	1130937 (1)	904416 (1)	937505 (1)

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Cuts	km2loose acc	km2newloose acc	km2tight acc	km2newtight acc
<i>rtdif</i>	1082078 (0.990988)	1120638 (0.990893)	896233 (0.990952)	928914 (0.990836)
<i>tgktim</i>	1071641 (0.990355)	1109868 (0.990389)	893207 (0.996624)	925782 (0.996628)
<i>iccon</i>	1042781 (0.973069)	1079994 (0.973083)	869203 (0.973126)	900911 (0.973135)
<i>ticcon</i>	1042778 (0.999997)	1079991 (0.999997)	869201 (0.999998)	900909 (0.999998)
<i>pigap</i>	1023331 (0.981351)	1059909 (0.981405)	853035 (0.981401)	884208 (0.981462)
<i>tgdb4</i>	1007055 (0.984095)	1032006 (0.973674)	839280 (0.983875)	860483 (0.973168)
<i>tgdb4tip</i>	1002302 (0.99528)	1027108 (0.995254)	835162 (0.995093)	856232 (0.99506)
<i>tgdvrtip</i>	998855 (0.996561)	1024731 (0.997686)	832216 (0.996473)	854214 (0.997643)
<i>tgdvxpi</i>	979494 (0.980617)	1004834 (0.980583)	817200 (0.981957)	838762 (0.981911)
TGB4	979494 (1)	1004834 (1)	817200 (1)	838762 (1)
<i>phivtx1</i>	956810 (0.976841)	980291 (0.975575)	796091 (0.974169)	815785 (0.972606)
<i>ccdpu1</i>	297432 (0.310858)	417836 (0.426237)	283387 (0.355973)	379141 (0.464756)
<i>timkf</i>	267757 (0.900229)	377648 (0.903819)	254943 (0.899628)	342475 (0.903292)
<i>verrng</i>	252193 (0.941873)	355665 (0.94179)	240080 (0.941701)	322503 (0.941683)
<i>angli</i>	252072 (0.99952)	355488 (0.999502)	239963 (0.999513)	322340 (0.999495)
<i>ALLKfit</i>	247360 (0.981307)	350734 (0.986627)	235328 (0.980685)	318002 (0.986542)
<i>tpics</i>	247263 (0.999608)	350614 (0.999658)	235232 (0.999592)	317886 (0.999635)
<i>kic</i>	247205 (0.999765)	350527 (0.999752)	235174 (0.999753)	317802 (0.999736)
<i>epionk</i>	247073 (0.999466)	350172 (0.998987)	235042 (0.999439)	317447 (0.998883)
Muon PV Acc.	0.06675 ± 0.000035	0.09160 ± 0.000047	0.06350 ± 0.000033	0.08304 ± 0.000042

