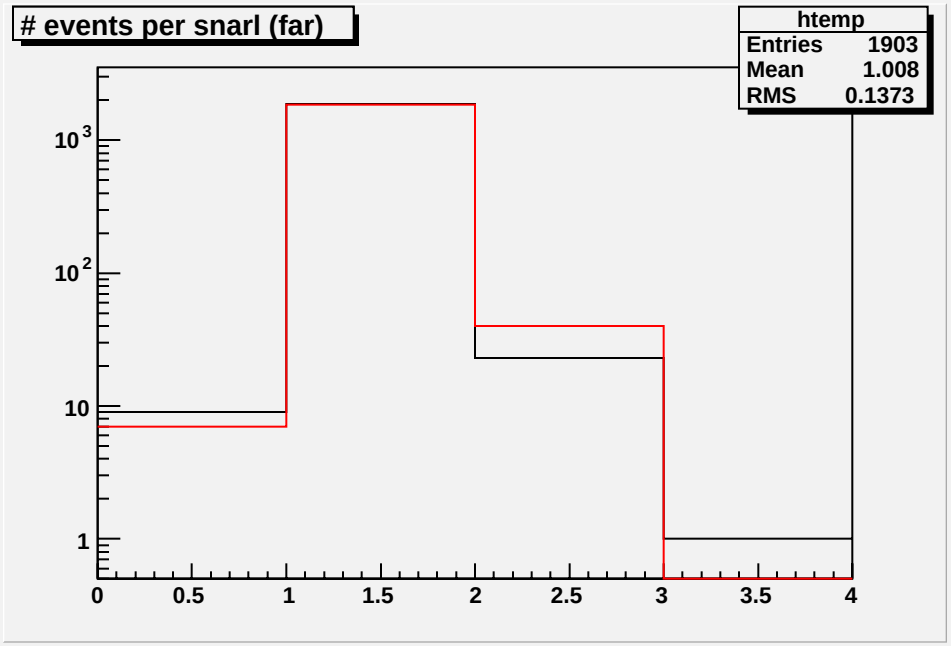
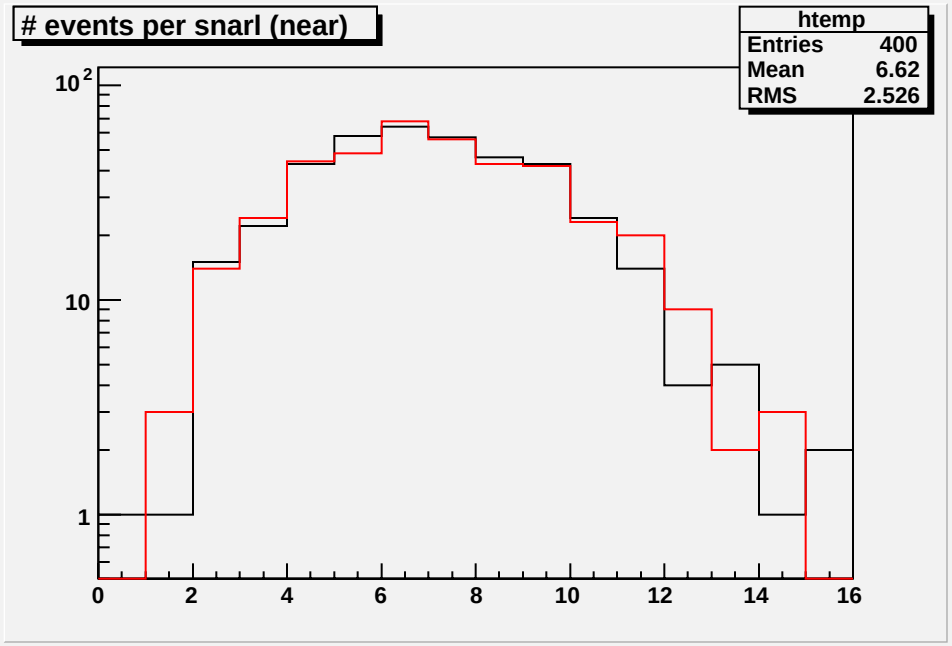
Comparison of R1.18 and R1.18-2

	R1-18 Far	***R1-18 Near***	***R1-18.2 Far***	***R1-18.2 Near***
Evt/Snarl	1.0	6.7	1.02	9.2
Evt/Slice	0.99	0.81	1.0	0.85
Shw/Snarl	1.4	6.1	1.7	8.8
Trk/Snarl	0.96	5.5	0.97	7.4
# Plane/Trk	46.7	45.3	45.8	45.9
Range (GeV)	2.67	4.2	2.76	4.3
Trk Chi2	0.8	0.75	1.1	1.0
Fit Passed %	95	88	94	87
Finder CPU	.49	2.0	1.4	3.3
Fitter CPU	1.4	1.5	1.8	1.9
Swim Fail	7.5	5.1	7.6	5.4
Time Fit Chi2	.76	1.7	.77	1.7
1/beta rms	.17	.30	.19	.30
Trk Purity	.88	.91	.86	.90
Trk Compl	.80	.85	.78	.84
Compl Slc-Snrl	.006	.002	.007	.002
Trk MIP	1.2	1.11	1.2	1.09
Shw PE sum	483	247	453	217
Shw GeV	2.25	1.38	2.23	1.24
Shw U-V Length (planes)	1.7	1.3	1.6	1.3
Shw Purity	.97	.91	.98	.92
Shw Compl	.89	.84	.89	.84
Compl Slc-Snrl	.007	.007	.009	.009
Trk-Shw Vtx Z RMS Reco-Truth	.14	.14	.18	.21
Trk Vtx Z RMS Reco-Truth	.12	.12	.16	.16
Evt Vtx Z RMS	.09	.18	.13	.22
Trk Curve-Range (GeV)	.24	.35		.35
Trk Curve-Range (RMS)	.51	.95		.89
Range Error (GeV)	0.04	0.015		0
Range Error	0.32	0.89		0.89

(RMS)				
Trk dP/P Mean	-0.08	-0.05	-0.04	-0.02
Trk dP/P RMS	0.35	0.43	0.35	0.43
Shw dE/E Mean	0.01	-0.07	-0.02	-0.06
Shw dE/E RMS	**0.32**	**0.35**	**0.33**	0.38

In Plots that follow, pages 3-57 (red) are R1-18 checkplots. The black histograms are from an earlier release. Pages 58-110 (red) are the same plots, for R1-18-2.





 # Events/Snarl (Far Detector)

 # Entries 1903 / 1904

Mean 1.008408 / 1.018908

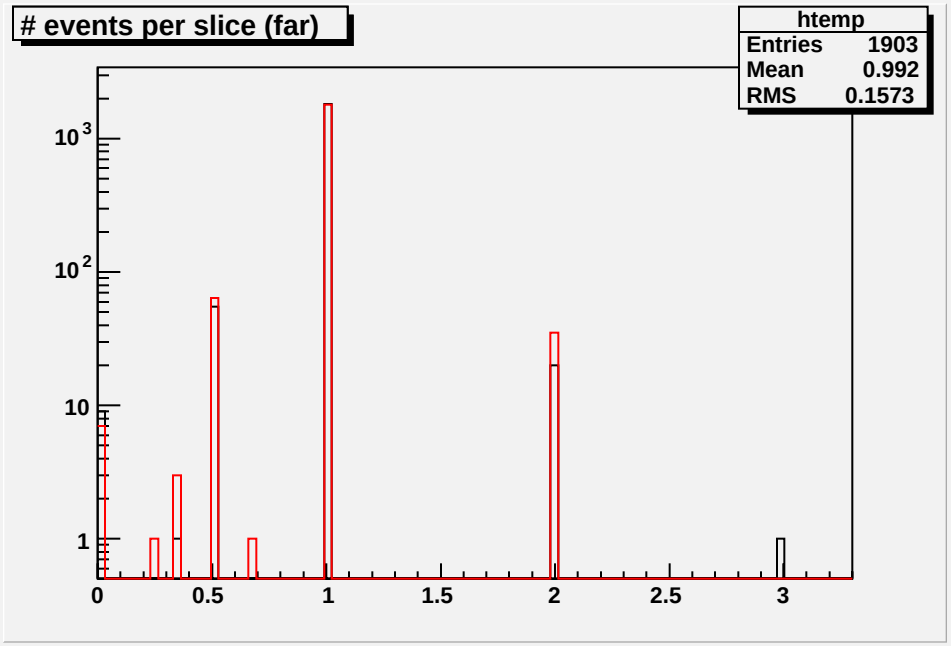
RMS 0.137284 / 0.170453

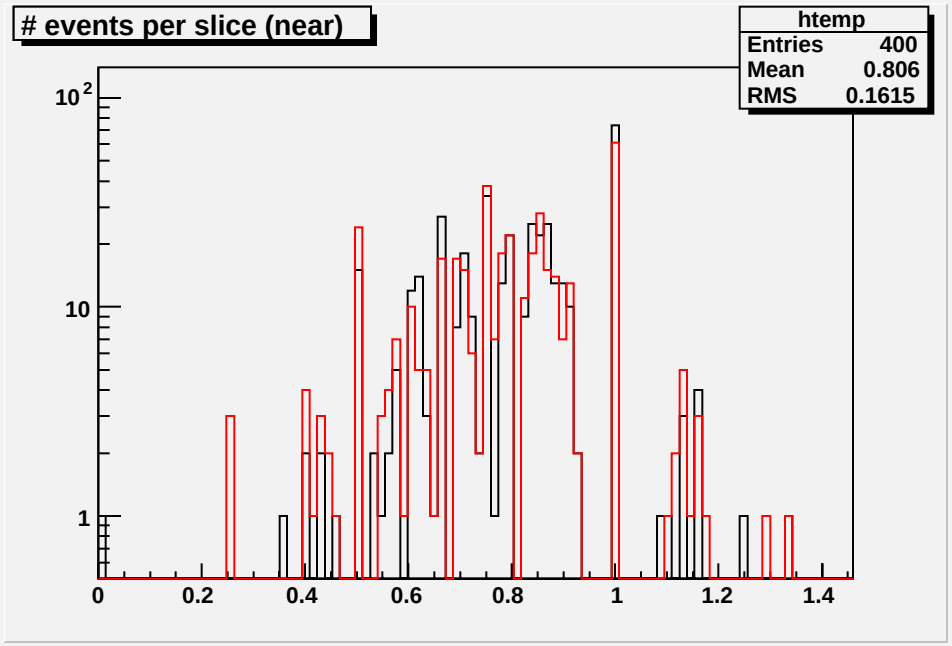
 # Events/Snarl (Near Detector)

 # Entries 400 / 400

Mean 6.620000 / 6.710000

RMS 2.620286 / 0.000000





 # Events/Slice (Far Detector)

 # Entries 1903 / 1904

Mean 0.992030 / 0.997855

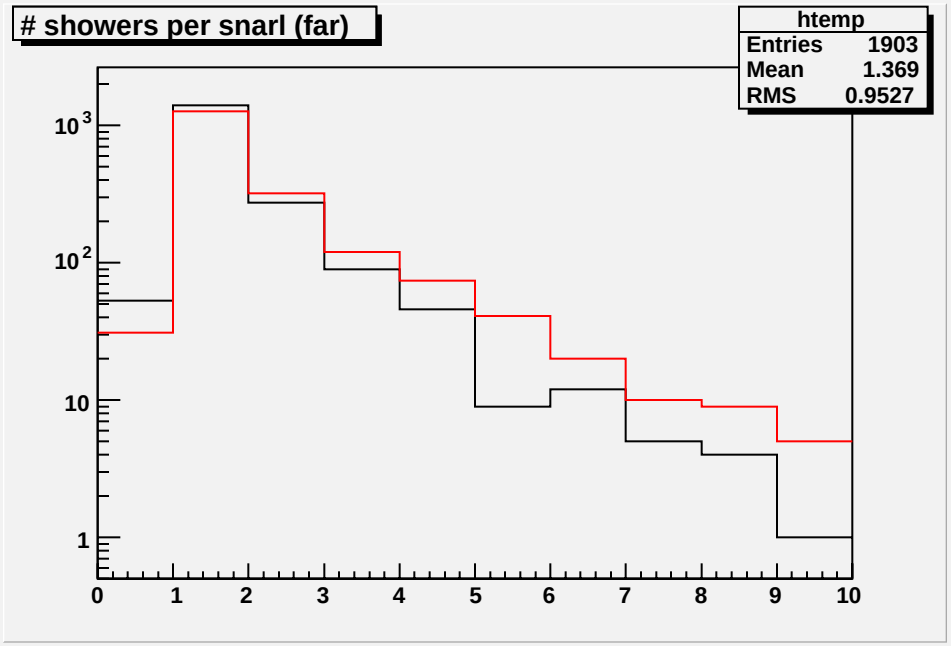
RMS 0.157278 / 0.190364

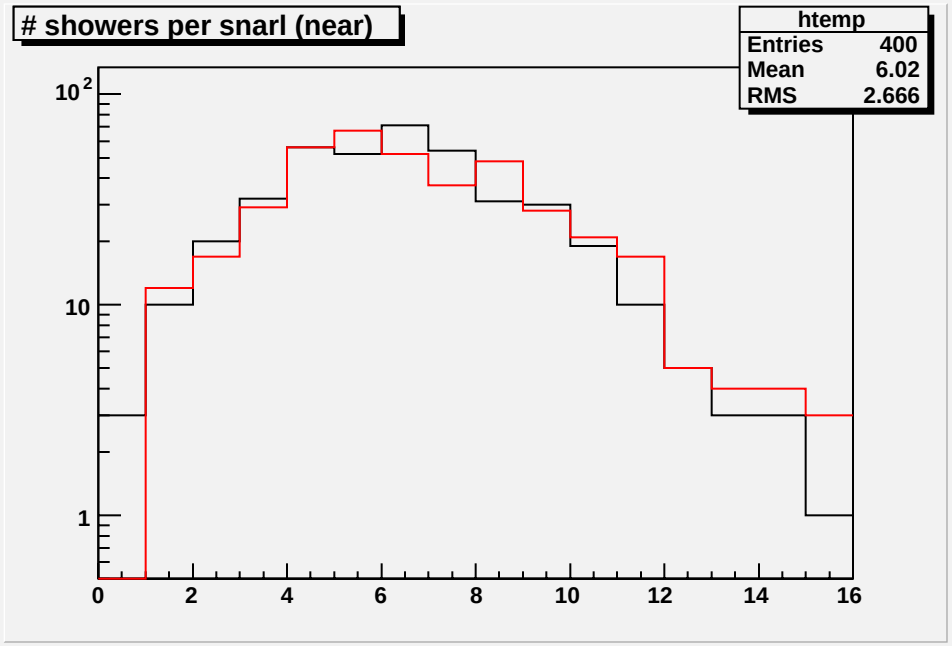
 # Events/Slice (Near Detector)