Table 11: Piscat BadStc Branch no. 1

Cuts	piloose acc	pinewloose acc	pitight acc	pinewtight acc
<i>BADRUN</i>	5840653 (-)	5863903 (-)	5840653 (-)	5863903 (-)
<i>DUPEV</i>	5840653 (-)	5863903 (-)	5840653 (-)	5863903 (-)
<i>RD_TRK</i>	5840173 (-)	5863421 (-)	5840173 (-)	5863421 (-)
<i>TRKTIM</i>	5837488 (-)	5860742 (-)	5837488 (-)	5860742 (-)
<i>TARGET</i>	5837488 (-)	5860742 (-)	5837488 (-)	5860742 (-)
<i>STLAY</i>	4934038 (-)	4954014 (-)	4934038 (-)	4954014 (-)
<i>UTC</i>	4578550 (-)	4597035 (-)	4578550 (-)	4597035 (-)
<i>RDUTM</i>	4482624 (-)	4500714 (-)	4482624 (-)	4500714 (-)
<i>PDC</i>	2824690 (-)	2835925 (-)	2824690 (-)	2835925 (-)
<i>ICbit</i>	2824690 (-)	2835925 (-)	2824690 (-)	2835925 (-)
<i>b4abm2</i>	1980575 (-)	1988574 (-)	1980575 (-)	1988574 (-)
<i>tpi - trs</i>	1875533 (-)	1863824 (-)	1875533 (-)	1863824 (-)
<i>ictime - trs</i>	1842034 (-)	1830225 (-)	1842034 (-)	1830225 (-)
<i>BOX Loose</i>	376962 (-)	402855 (-)	293449 (-)	314314 (-)
<i>targf</i>	358720 (-)	383512 (-)	279019 (-)	299006 (-)
<i>dtgttp</i>	345529 (-)	348376 (-)	267512 (-)	269687 (-)
<i>rtdif</i>	328080 (-)	330806 (-)	253532 (-)	255602 (-)
<i>tgqualt</i>	291277 (-)	292632 (-)	222997 (-)	224086 (-)
<i>tgz fool</i>	237515 (-)	238580 (-)	181215 (-)	182062 (-)
<i>cktrs</i>	224263 (-)	225283 (-)	171141 (-)	171954 (-)
<i>cktail</i>	221955 (-)	222961 (-)	169428 (-)	170236 (-)
<i>cos3d</i>	205877 (-)	206828 (-)	158176 (-)	158929 (-)
<i>layv4</i>	205857 (-)	206808 (-)	158156 (-)	158909 (-)
<i>RDPV Loose60</i>	153484 (-)	154167 (-)	72944 (-)	73374 (-)
<i>BAD_STC</i>	153246 (0.998449)	153928 (0.99845)	72888 (0.999232)	73319 (0.99925)
Piscat BadStc Acc.	0.99845 ± 0.002549	0.99845 ± 0.002543	0.99923 ± 0.003700	0.99925 ± 0.003689

Table 12: Piscat Kin Branch no. 1

Cuts	piloose acc	pinewloose acc	pitight acc	pinewtight acc
<i>SetupBadStC</i>	153484 (-)	154167 (-)	72944 (-)	73374 (-)
<i>BAD_sTC</i>	153246 (-)	153928 (-)	72888 (-)	73319 (-)
<i>pi_flg</i>	121324 (-)	121873 (-)	57741 (-)	58080 (-)
<i>ev502 off</i>	121324 (-)	121873 (-)	46834 (-)	47131 (-)
<i>elveto</i>	107004 (-)	107479 (-)	42367 (-)	42615 (-)
<i>tdfool</i>	102539 (-)	102999 (-)	40948 (-)	41188 (-)
<i>tdvarnn02 Loose</i>	88585 (-)	88994 (-)	31442 (-)	31645 (-)
TD Loose	88585 (-)	88994 (-)	31442 (-)	31645 (-)
<i>utcqual Loose</i>	84241 (0.950962)	84638 (0.951053)	29952 (0.952611)	30151 (0.952789)
<i>rngmom</i>	82723 (0.98198)	83110 (0.981947)	29425 (0.982405)	29619 (0.982355)
<i>rsdedxmax</i>	80328 (0.971048)	80707 (0.971087)	28687 (0.974919)	28872 (0.97478)
<i>rsdedxcl</i>	76709 (0.954947)	77075 (0.954998)	27518 (0.95925)	27690 (0.959061)
<i>rslike</i>	76709 (1)	77075 (1)	27518 (1)	27690 (1)
RSDEDX	76709 (1)	77075 (1)	27518 (1)	27690 (1)
<i>prrf1</i>	76082 (0.991826)	76445 (0.991826)	27366 (0.994476)	27538 (0.994511)
<i>prrfz</i>	73498 (0.966037)	73846 (0.966002)	26512 (0.968793)	26681 (0.968879)
PRRF	73498 (1)	73846 (1)	26512 (1)	26681 (1)
<i>icodel14</i>	73498 (1)	73846 (1)	26512 (1)	26681 (1)
Piscat Kin Acc.	0.82969 ± 0.002788	0.82979 ± 0.002782	0.84320 ± 0.004755	0.84313 ± 0.004740