 # Entries 400 / 400

Mean 0.806046 / 0.790087

RMS 0.161531 / 0.172607





 # Showers/Snarl (Far Detector)

 # Entries 1903 / 1904

Mean 1.369417 / 1.625000

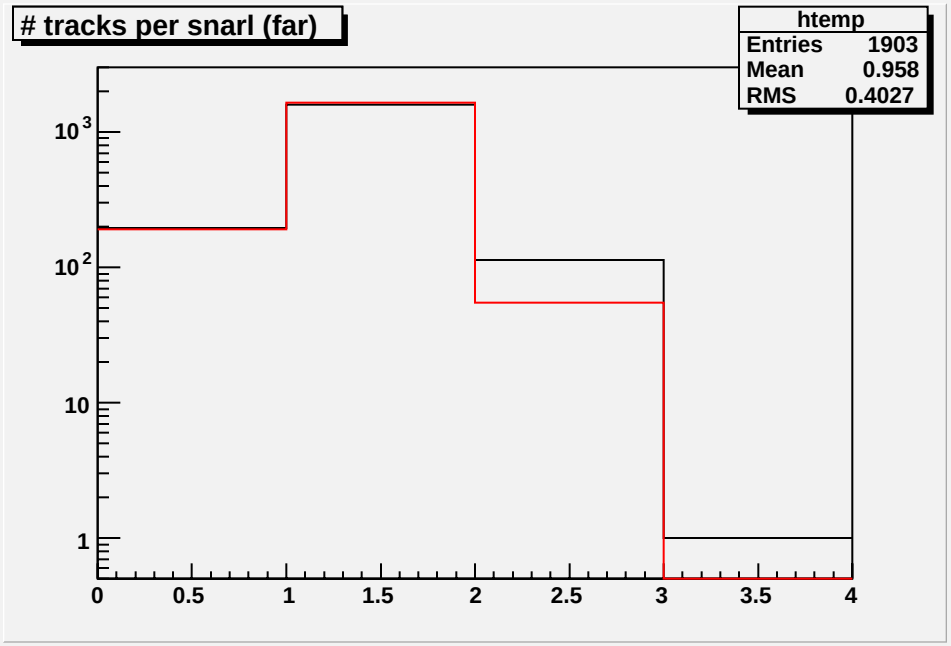
RMS 0.952718 / 1.286699

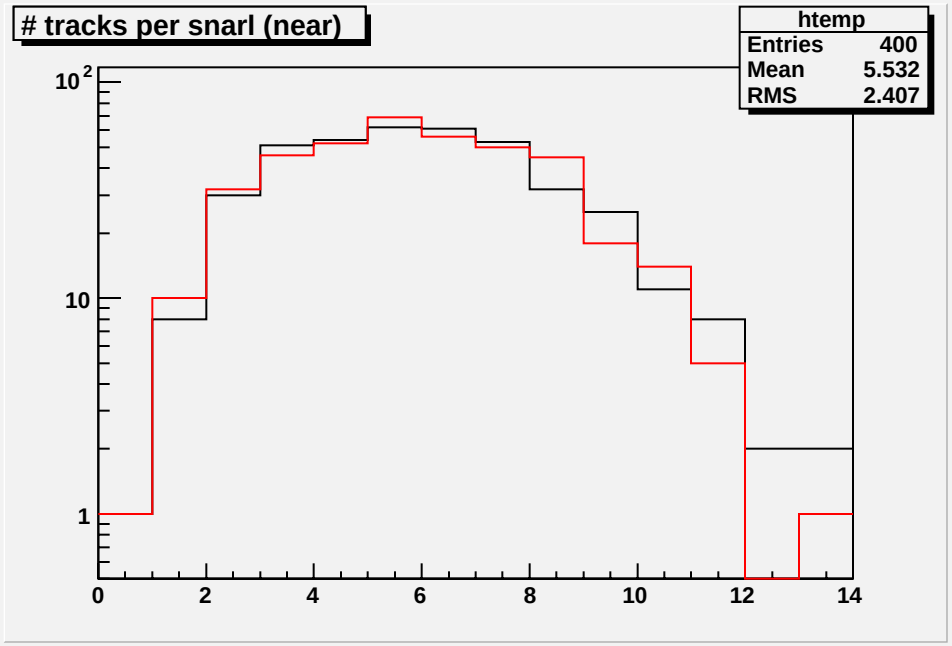
 # Showers/Snarl (Near Detector)

 # Entries 400 / 400

Mean 6.020000 / 6.272500

RMS 2.666383 / 2.833416





 # Tracks/Snarl (Far Detector)

 # Entries 1903 / 1904

Mean 0.957961 / 0.928046

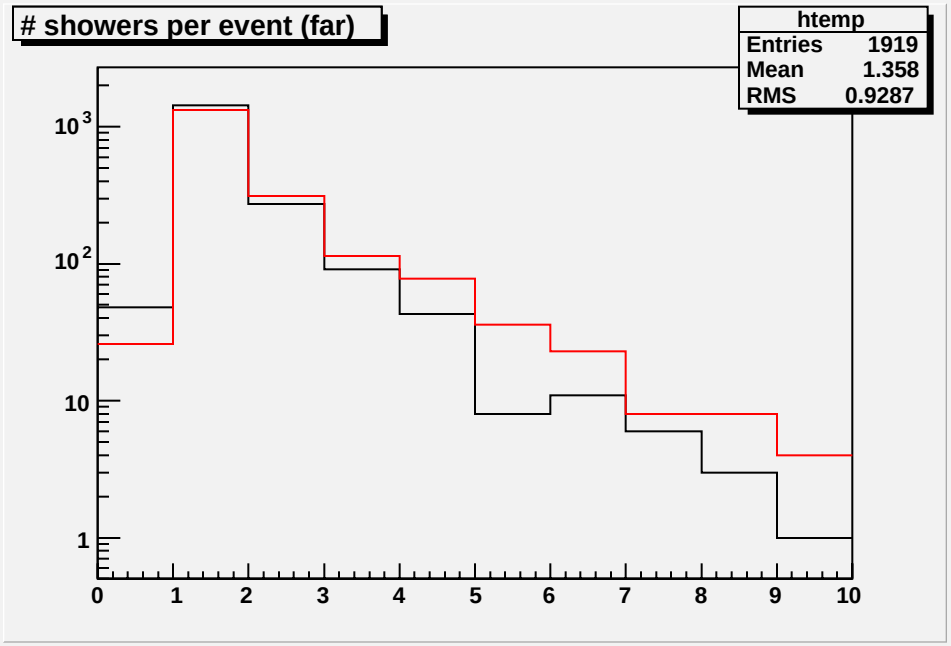
RMS 0.402721 / 0.352916

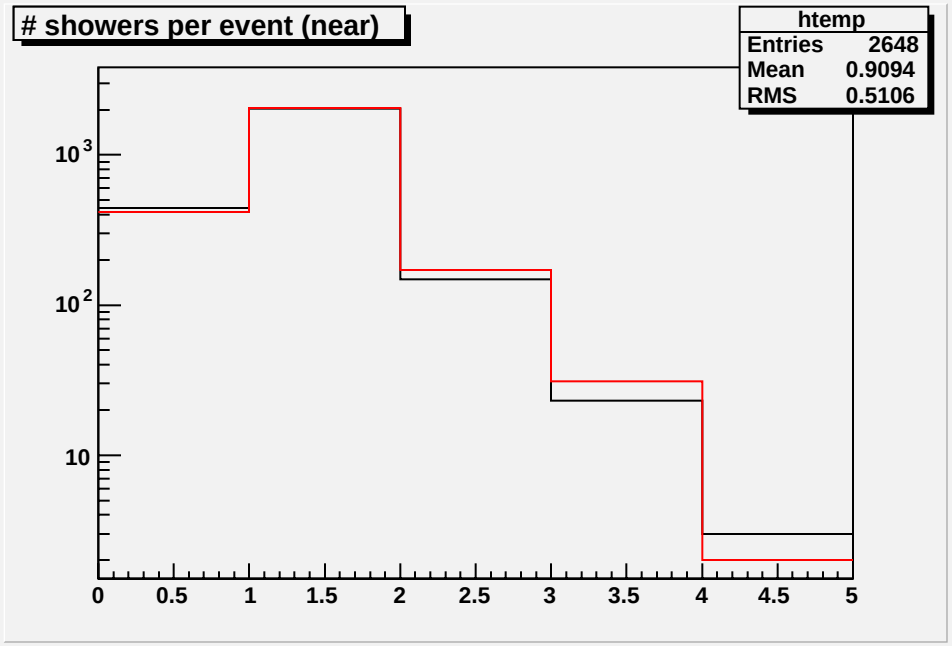
 # Tracks/Snarl (Near Detector)

 # Entries 400 / 400

Mean 5.532500 / 5.487500

RMS 2.407061 / 2.365342





 # Showers/Event (Far Detector)

 # Entries 1919 / 1940

Mean 1.357999 / 1.594845

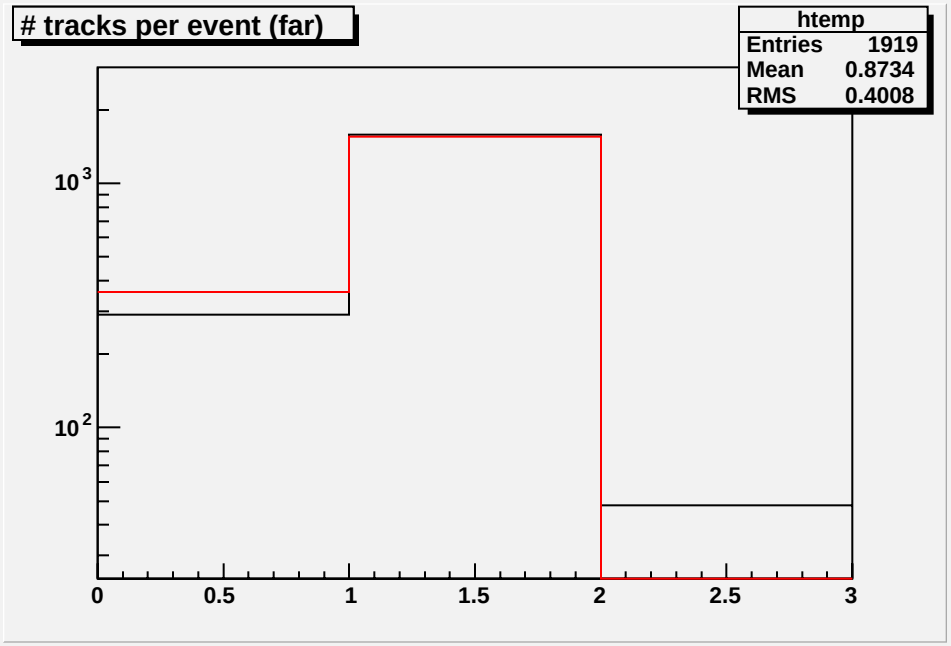
RMS 0.928686 / 1.247172

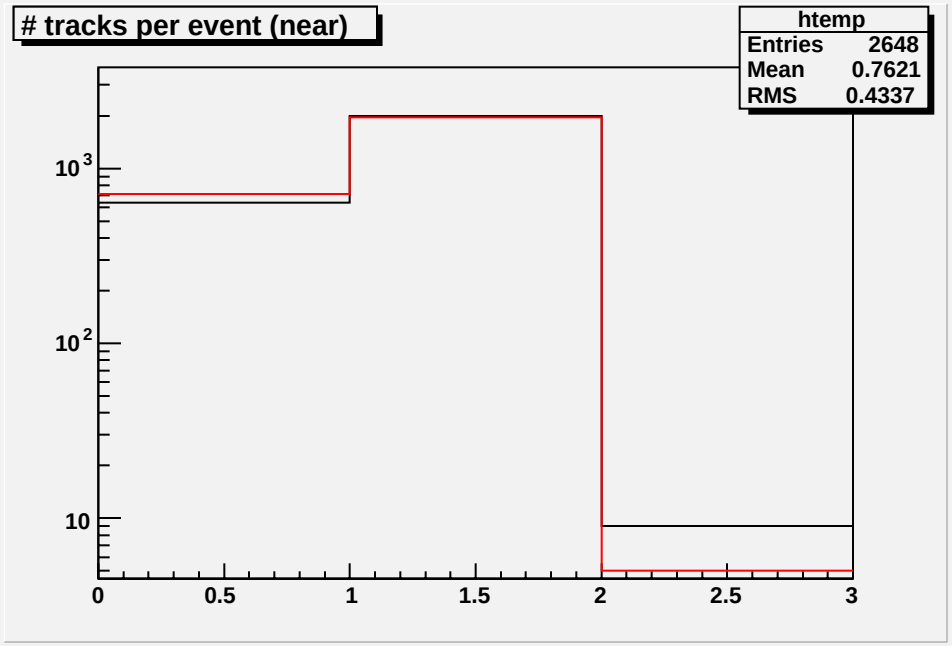
 # Showers/Event (Near Detector)