Table 13: Piscat TD1 Branch no. 1

Cuts	piloose acc	pinewloose acc	pitight acc	pinewtight acc
<i>BADRUN</i>	5840653 (-)	5863903 (-)	5840653 (-)	5863903 (-)
<i>DUPEV</i>	5840653 (-)	5863903 (-)	5840653 (-)	5863903 (-)
<i>RD_TRK</i>	5840173 (-)	5863421 (-)	5840173 (-)	5863421 (-)
<i>TRKTIM</i>	5837488 (-)	5860742 (-)	5837488 (-)	5860742 (-)
<i>TARGET</i>	5837488 (-)	5860742 (-)	5837488 (-)	5860742 (-)
<i>STLAY</i>	4934038 (-)	4954014 (-)	4934038 (-)	4954014 (-)
<i>UTC</i>	4578550 (-)	4597035 (-)	4578550 (-)	4597035 (-)
<i>RDUTM</i>	4482624 (-)	4500714 (-)	4482624 (-)	4500714 (-)
<i>PDC</i>	2824690 (-)	2835925 (-)	2824690 (-)	2835925 (-)
<i>ICbit</i>	2824690 (-)	2835925 (-)	2824690 (-)	2835925 (-)
<i>b4abm2</i>	1980575 (-)	1988574 (-)	1980575 (-)	1988574 (-)
<i>t_{pi} - trs</i>	1875533 (-)	1863824 (-)	1875533 (-)	1863824 (-)
<i>ictime - trs</i>	1842034 (-)	1830225 (-)	1842034 (-)	1830225 (-)
<i>BOX Loose</i>	376962 (-)	402855 (-)	293449 (-)	314314 (-)
<i>targf</i>	358720 (-)	383512 (-)	279019 (-)	299006 (-)
<i>dtgttp</i>	345529 (-)	348376 (-)	267512 (-)	269687 (-)
<i>rtdif</i>	328080 (-)	330806 (-)	253532 (-)	255602 (-)
<i>tgqualt</i>	291277 (-)	292632 (-)	222997 (-)	224086 (-)
<i>tgzfool</i>	237515 (-)	238580 (-)	181215 (-)	182062 (-)
<i>cktrs</i>	224263 (-)	225283 (-)	171141 (-)	171954 (-)
<i>cktail</i>	221955 (-)	222961 (-)	169428 (-)	170236 (-)
<i>cos3d</i>	205877 (-)	206828 (-)	158176 (-)	158929 (-)
<i>layv4</i>	205857 (-)	206808 (-)	158156 (-)	158909 (-)
<i>RDPV Loose60</i>	153484 (-)	154167 (-)	72944 (-)	73374 (-)
<i>BAD_STC</i>	153246 (-)	153928 (-)	72888 (-)	73319 (-)
<i>rngmom</i>	142681 (-)	143320 (-)	67757 (-)	68163 (-)
<i>zfrf</i>	142613 (-)	143252 (-)	67749 (-)	68155 (-)
<i>zutout</i>	142460 (-)	143098 (-)	67675 (-)	68081 (-)
<i>LAYER14</i>	142459 (-)	143097 (-)	67675 (-)	68081 (-)
<i>utqual Loose</i>	135706 (-)	136314 (-)	64513 (-)	64894 (-)
<i>iccon</i>	126052 (-)	126616 (-)	60093 (-)	60446 (-)
<i>pi_flg</i>	103907 (0.824319)	104379 (0.824374)	49726 (0.827484)	50015 (0.827433)
<i>RSHEX2</i>	101983 (0.981483)	102441 (0.981433)	48883 (0.983047)	49163 (0.982965)
<i>Lev1.1</i>	82538 (0.809331)	82917 (0.809412)	39855 (0.815314)	40088 (0.81541)
<i>Lev1.2</i>	69283 (0.839407)	69596 (0.839345)	35769 (0.897478)	35974 (0.897376)
<i>TDCUT</i>	65104 (0.939682)	65398 (0.93968)	33680 (0.941597)	33871 (0.941541)
<i>elveto</i>	62350 (0.957698)	62629 (0.957659)	32405 (0.962144)	32584 (0.962003)
<i>tdfool</i>	62135 (0.996552)	62412 (0.996535)	32300 (0.99676)	32478 (0.996747)
<i>tdvarnn02 Loose</i>	58533 (0.942029)	58799 (0.94211)	27348 (0.846687)	27508 (0.846973)
<i>ev502 off</i>	58533 (1)	58799 (1)	22748 (0.831798)	22884 (0.831903)
TD Loose	58533 (1)	58799 (1)	22748 (1)	22884 (1)
Piscat TD1 Acc.	0.46436 ± 0.001308	0.46439 ± 0.001305	0.37855 ± 0.001544	0.37859 ± 0.001540