 # Entries 2648 / 2684

Mean 0.909366 / 0.934799

RMS 0.510556 / 0.523512





 # Tracks/Event (Far Detector)

 # Entries 1919 / 1940

Mean 0.873372 / 0.826289

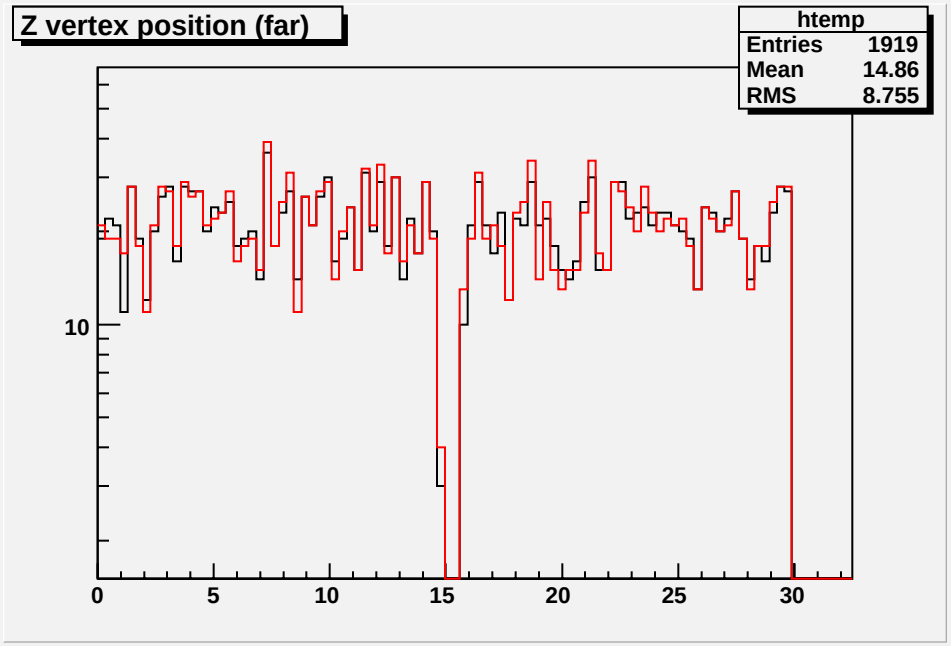
RMS 0.400774 / 0.407696

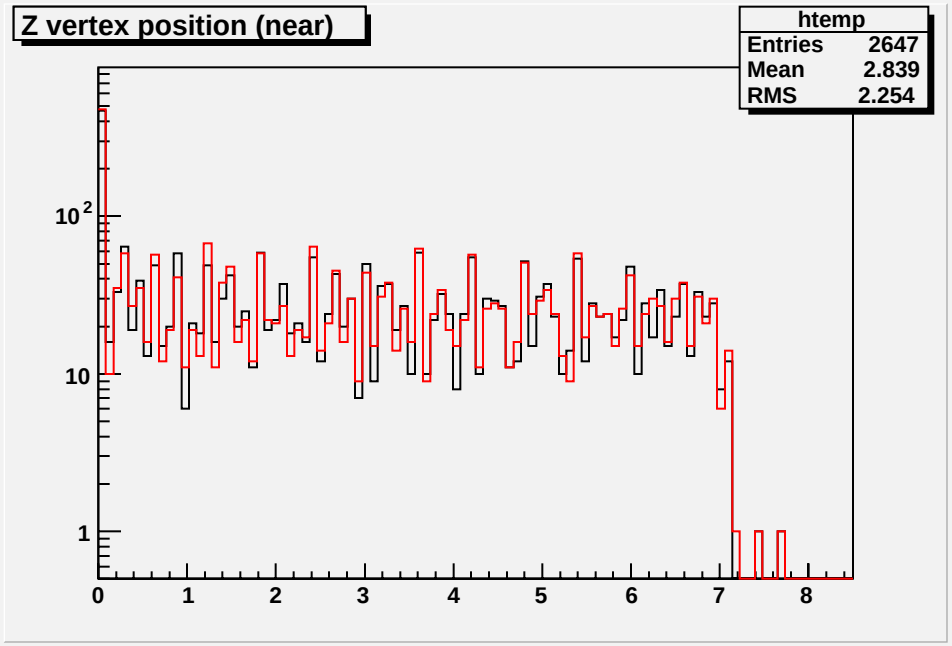
 # Tracks/Event (Near Detector)

 # Entries 2648 / 2684

Mean 0.762085 / 0.735097

RMS 0.433716 / 0.445483





Track Vertex Z (Far Detector)

 # Entries 1919 / 1940

Mean 14.864629 / 14.841434

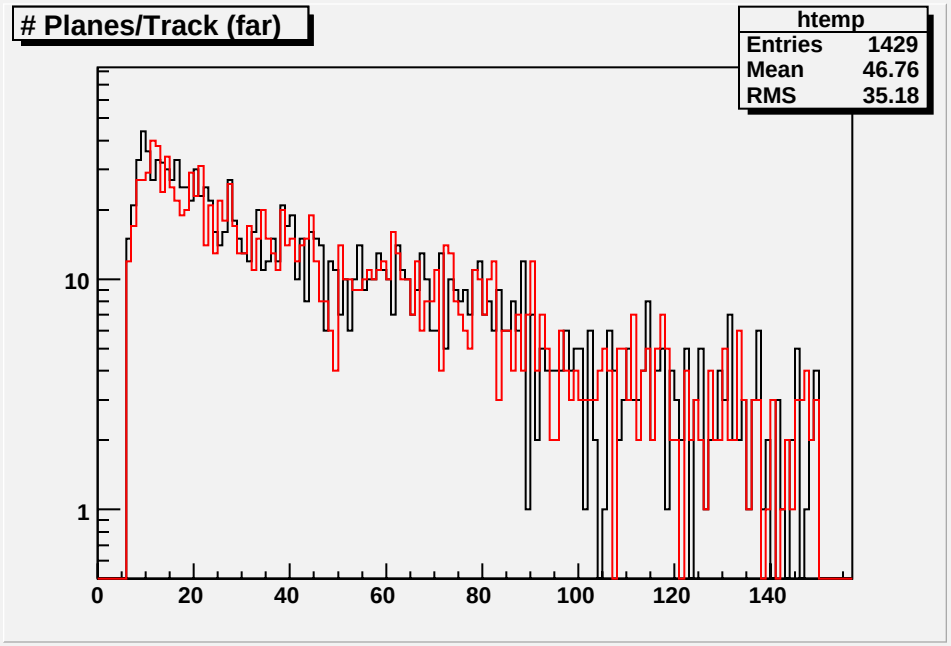
RMS 8.754638 / 8.752956

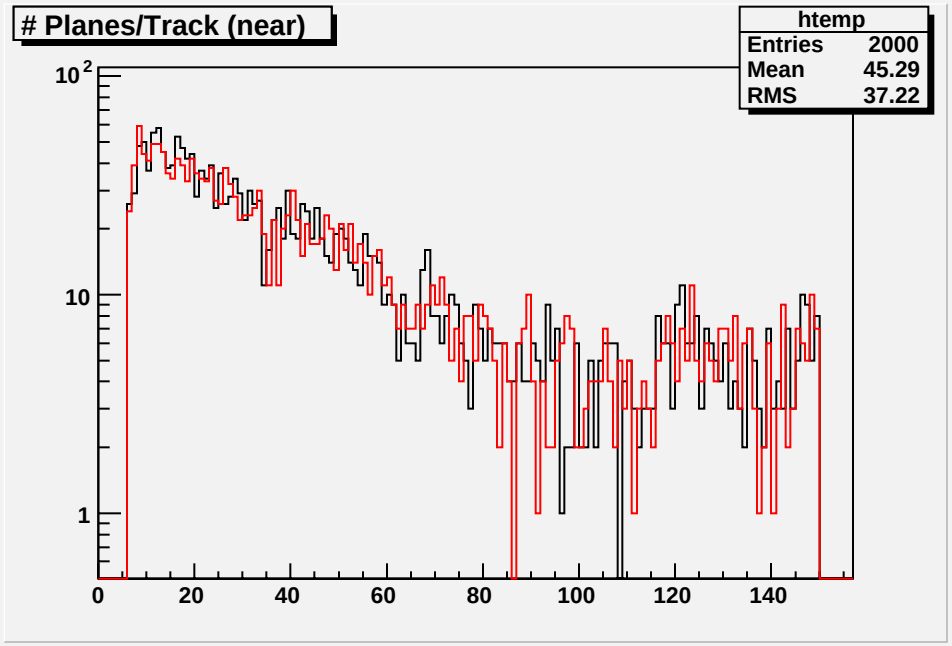
Track Vertex Z (Near Detector)

 # Entries 2647 / 2681

Mean 2.839429 / 2.860202

RMS 2.254391 / 2.266060





 # Planes/Track(Far Detector)

 # Entries 1429 / 1380

Mean 46.757173 / 48.012319

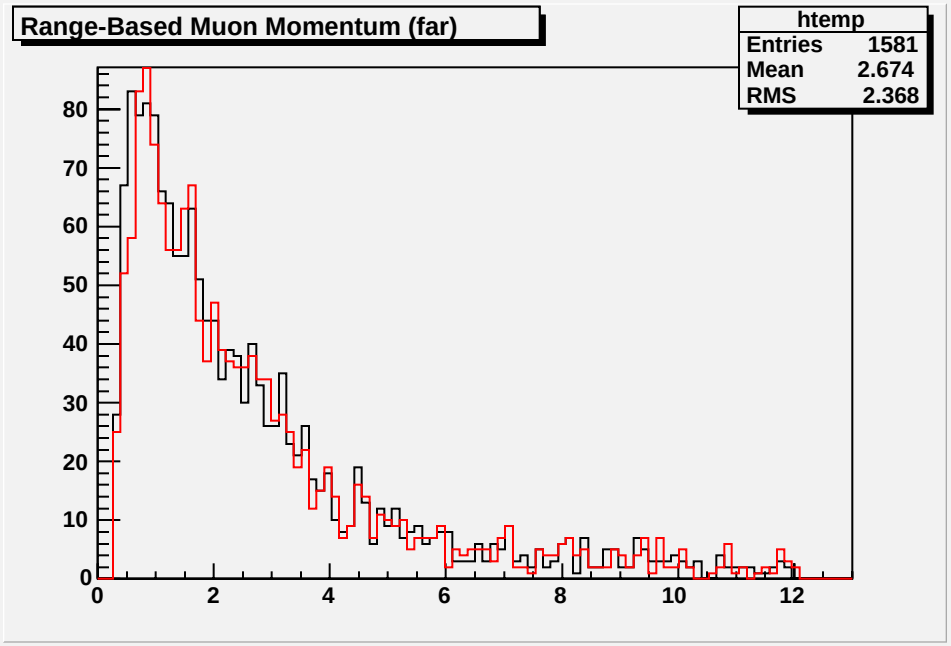
RMS 35.175922 / 35.242543

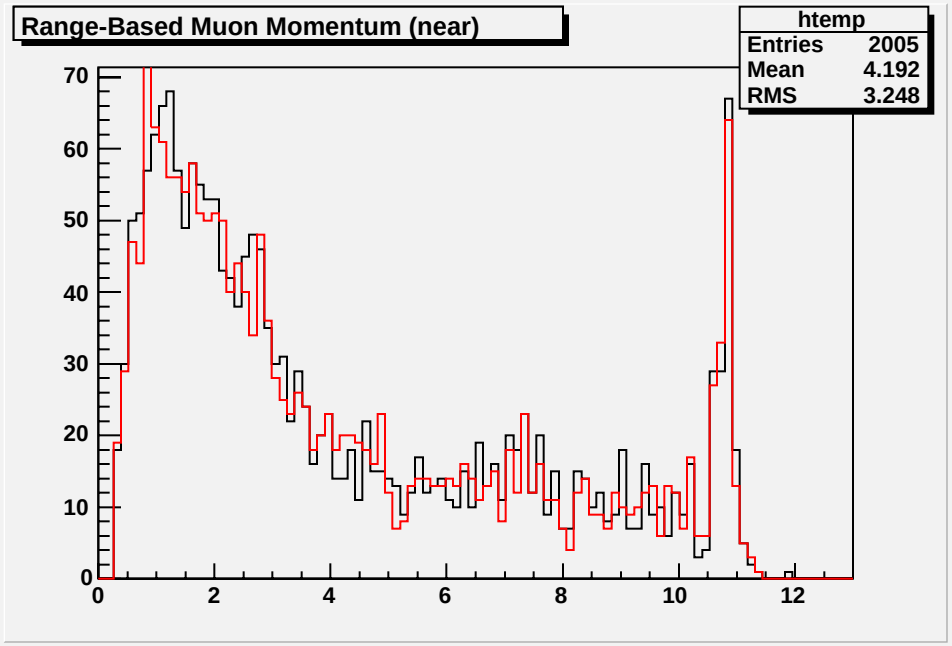
 # Planes/Track (Near Detector)

 # Entries 2000 / 1947

Mean 45.289500 / 45.690806

RMS 37.217613 / 37.368031





Range-based Momentum (Far Detector)