Table 14: Piscat TD2 Branch no. 1

Cuts	piloose acc	pinewloose acc	pitight acc	pinewtight acc
<i>SetupTD1</i>	126052 (-)	126616 (-)	60093 (-)	60446 (-)
RSDEX	112223 (-)	112729 (-)	54021 (-)	54333 (-)
PRRF	106976 (-)	107453 (-)	51691 (-)	51999 (-)
<i>pi_flg</i>	90042 (0.841703)	90448 (0.841745)	43644 (0.844325)	43896 (0.84417)
<i>RSHEX2</i>	88503 (0.982908)	88900 (0.982885)	42947 (0.98403)	43192 (0.983962)
<i>Lev1.1</i>	72460 (0.818729)	72788 (0.818763)	35391 (0.824062)	35600 (0.824227)
<i>Lev1.2</i>	61850 (0.853574)	62129 (0.853561)	32269 (0.911785)	32454 (0.911629)
<i>TDCUT</i>	58230 (0.941471)	58494 (0.941493)	30432 (0.943072)	30606 (0.943058)
<i>elveto</i>	55779 (0.957908)	56032 (0.95791)	29287 (0.962375)	29449 (0.962197)
<i>tdfool</i>	55602 (0.996827)	55854 (0.996823)	29204 (0.997166)	29365 (0.997148)
<i>tdvarnn02 Loose</i>	52416 (0.9427)	52657 (0.942761)	24765 (0.848)	24909 (0.848255)
<i>ev502 off</i>	52416 (1)	52657 (1)	20635 (0.833232)	20757 (0.833313)
TD Loose	52416 (1)	52657 (1)	20635 (1)	20757 (1)
Piscat TD1 Acc.	0.48998 ± 0.001498	0.49005 ± 0.001495	0.39920 ± 0.001756	0.39918 ± 0.001751

Table 15: Piscat Kin Acc tgdedx study Branch no. 1

Cuts	piloose acc	pinewloose acc	pitight acc	pinewtight acc
<i>SetupBadStC</i>	153484 (-)	154167 (-)	72944 (-)	73374 (-)
<i>BAD_sTC</i>	153246 (-)	153928 (-)	72888 (-)	73319 (-)
<i>pi_flg</i>	121324 (-)	121873 (-)	57741 (-)	58080 (-)
<i>ev502 off</i>	121324 (-)	121873 (-)	46834 (-)	47131 (-)
<i>elveto</i>	107004 (-)	107479 (-)	42367 (-)	42615 (-)
<i>tdfool</i>	102539 (-)	102999 (-)	40948 (-)	41188 (-)
<i>tdvarnn02 Loose</i>	88585 (-)	88994 (-)	31442 (-)	31645 (-)
TD Loose	88585 (-)	88994 (-)	31442 (-)	31645 (-)
<i>utcqual Loose</i>	84241 (0.950962)	84638 (0.951053)	29952 (0.952611)	30151 (0.952789)
<i>rngmom</i>	82723 (0.98198)	83110 (0.981947)	29425 (0.982405)	29619 (0.982355)
<i>rsdedxmax</i>	80328 (0.971048)	80707 (0.971087)	28687 (0.974919)	28872 (0.97478)
<i>rsdedxcl</i>	76709 (0.954947)	77075 (0.954998)	27518 (0.95925)	27690 (0.959061)
<i>rslike</i>	76709 (1)	77075 (1)	27518 (1)	27690 (1)
RSDEDX	76709 (1)	77075 (1)	27518 (1)	27690 (1)
<i>prrf1</i>	76082 (0.991826)	76445 (0.991826)	27366 (0.994476)	27538 (0.994511)
<i>prrfz</i>	73498 (0.966037)	73846 (0.966002)	26512 (0.968793)	26681 (0.968879)
PRRF	73498 (1)	73846 (1)	26512 (1)	26681 (1)
<i>icodel14</i>	73498 (1)	73846 (1)	26512 (1)	26681 (1)
TGDEDX	65814 (0.895453)	66195 (0.896392)	23708 (0.894237)	23892 (0.895469)
Piscat TD1 Acc.	0.74295 ± 0.002496	0.74381 ± 0.002493	0.75402 ± 0.004252	0.75500 ± 0.004244