 # Entries 1581 / 1534

Mean 2.674219 / 2.737171

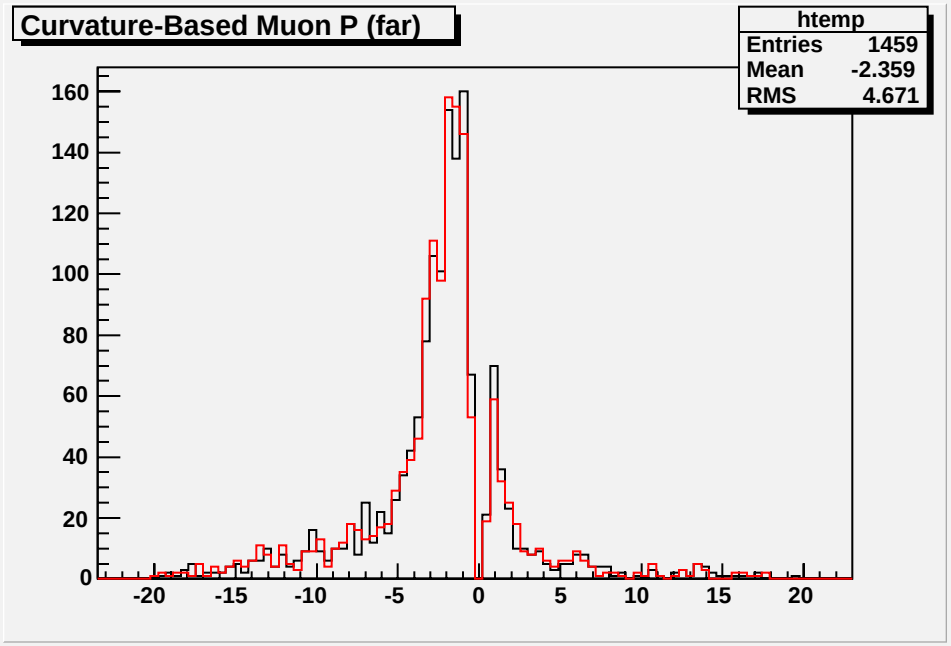
RMS 2.367627 / 2.405152

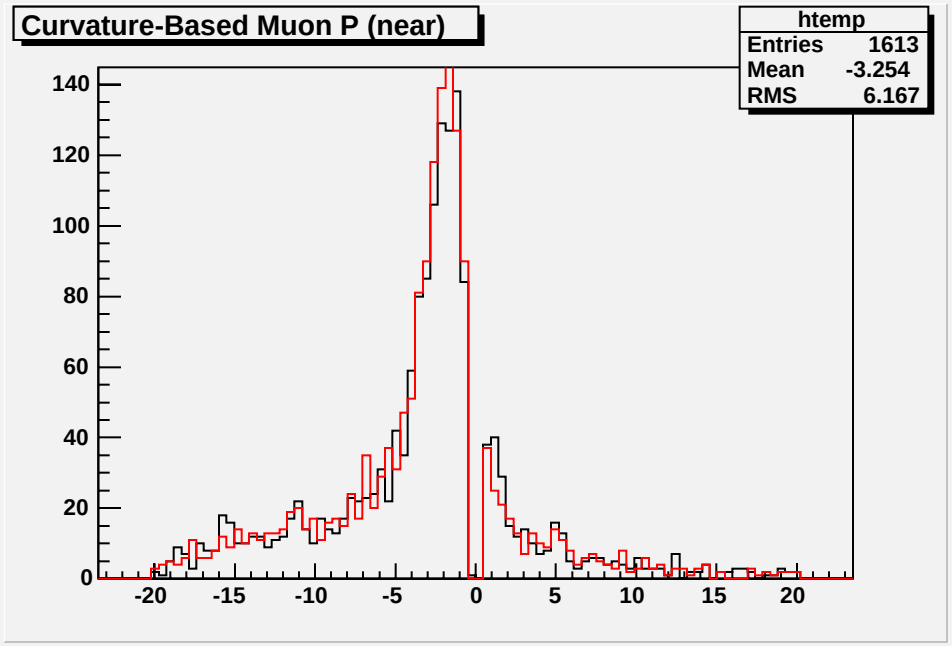
Range-based momentum (Near Detector)

 # Entries 2005 / 1967

Mean 4.192245 / 4.171072

RMS 3.248449 / 3.241685





Curvature-based momentum (Far Detector)

 # Entries 1459 / 1455

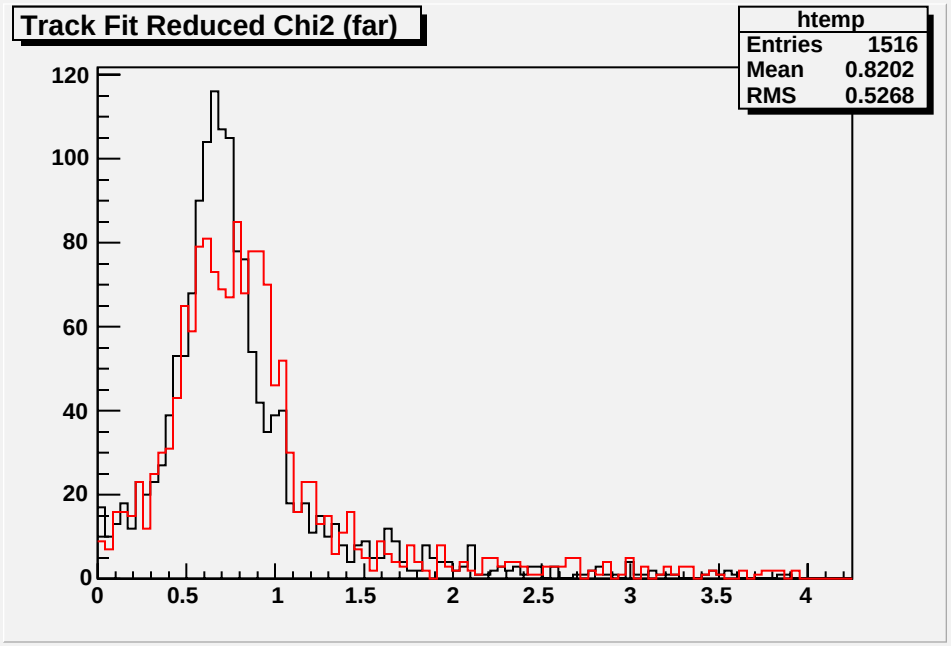
Mean -2.358794 / -2.471640

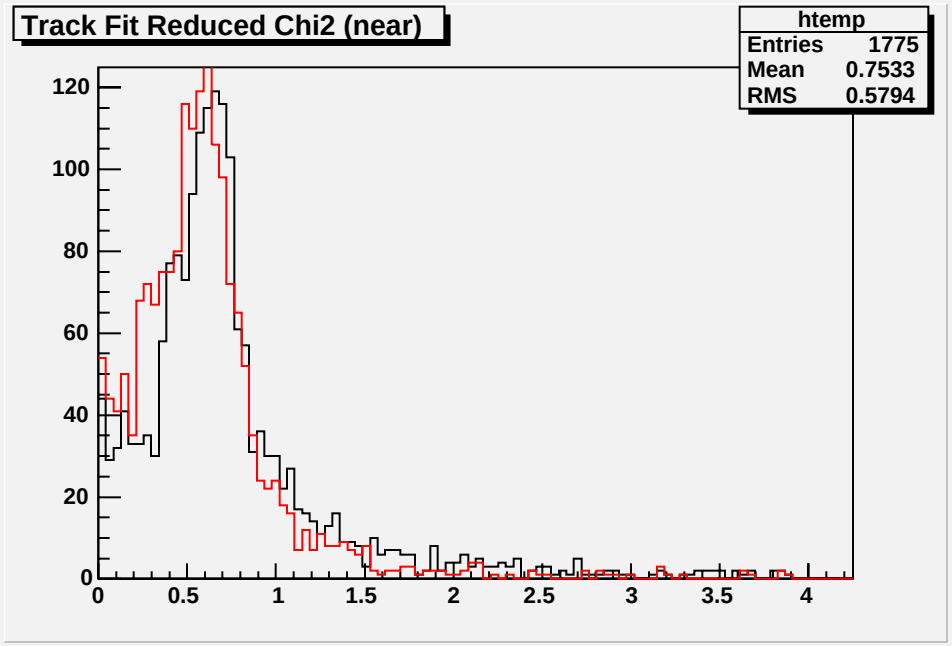
RMS 4.670782 / 4.710584

 # Entries 1613 / 1642

Mean -3.254277 / -3.357697

RMS 6.167348 / 5.993809





Track Fit Reduced Chi2 (Far Detector)

 # Entries 1516 / 1507

Mean 0.820218 / 0.901004

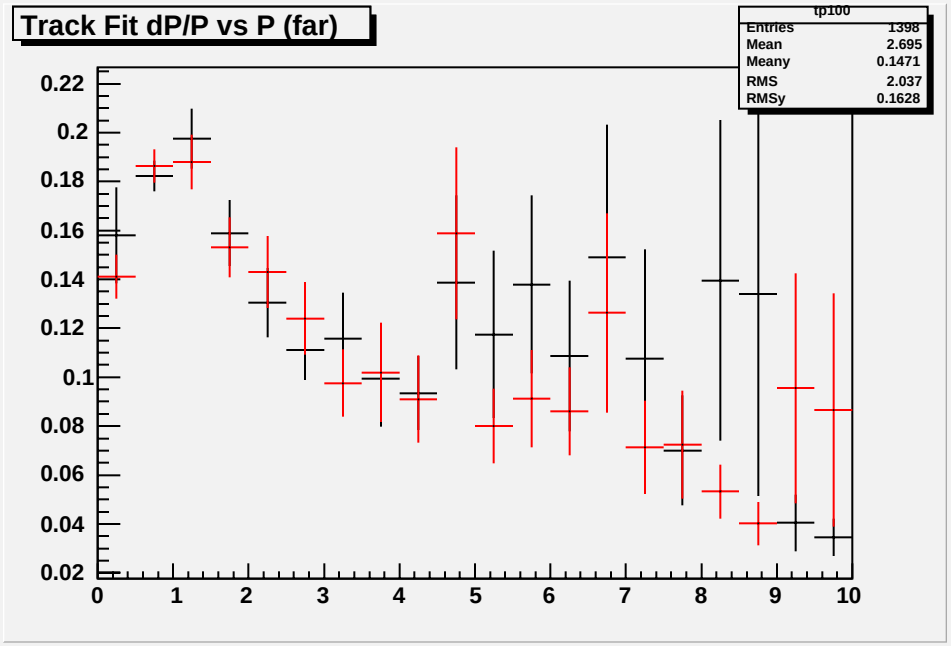
RMS 0.526829 / 0.607594

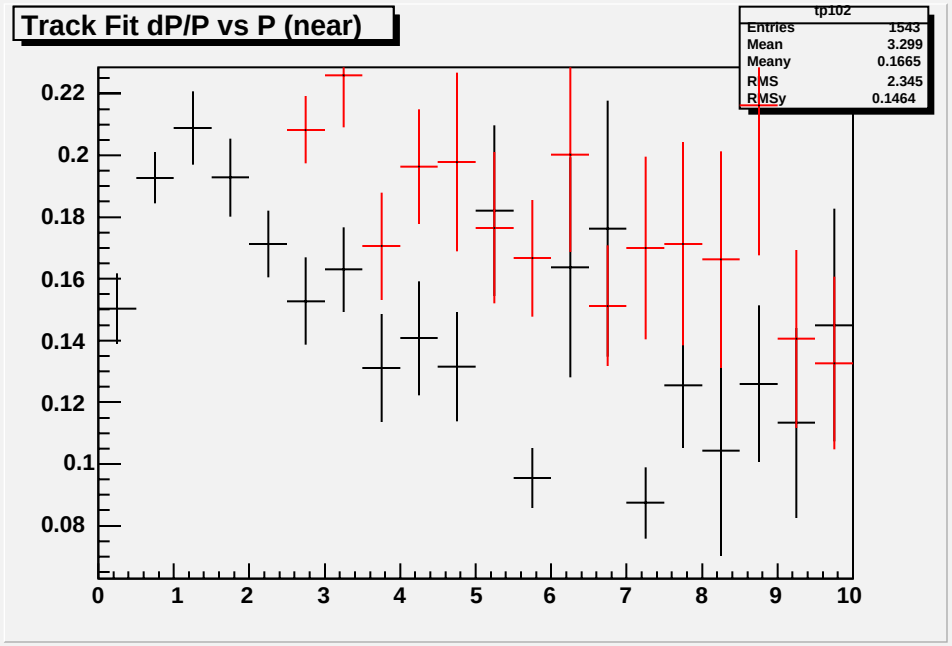
Track Fit Reduced Chi2 (Near Detector)

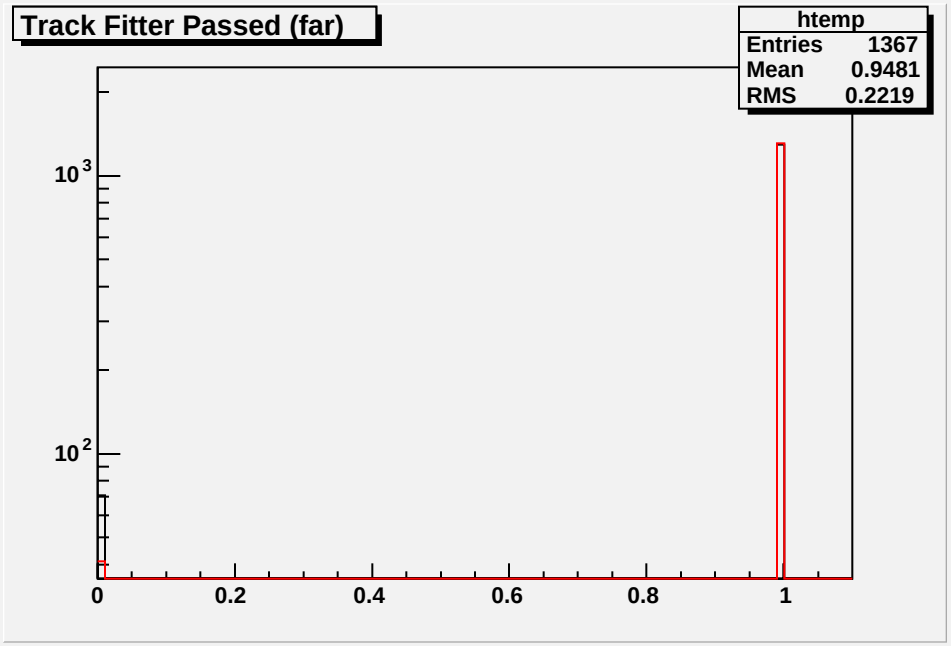
 # Entries 1775 / 1803

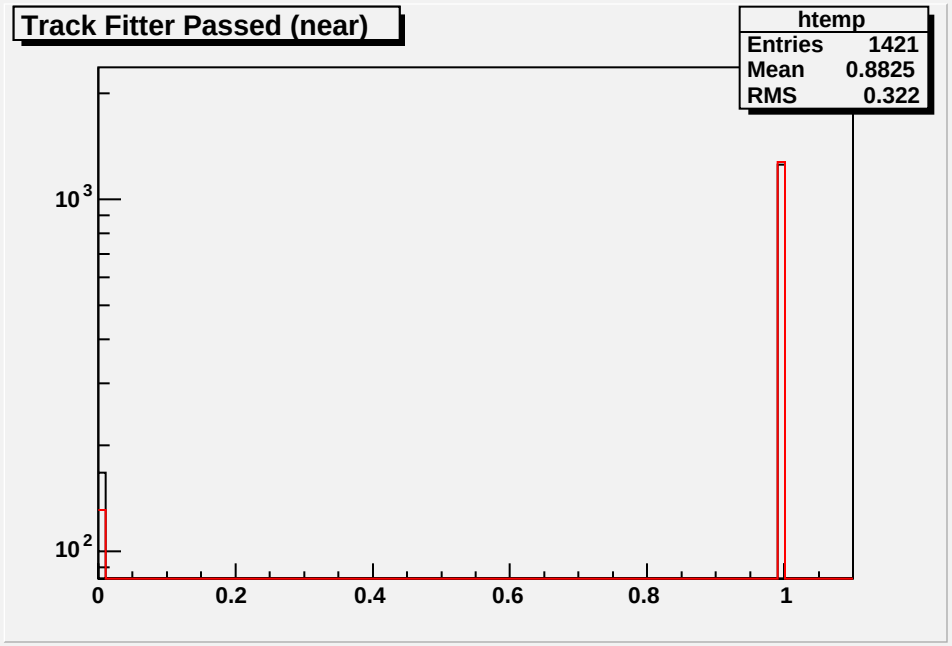
Mean 0.753296 / 0.607497

RMS 0.579382 / 0.447650


Track Fit dP/P vs P (far)
tp100
Entries 1398
Mean 2.695
Meany 0.1471
RMS 2.037
RMSy 0.1628
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0 1 2 3 4 5 6 7 8 9 10