Table 16: Kin tgdedx calib Branch no. 1

Cuts	piloose acc	pinewloose acc	pitight acc	pinewtight acc
<i>BADRUN</i>	5840653 (-)	5863903 (-)	5840653 (-)	5863903 (-)
<i>DUPEV</i>	5840653 (-)	5863903 (-)	5840653 (-)	5863903 (-)
<i>RD_{TRK}</i>	5840173 (-)	5863421 (-)	5840173 (-)	5863421 (-)
<i>TRKTIM</i>	5837488 (-)	5860742 (-)	5837488 (-)	5860742 (-)
<i>TARGET</i>	5837488 (-)	5860742 (-)	5837488 (-)	5860742 (-)
<i>STLAY</i>	4934038 (-)	4954014 (-)	4934038 (-)	4954014 (-)
<i>UTC</i>	4578550 (-)	4597035 (-)	4578550 (-)	4597035 (-)
<i>RDUTM</i>	4482624 (-)	4500714 (-)	4482624 (-)	4500714 (-)
<i>PDC</i>	2824690 (-)	2835925 (-)	2824690 (-)	2835925 (-)
<i>ICbit</i>	2824690 (-)	2835925 (-)	2824690 (-)	2835925 (-)
<i>b4abm2</i>	1980575 (-)	1988574 (-)	1980575 (-)	1988574 (-)
<i>t_{pi} - trs</i>	1875533 (-)	1863824 (-)	1875533 (-)	1863824 (-)
<i>ictime - trs</i>	1842034 (-)	1830225 (-)	1842034 (-)	1830225 (-)
<i>BAD_sTC</i>	1839198 (-)	1827380 (-)	1839198 (-)	1827380 (-)
<i>TGCUT</i>	1503334 (0.817386)	1509389 (0.825985)	1503334 (0.817386)	1509389 (0.825985)
<i>tgqualt</i>	1431017 (0.951896)	1436767 (0.951886)	1431017 (0.951896)	1436767 (0.951886)
<i>npitg</i>	1431017 (1)	1436767 (1)	1431017 (1)	1436767 (1)
<i>timcon</i>	1425983 (0.996482)	1431706 (0.996478)	1425983 (0.996482)	1431706 (0.996478)
<i>tgtcon</i>	1385602 (0.971682)	1390710 (0.971366)	1385602 (0.971682)	1390710 (0.971366)
<i>b4etcon</i>	1356515 (0.979008)	1361485 (0.978986)	1356515 (0.979008)	1361485 (0.978986)
<i>targf</i>	1274109 (0.939252)	1278766 (0.939244)	1274109 (0.939252)	1278766 (0.939244)
<i>dtgttp</i>	1274041 (0.999947)	1278696 (0.999945)	1274041 (0.999947)	1278696 (0.999945)
<i>rtdif</i>	1177938 (0.924568)	1182109 (0.924464)	1177938 (0.924568)	1182109 (0.924464)
<i>eiccon</i>	1146002 (0.972888)	1150012 (0.972848)	1146002 (0.972888)	1150012 (0.972848)
<i>ticcon</i>	1145991 (0.99999)	1150001 (0.99999)	1145991 (0.99999)	1150001 (0.99999)
<i>pigap</i>	1030822 (0.899503)	1034903 (0.899915)	1030822 (0.899503)	1034903 (0.899915)
<i>tgdb4</i>	883570 (0.857151)	827610 (0.799698)	883570 (0.857151)	827610 (0.799698)
<i>tgdb4tip</i>	559891 (0.633669)	501195 (0.605593)	559891 (0.633669)	501195 (0.605593)
<i>tgdvrtip</i>	464522 (0.829665)	425070 (0.848113)	464522 (0.829665)	425070 (0.848113)
<i>tgdvxpi</i>	425813 (0.916669)	386187 (0.908526)	425813 (0.916669)	386187 (0.908526)
TGB4	425813 (1)	386187 (1)	425813 (1)	386187 (1)
<i>phivtx1</i>	314467 (0.73851)	288587 (0.747273)	314467 (0.73851)	288587 (0.747273)
<i>pv(not tg) Loose60</i>	86782 (0.275965)	80382 (0.278536)	42963 (0.136622)	39800 (0.137913)
<i>cos3d</i>	76569 (0.882314)	70865 (0.881603)	37998 (0.884435)	35163 (0.883492)
<i>utqual Loose</i>	72325 (0.944573)	66968 (0.945008)	36059 (0.948971)	33369 (0.94898)
<i>rngmom</i>	65542 (0.906215)	60791 (0.907762)	32893 (0.912199)	30474 (0.913243)
<i>rsdedxmax</i>	46233 (0.705395)	42869 (0.705187)	23479 (0.713799)	21712 (0.712476)
<i>rsdedxcl</i>	41758 (0.903208)	38737 (0.903613)	21281 (0.906384)	19701 (0.907378)
<i>rslike</i>	41292 (0.98884)	38304 (0.988822)	21019 (0.987689)	19456 (0.987564)
RSDEDX	41292 (1)	38304 (1)	21019 (1)	19456 (1)
<i>tgz > -10.</i>	41108 (0.995544)	38146 (0.995875)	20936 (0.996051)	19388 (0.996505)
<i>Kpiang > 35</i>	23579 (0.573587)	22394 (0.58706)	11973 (0.571886)	11377 (0.586806)
<i>Kpiang > 55</i>	14275 (0.605412)	14107 (0.629946)	7223 (0.603274)	7173 (0.630483)
Piscat TD1 Acc.	0.00776 ± 0.000006	0.00772 ± 0.000006	0.00393 ± 0.000003	0.00393 ± 0.000003

Table 17: Kpi2 UTC Branch no. 1

Cuts	kp2loose acc	kp2newloose acc	kp2tight acc	kp2newtight acc
<i>BADRUN</i>	1903930 (-)	1799844 (-)	1903930 (-)	1799844 (-)
<i>RD_TRK</i>	1903879 (-)	1799811 (-)	1903879 (-)	1799811 (-)
<i>TRKTIM</i>	1903084 (-)	1799142 (-)	1903084 (-)	1799142 (-)
<i>STLAY</i>	1499739 (-)	1417719 (-)	1499739 (-)	1417719 (-)
<i>BAD_STC</i>	1494951 (-)	1412870 (-)	1494951 (-)	1412870 (-)
<i>TARGET</i>	1494951 (-)	1412870 (-)	1494951 (-)	1412870 (-)
<i>UTC</i>	1410463 (0.943484)	1332820 (0.943342)	1410463 (0.943484)	1332820 (0.943342)
<i>UTC1</i>	1410463 (1)	1332820 (1)	1410463 (1)	1332820 (1)
Kpi2 UTC Acc.	0.94348 ± 0.000772	0.94334 ± 0.000794	0.94348 ± 0.000772	0.94334 ± 0.000794

Table 18: Kpi2 OPS Branch no. 1

Cuts	kp2loose acc	kp2newloose acc	kp2tight acc	kp2newtight acc
<i>BADRUN</i>	1903930 (-)	1799844 (-)	1903930 (-)	1799844 (-)
<i>DUPEV</i>	1903930 (-)	1799844 (-)	1903930 (-)	1799844 (-)
<i>TRIGGER</i>	1903930 (-)	1799844 (-)	1903930 (-)	1799844 (-)
<i>RD_TRK</i>	1903879 (-)	1799811 (-)	1903879 (-)	1799811 (-)
<i>TRKTIM</i>	1903084 (-)	1799142 (-)	1903084 (-)	1799142 (-)
<i>TARGET</i>	1903084 (-)	1799142 (-)	1903084 (-)	1799142 (-)
<i>STLAY</i>	1499739 (-)	1417719 (-)	1499739 (-)	1417719 (-)
<i>UTC</i>	1414994 (-)	1337410 (-)	1414994 (-)	1337410 (-)
<i>RDUTM</i>	1404710 (-)	1327706 (-)	1404710 (-)	1327706 (-)
<i>BAD_STC</i>	1400217 (-)	1323154 (-)	1400217 (-)	1323154 (-)
<i>PDC</i>	1361363 (-)	1286348 (-)	1361363 (-)	1286348 (-)
<i>b4dedx</i>	1304305 (-)	1232466 (-)	1304305 (-)	1232466 (-)
<i>bwtrs</i>	1156465 (-)	1092826 (-)	1156465 (-)	1092826 (-)
<i>b4trs</i>	1081839 (-)	1022250 (-)	1081839 (-)	1022250 (-)
<i>b4etcon</i>	1073431 (-)	1014331 (-)	1073431 (-)	1014331 (-)
<i>b4ccd</i>	1059122 (-)	1000858 (-)	1059122 (-)	1000858 (-)