Track Fit dP/P vs P (near)
tp102
Entries 1543
Mean 3.299
Meany 0.1665
RMS 2.345
RMSy 0.1464
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0 1 2 3 4 5 6 7 8 9 10





Track Fitter Passed (Far Detector)

 # Entries 1367 / 1350

Mean 0.948061 / 0.969630

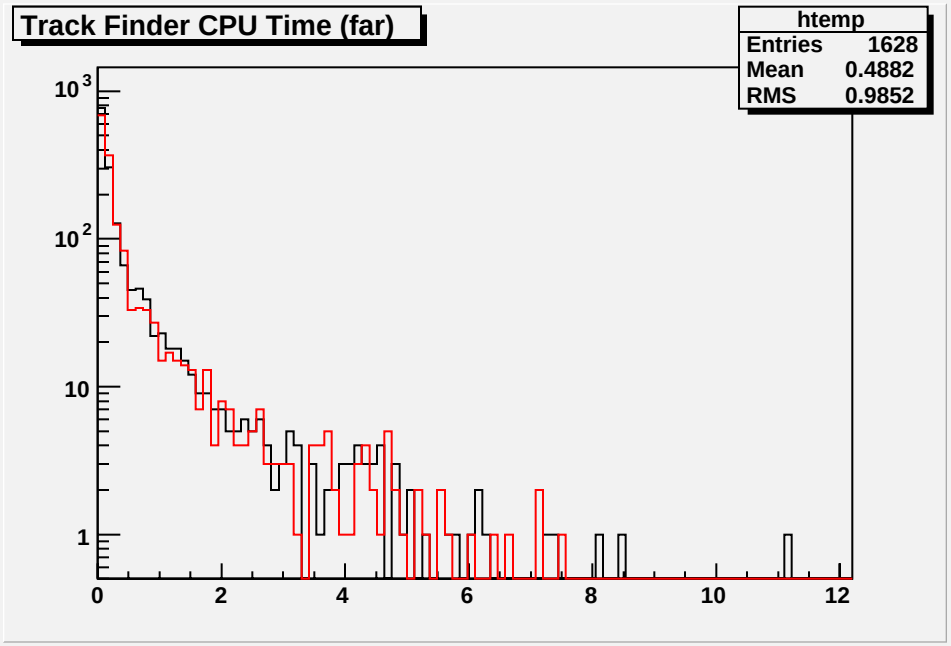
RMS 0.221903 / 0.171604

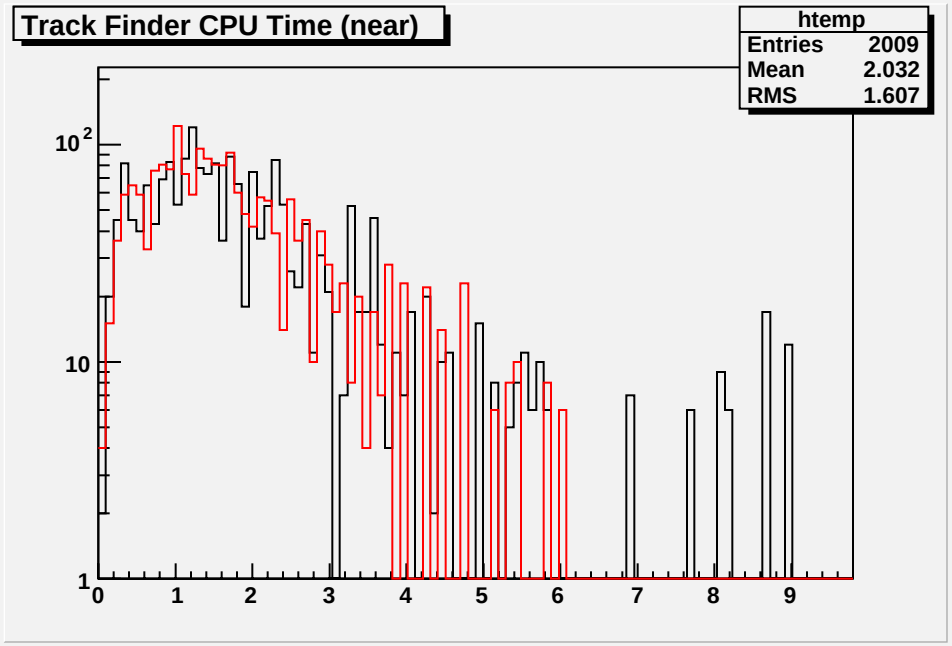
Track Fitter Passed (Near Detector)

 # Entries 1421 / 1408

Mean 0.882477 / 0.906960

RMS 0.322042 / 0.290488





Track Finder CPU Time (Far)

 # Entries 1628 / 1408

Mean 0.488206 / 0.489937

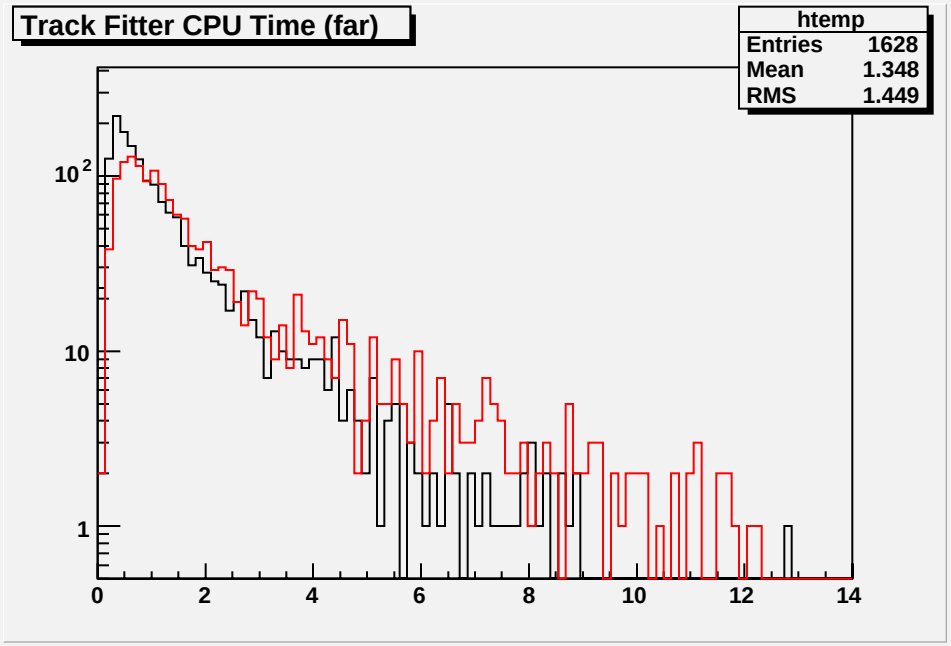
RMS 0.985189 / 1.038520

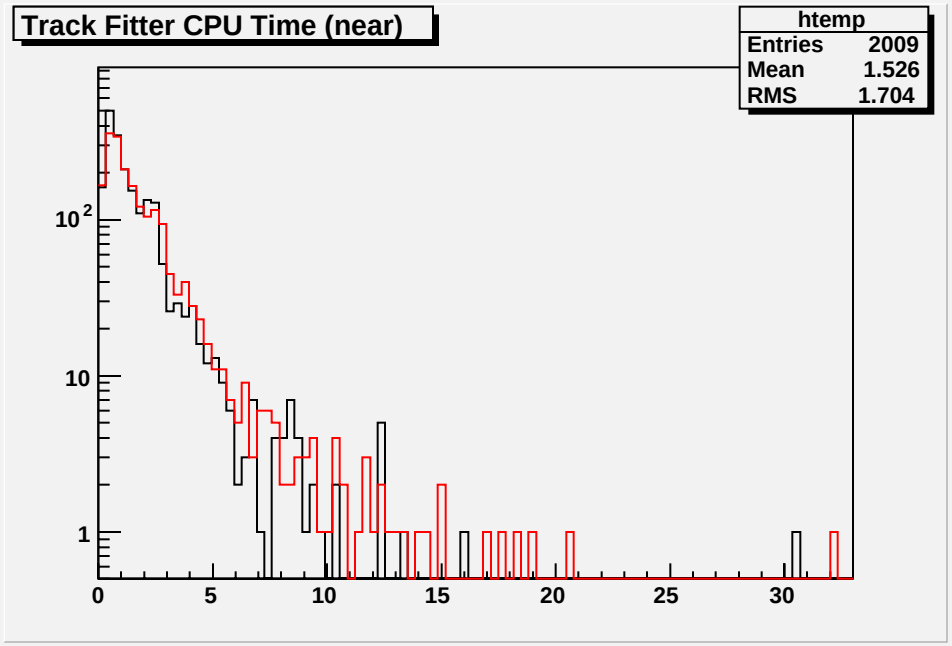
Track Finder CPU Time (Near)

 # Entries 2009 / 1421

Mean 2.031613 / 0.882477

RMS 1.606853 / 0.322042





Track Fitter CPU Time (Far)

 # Entries 1628 / 1577

Mean 1.347611 / 2.327622

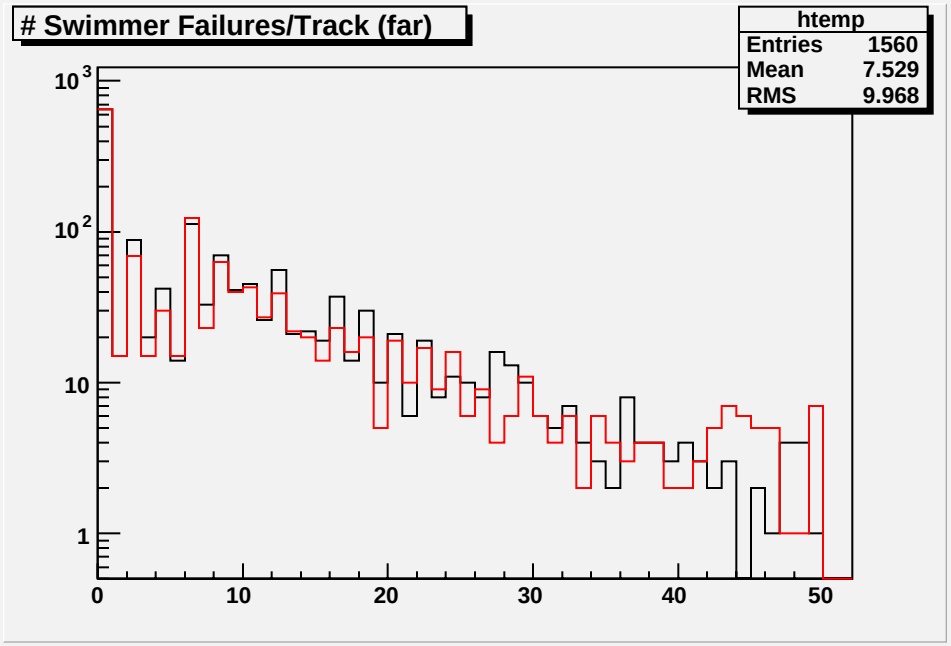
RMS 1.449292 / 3.823890

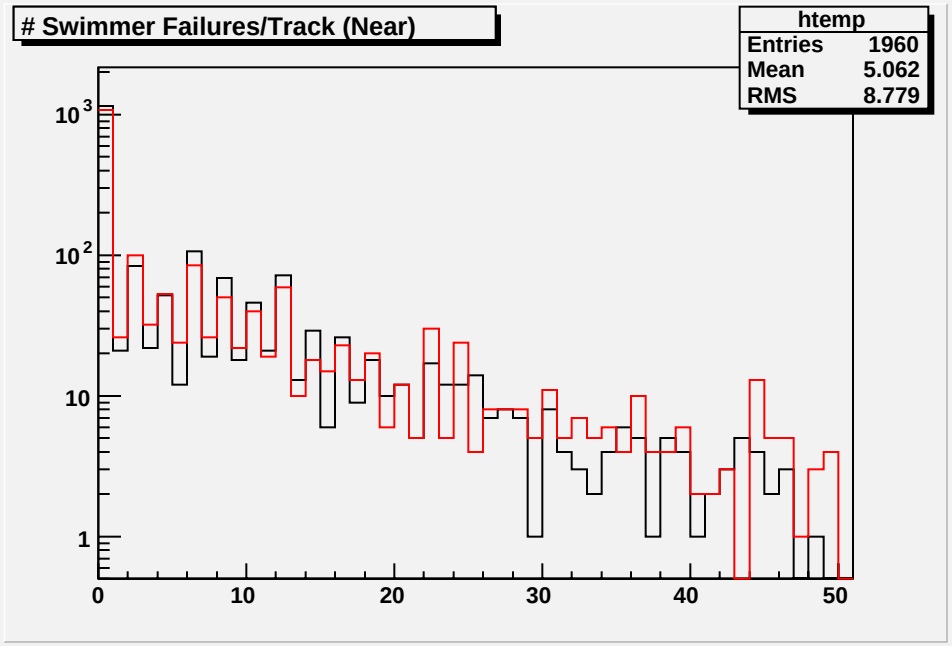
Track Fitter CPU Time (Near)

 # Entries 2009 / 1968

Mean 1.525694 / 1.828801

RMS 1.704235 / 2.265770





 # Swimmer Failures (Far)

 # Entries 1560 / 1459

Mean 7.529487 / 7.552433

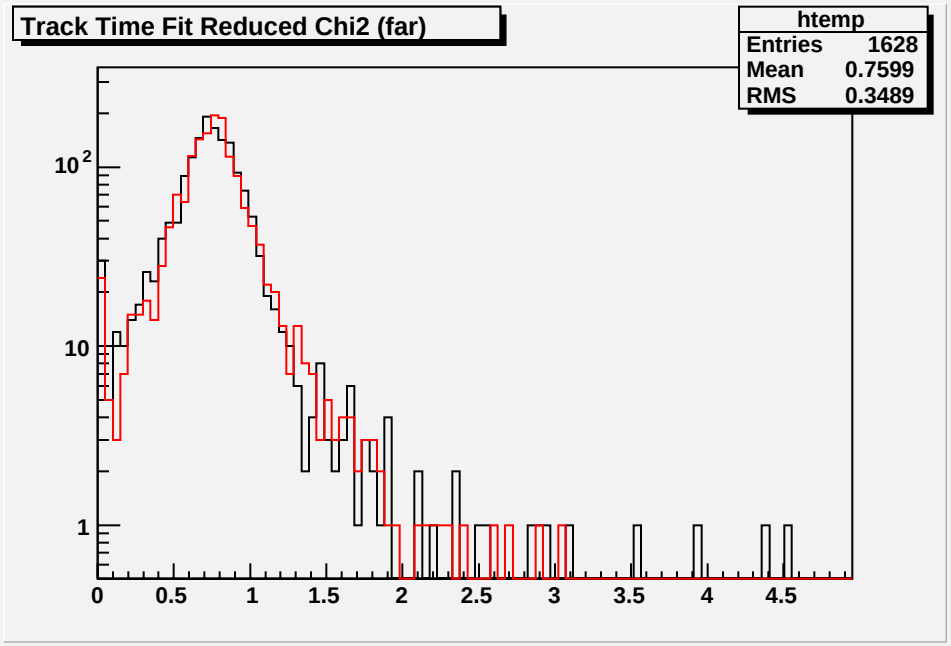
RMS 9.968175 / 10.660399

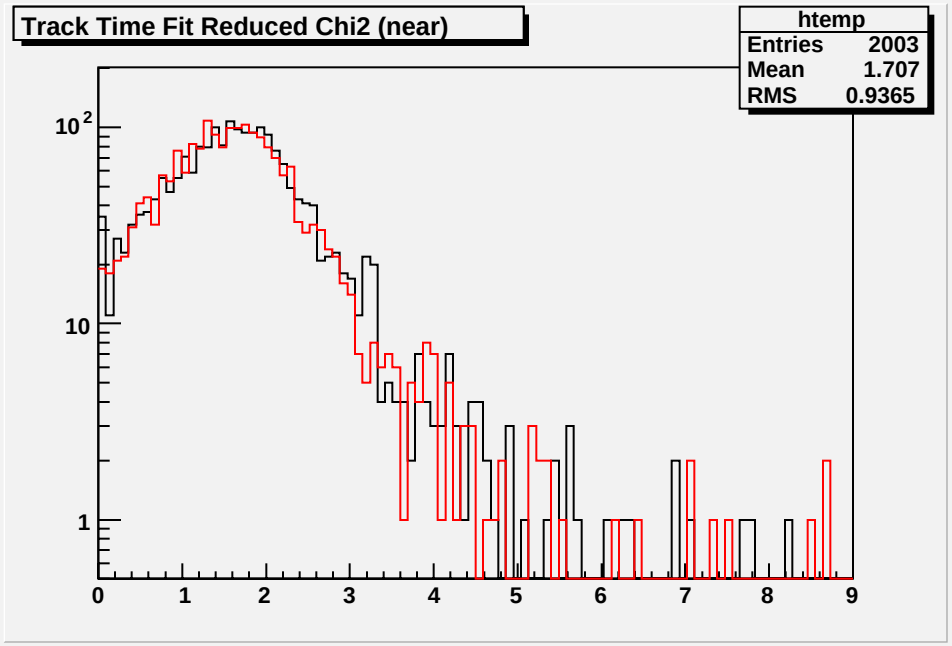
 # Swimmer Failures (Near)

 # Entries 1960 / 1925

Mean 5.061735 / 5.887792

RMS 8.779252 / 10.131083





Time Fit Reduced Chi2 (Far Detector)

 # Entries 1628 / 1581

Mean 0.759866 / 0.769997

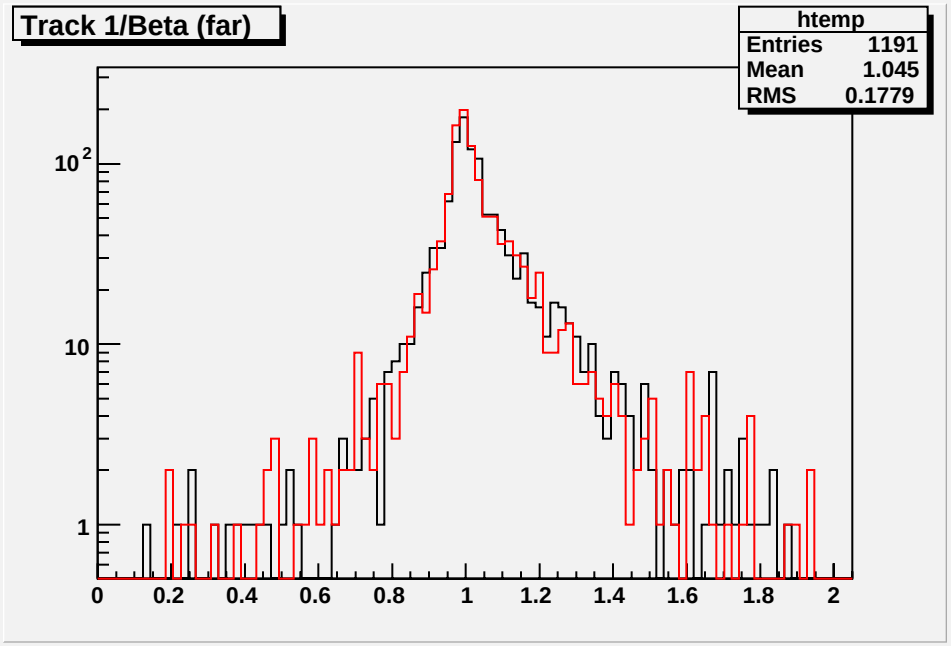
RMS 0.348875 / 0.296711

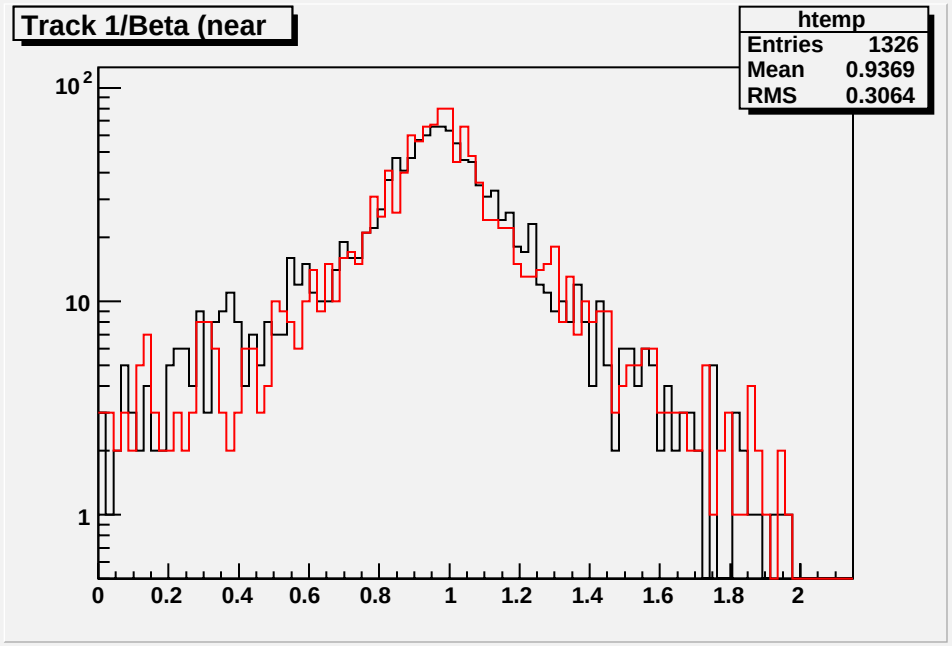
Time Fit Reduced Chi2 (Near Detector)

 # Entries 2003 / 1963

Mean 1.706506 / 1.659352

RMS 0.936474 / 0.910744





1/beta (Far Detector)

 # Entries 1191 / 1201

Mean 1.045469 / 1.037721

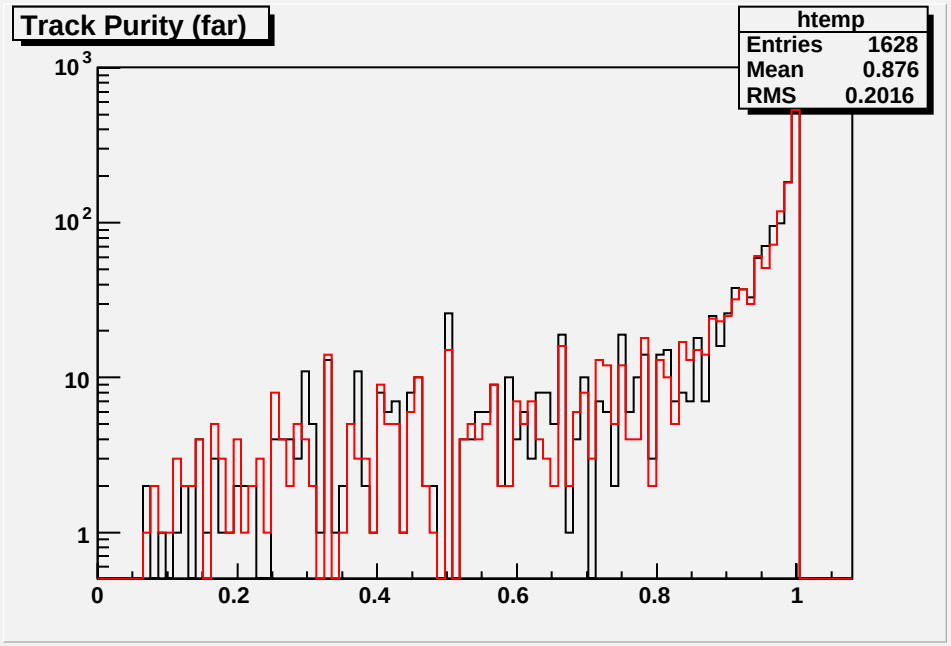
RMS 0.177883 / 0.174578

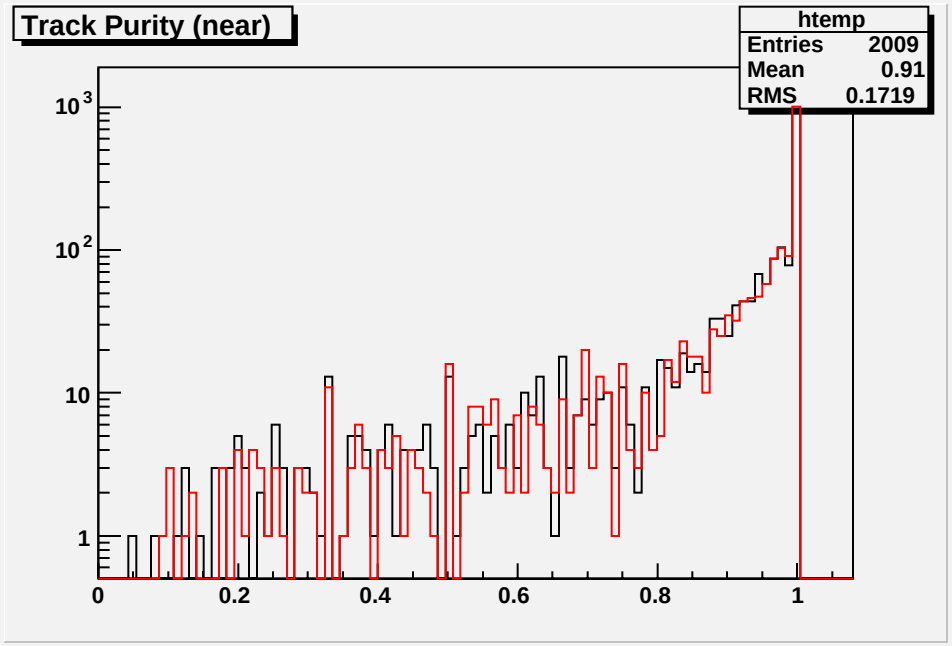
1/beta (Near Detector)

 # Entries 1326 / 1328

Mean 0.936938 / 0.959731

RMS 0.306421 / 0.303192





Track Purity (Far Detector)