<i>cpitrs</i>	1053444 (-)	995483 (-)	1053444 (-)	995483 (-)
<i>cpitail</i>	1052979 (-)	995039 (-)	1052979 (-)	995039 (-)
<i>cktrs</i>	852467 (-)	805485 (-)	852467 (-)	805485 (-)
<i>cktail</i>	813300 (-)	768085 (-)	813300 (-)	768085 (-)
<i>tgqualt</i>	750281 (-)	708512 (-)	750281 (-)	708512 (-)
<i>timcon</i>	744274 (-)	702820 (-)	744274 (-)	702820 (-)
<i>tgtcon</i>	736589 (-)	695548 (-)	736589 (-)	695548 (-)
<i>rvtrs</i>	734993 (-)	694038 (-)	734993 (-)	694038 (-)
<i>upvtrs</i>	722488 (-)	682118 (-)	722488 (-)	682118 (-)
<i>Delc Loose</i>	645170 (-)	609377 (-)	532832 (-)	503103 (-)
<i>tggeo</i>	553127 (-)	522475 (-)	455671 (-)	430322 (-)
PSCut06	553127 (-)	522475 (-)	455671 (-)	430322 (-)
<i>icodel14</i>	550747 (-)	520209 (-)	453690 (-)	428434 (-)
<i>cos3d</i>	500121 (-)	472363 (-)	412060 (-)	389129 (-)
<i>layv4</i>	500062 (-)	472310 (-)	412012 (-)	389087 (-)
<i>zfrf</i>	486845 (-)	459796 (-)	401170 (-)	378811 (-)
<i>zutout</i>	486003 (-)	459003 (-)	400476 (-)	378154 (-)
FIDUCIAL	486003 (-)	459003 (-)	400476 (-)	378154 (-)
<i>utcqual Loose</i>	459504 (-)	434030 (-)	378571 (-)	357521 (-)
<i>prrf1</i>	357650 (-)	337690 (-)	294190 (-)	277638 (-)
<i>prrfz</i>	310927 (-)	293467 (-)	255817 (-)	241341 (-)
PRRF	310927 (-)	293467 (-)	255817 (-)	241341 (-)
<i>rsdedxmax</i>	269813 (-)	254537 (-)	221950 (-)	209271 (-)
<i>rsdedxcl</i>	233194 (-)	220015 (-)	191872 (-)	180946 (-)
<i>rslike</i>	224461 (-)	211752 (-)	184637 (-)	174101 (-)
RSDEDX	224461 (-)	211752 (-)	184637 (-)	174101 (-)
<i>rngmom</i>	163889 (-)	154431 (-)	134716 (-)	126890 (-)
Kincut06	163889 (-)	154431 (-)	134716 (-)	126890 (-)
<i>tgdb4</i>	160386 (-)	149340 (-)	131752 (-)	122586 (-)
<i>tgdb4tip</i>	157773 (-)	146867 (-)	129486 (-)	120452 (-)