 # Entries 1628 / 1581

Mean 0.876028 / 0.879361

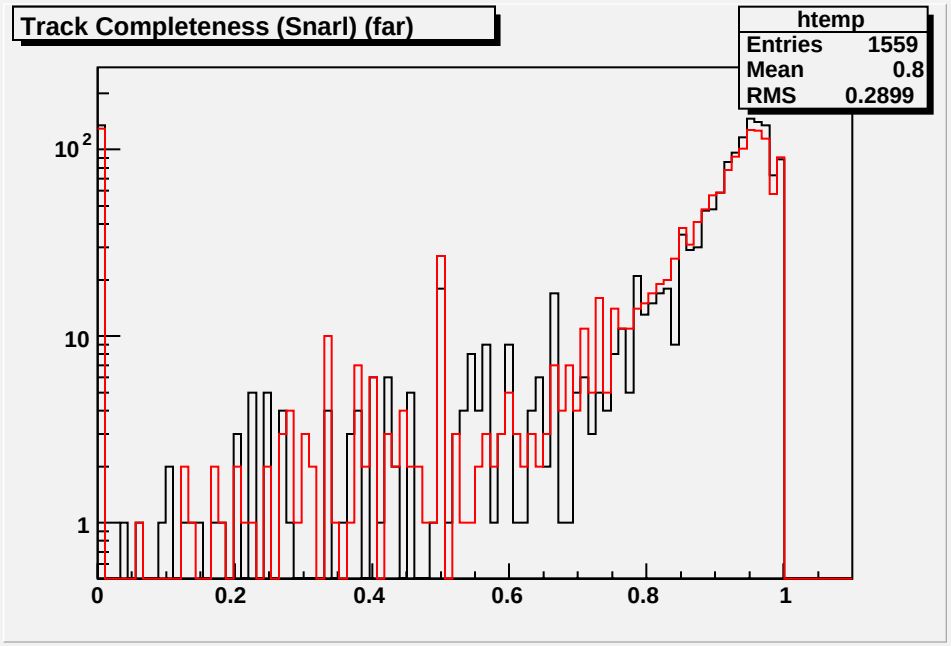
RMS 0.201621 / 0.203553

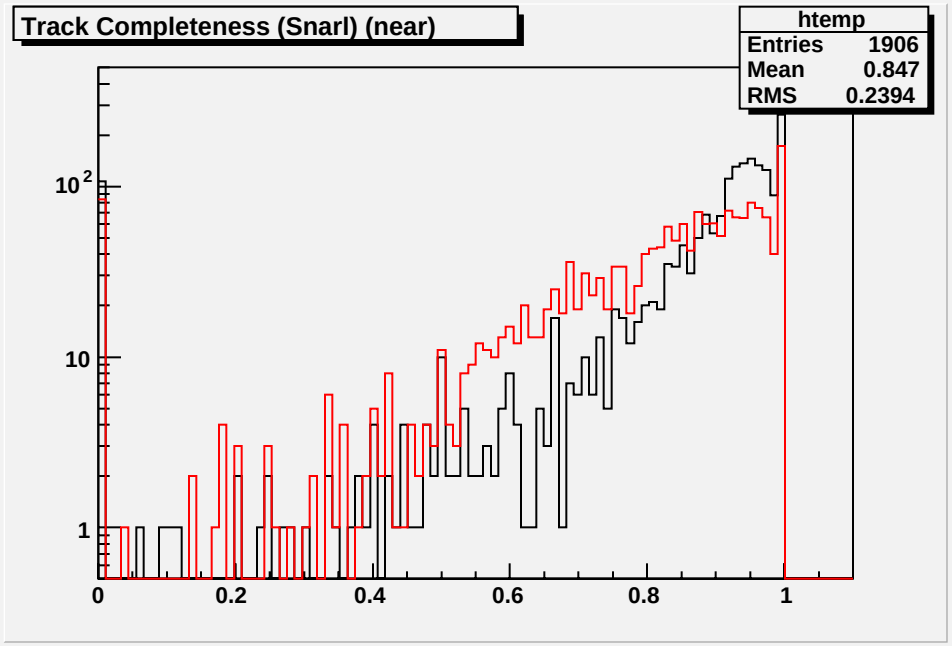
Track Purity (Near Detector)

 # Entries 2009 / 1968

Mean 0.909984 / 0.915847

RMS 0.171903 / 0.164043





Track Completeness (Far Detector)

 # Entries 1559 / 1525

Mean 0.800041 / 0.794456

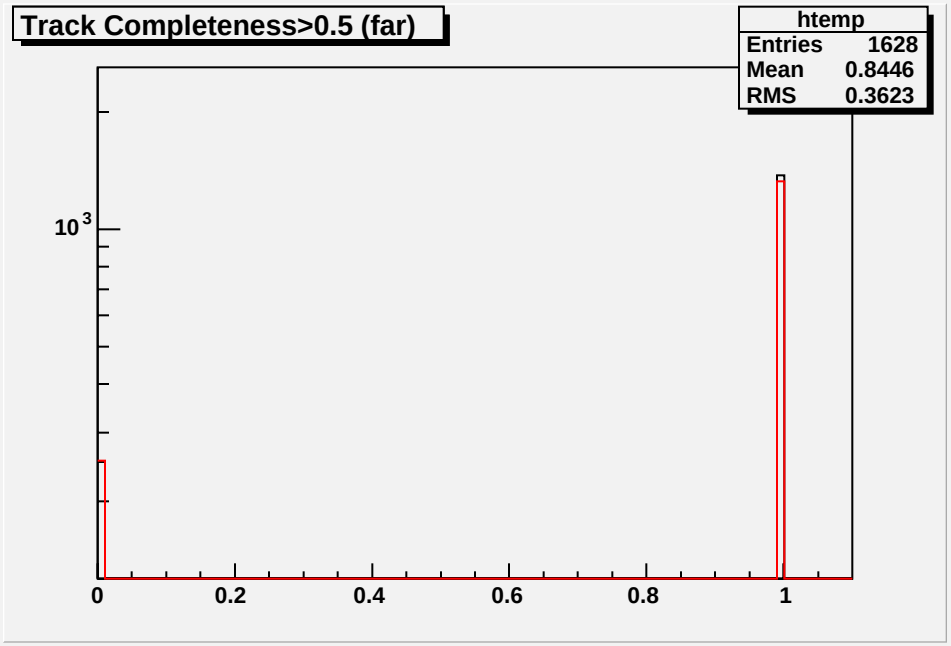
RMS 0.289923 / 0.286346

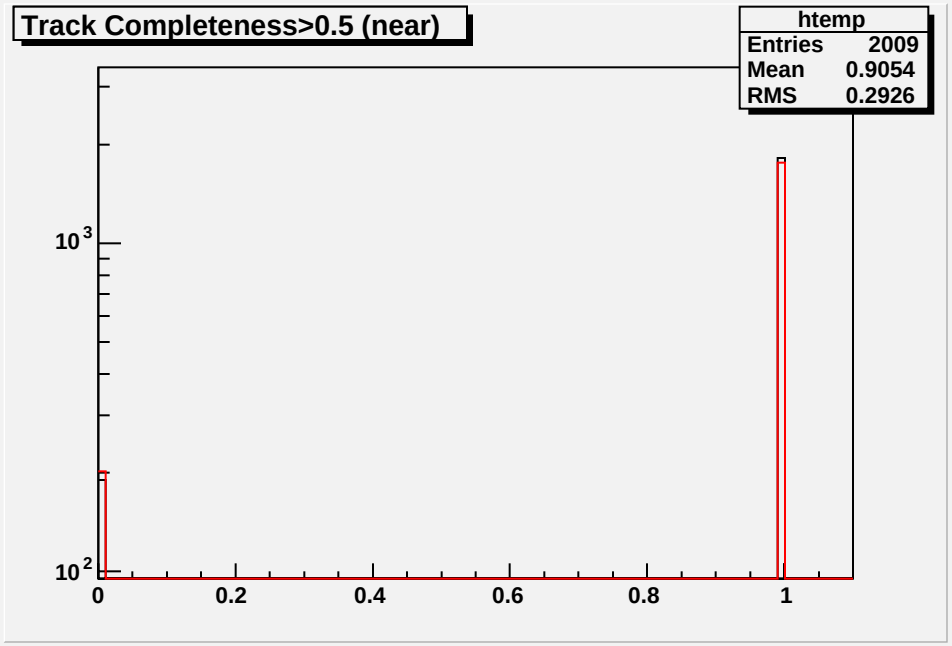
Track Completeness (Near Detector)

 # Entries 1906 / 1846

Mean 0.846988 / 0.790364

RMS 0.239408 / 0.229005





Track Completeness>0.5

 # Entries 1628 / 1581

Mean 0.844595 / 0.838710

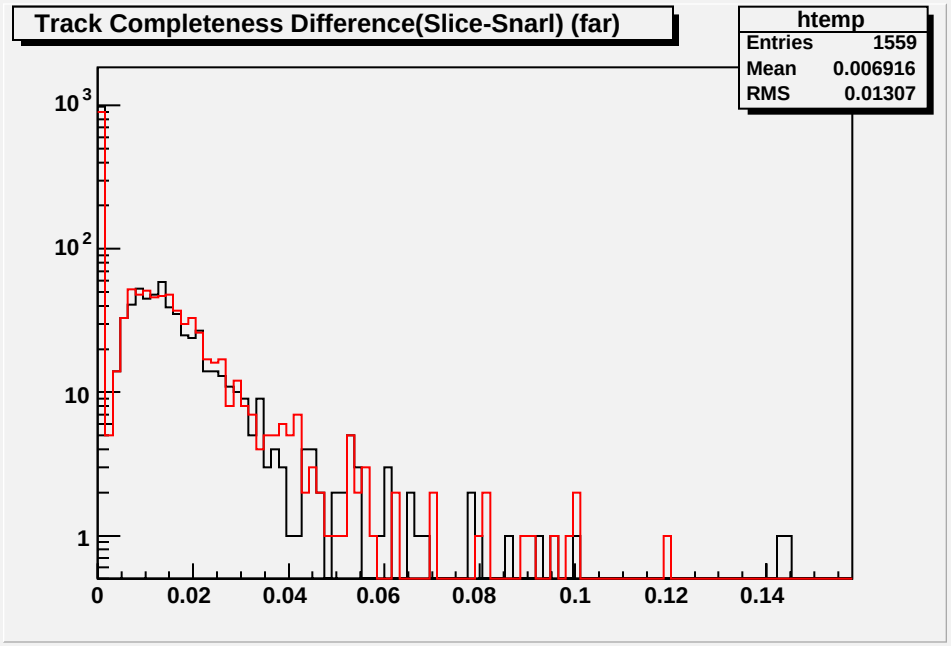
RMS 0.362291 / 0.367799

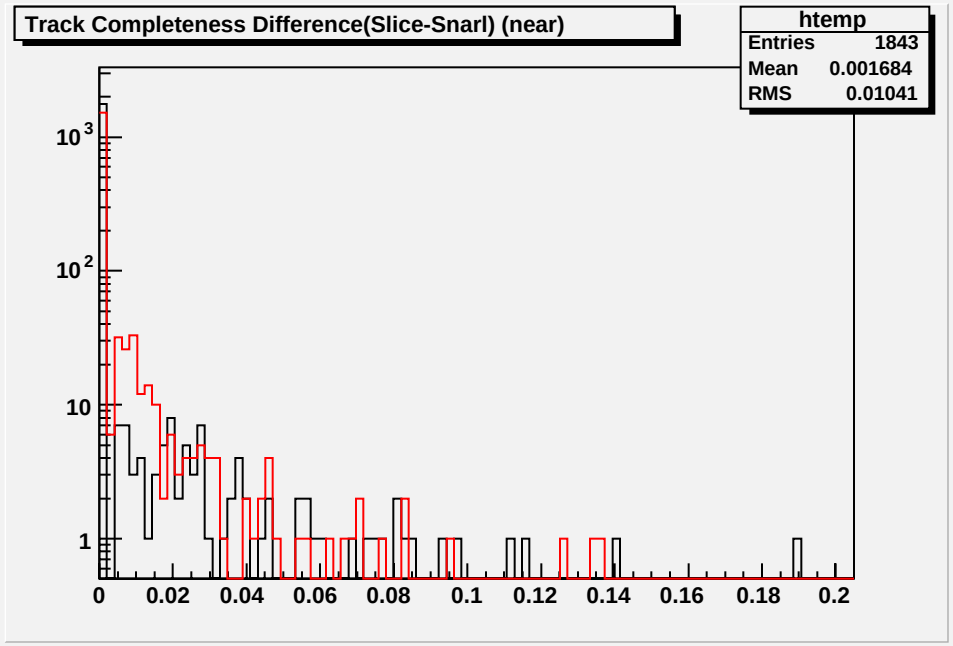
Track Completeness>0.5 (Near Detector)

 # Entries 2009 / 1968

Mean 0.905426 / 0.897358

RMS 0.292626 / 0.303491





Track Compl. (Slice-Snarl) (Far Detector)