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Cuts	kp2loose acc	kp2newloose acc	kp2tight acc	kp2newtight acc
<i>tgdvxtip</i>	156424 (-)	145888 (-)	128356 (-)	119642 (-)
<i>tgdvxpi</i>	151537 (-)	141338 (-)	124578 (-)	116137 (-)
TGB4	151537 (-)	141338 (-)	124578 (-)	116137 (-)
<i>piflg</i>	124381 (-)	116025 (-)	102303 (-)	95388 (-)
<i>elveto</i>	110625 (-)	103108 (-)	91007 (-)	84772 (-)
<i>tdfool</i>	108292 (-)	100931 (-)	89102 (-)	82999 (-)
<i>tdvarnn02 Loose</i>	93198 (-)	86892 (-)	67691 (-)	63098 (-)
TD Loose	93198 (-)	86892 (-)	56350 (-)	52504 (-)
<i>b4ekz</i>	86403 (-)	80621 (-)	52216 (-)	48699 (-)
<i>dtgttp</i>	86398 (-)	80617 (-)	52213 (-)	48697 (-)
<i>kic</i>	86370 (-)	80592 (-)	52195 (-)	48681 (-)
<i>phivtx1</i>	82912 (-)	77314 (-)	49916 (-)	46488 (-)
<i>rtdif</i>	82323 (-)	76755 (-)	49560 (-)	46148 (-)
<i>iccon</i>	80911 (-)	75426 (-)	48704 (-)	45342 (-)
<i>targf</i>	78692 (-)	73341 (-)	47353 (-)	44077 (-)
<i>ticcon</i>	78677 (-)	73328 (-)	47344 (-)	44070 (-)
<i>pigap</i>	77184 (-)	71932 (-)	46471 (-)	43245 (-)
<i>tgzfool</i>	76238 (-)	71060 (-)	45911 (-)	42737 (-)
<i>tgktim</i>	75507 (-)	70379 (-)	45765 (-)	42600 (-)
<i>timkf</i>	66674 (-)	62696 (-)	40384 (-)	37934 (-)
<i>Kpi2Box</i>	62093 (-)	58405 (-)	37613 (-)	35342 (-)
<i>opsveto</i>	60481 (0.974039)	56882 (0.973923)	36619 (0.973573)	34401 (0.973374)
Kpi2 OPS Acc.	0.97404 ± 0.003909	0.97392 ± 0.004030	0.97357 ± 0.005020	0.97337 ± 0.005178

Table 19: Kpi2 TGkin Branch no. 1

Cuts	kp2loose acc	kp2newloose acc	kp2tight acc	kp2newtight acc
<i>SetupOPS</i>	62093 (-)	58405 (-)	37613 (-)	35342 (-)
<i>opsveto</i>	60481 (-)	56882 (-)	36619 (-)	34401 (-)
TGPVCUT	59829 (-)	56260 (-)	36225 (-)	34021 (-)
TGDEDX	59179 (0.989136)	55662 (0.989371)	35827 (0.989013)	33654 (0.989213)
<i>tger</i>	59163 (0.99973)	55648 (0.999748)	35818 (0.999749)	33647 (0.999792)
<i>tgenr</i>	57232 (0.967361)	53811 (0.966989)	34582 (0.965492)	32472 (0.965079)
<i>tglike1</i>	56199 (0.981951)	52844 (0.98203)	33943 (0.981522)	31879 (0.981738)
<i>tglike2</i>	55299 (0.983985)	51997 (0.983972)	33394 (0.983826)	31363 (0.983814)
TGLIKE	55299 (1)	51997 (1)	33394 (1)	31363 (1)
<i>epitg</i>	49570 (0.8964)	46608 (0.896359)	30016 (0.898844)	28178 (0.898447)
<i>epimaxk</i>	49570 (1)	46608 (1)	30016 (1)	28178 (1)
<i>tgedge</i>	49304 (0.994634)	46363 (0.994743)	29866 (0.995003)	28037 (0.994996)
<i>drp</i>	49219 (0.998276)	46286 (0.998339)	29810 (0.998125)	27988 (0.998252)
<i>chi567 Loose</i>	42331 (0.860054)	39892 (0.861859)	25654 (0.860584)	24148 (0.862798)
<i>chi5max</i>	39415 (0.931114)	37198 (0.932468)	23896 (0.931473)	22519 (0.932541)
Kpi2 TGkin Acc.	0.65879 ± 0.002693	0.66118 ± 0.002788	0.65965 ± 0.003466	0.66192 ± 0.003589