 # Entries 1559 / 1525

Mean 0.006916 / 0.007592

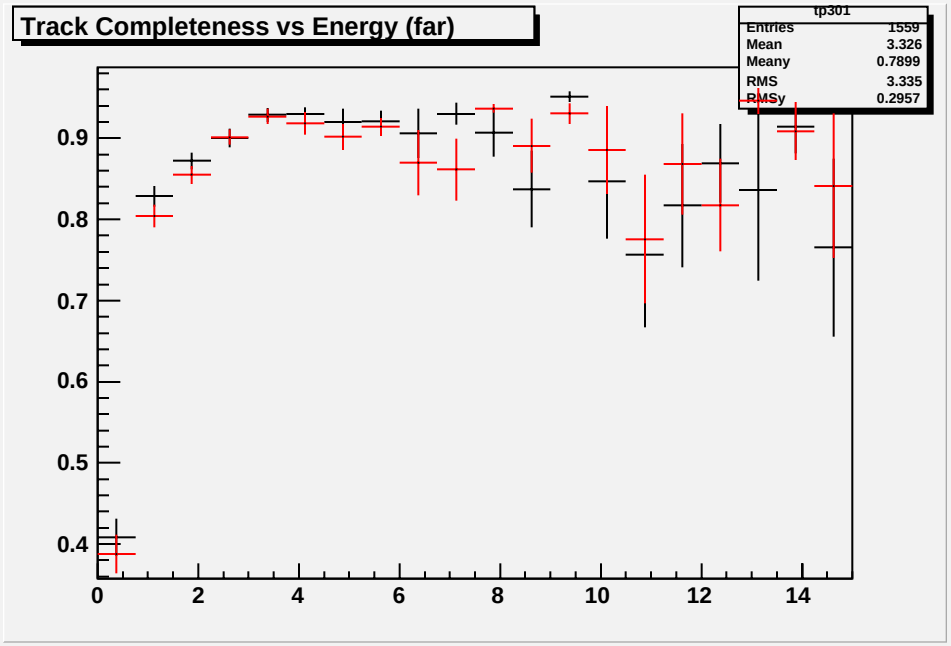
RMS 0.013070 / 0.013161

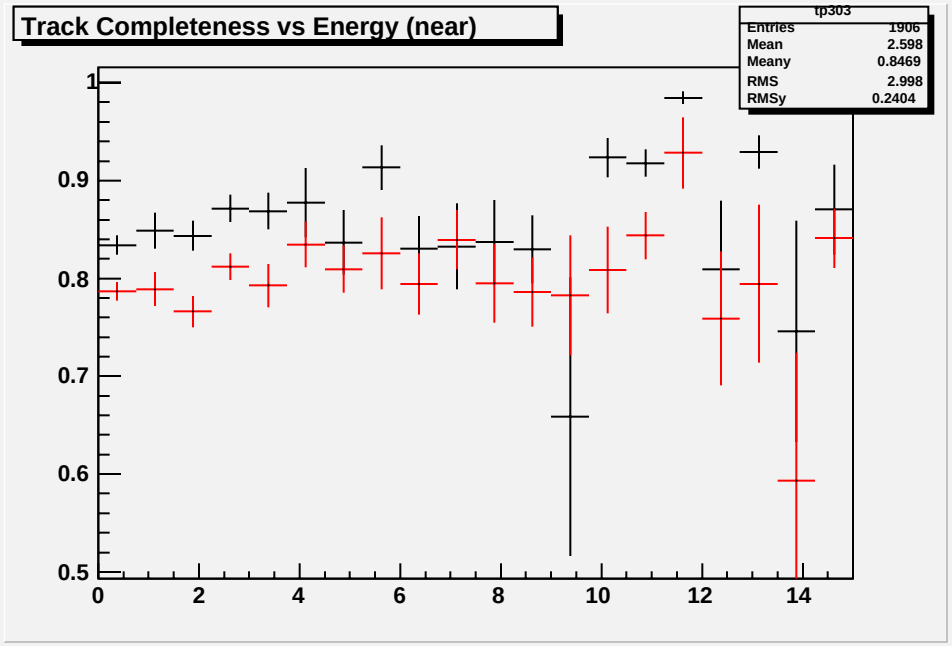
Track Compl Diff(Slice-Snarl) (Near Detector)

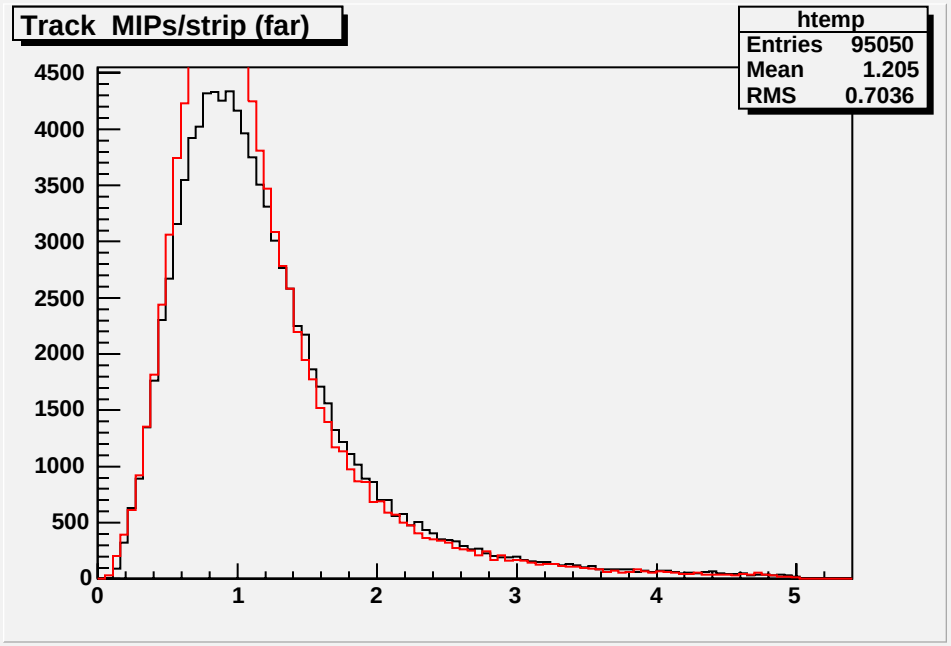
 # Entries 1843 / 1846

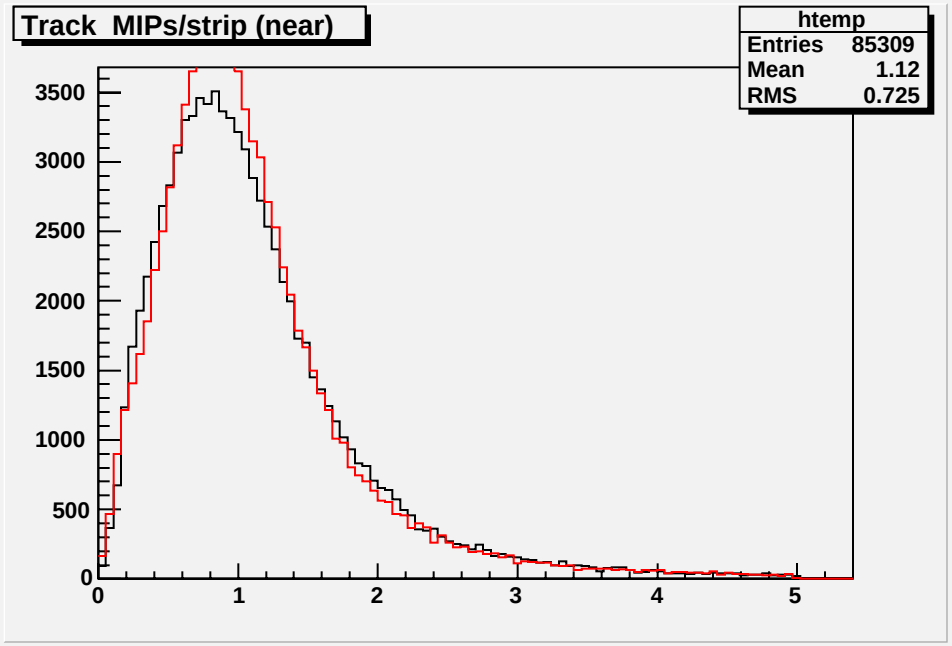
Mean 0.001684 / 0.001704

RMS 0.010410 / 0.009311


Track Completeness vs Energy (far)
tp301
Entries 1559
Mean 3.326
Meany 0.7899
RMS 3.335
RMSy 0.2957
0.9
0.8
0.7
0.6
0.5
0.4
0
2
4
6
8
10
12
14


Track Completeness vs Energy (near)
tp303
Entries 1906
Mean 2.598
Meany 0.8469
RMS 2.998
RMSy 0.2404
1
0.9
0.8
0.7
0.6
0.5
0
2
4
6
8
10
12
14





Track MIPS/strip (Far Detector)

 # Entries 95050 / 101502

Mean 1.205103 / 1.147045

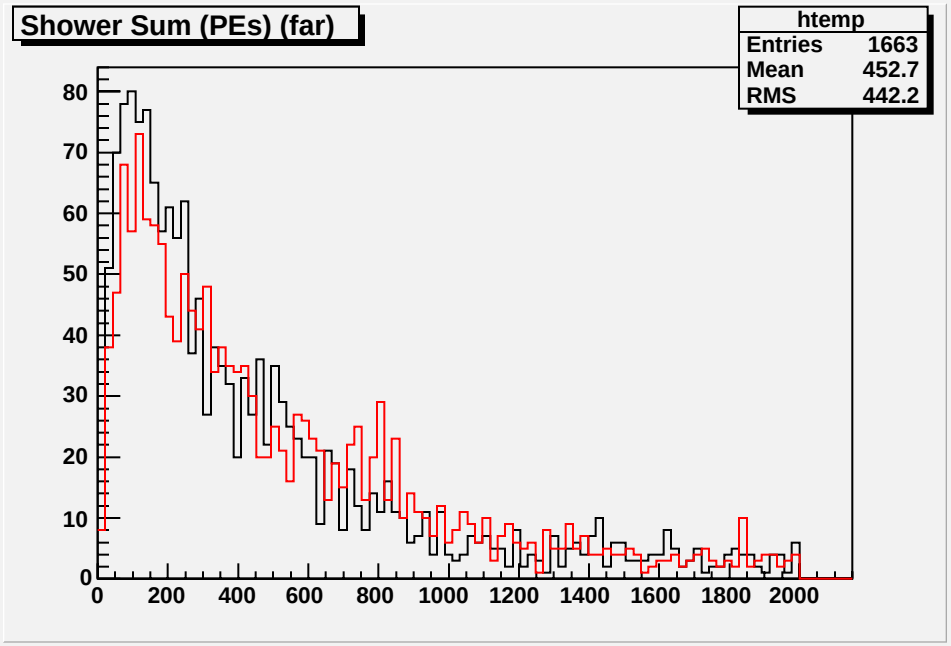
RMS 0.703554 / 0.664267

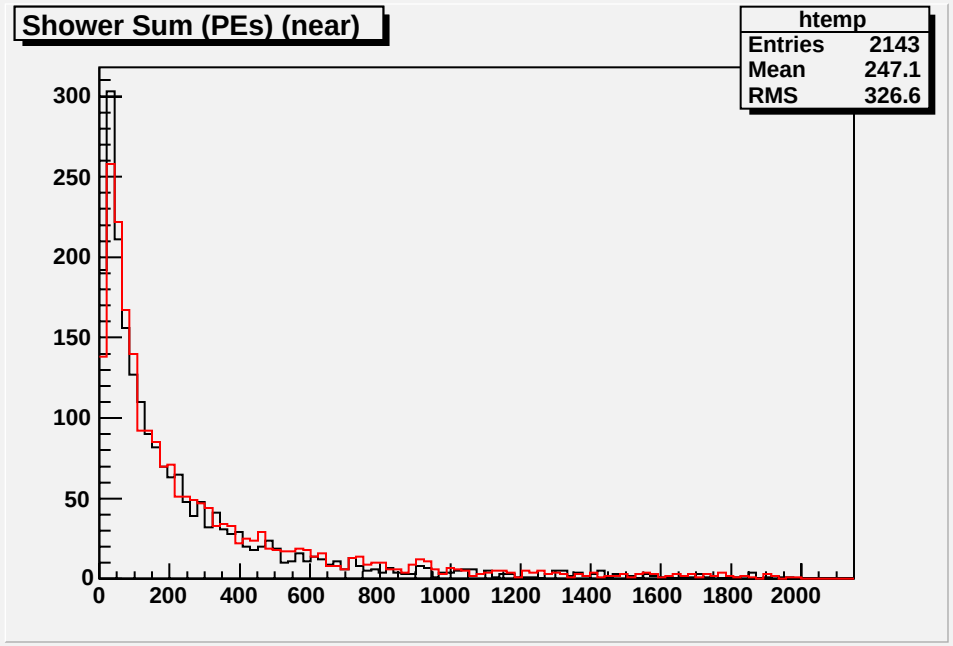
Track MIPs/Strip (Near Detector)

 # Entries 85309 / 87232

Mean 1.119524 / 1.102723

RMS 0.724992 / 0.701760





Shower Sum (PEs) (Far Detector)

 # Entries 1663 / 1614

Mean 452.699414 / 513.796326

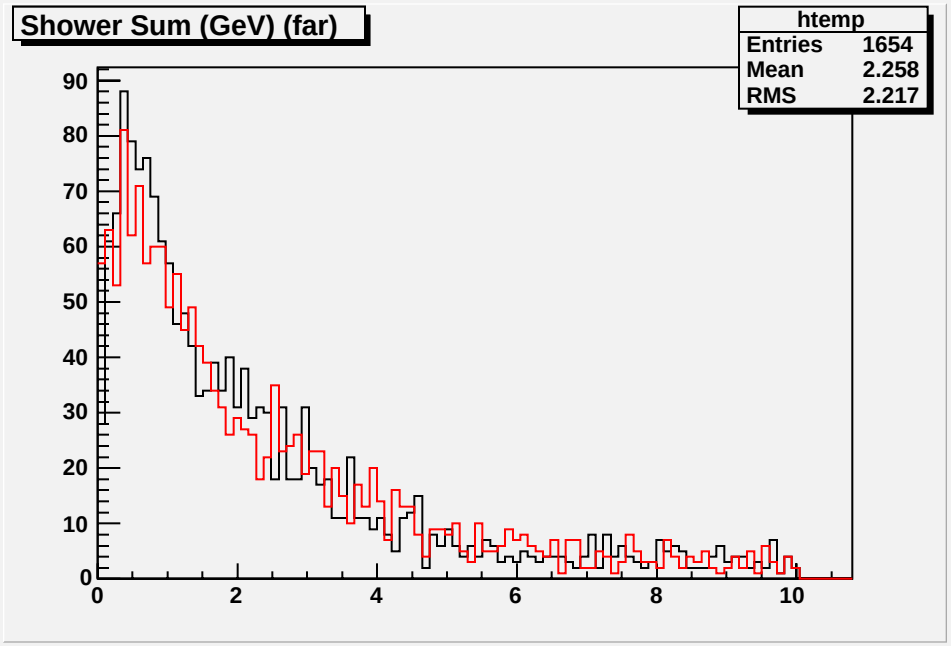
RMS 442.209975 / 445.633947

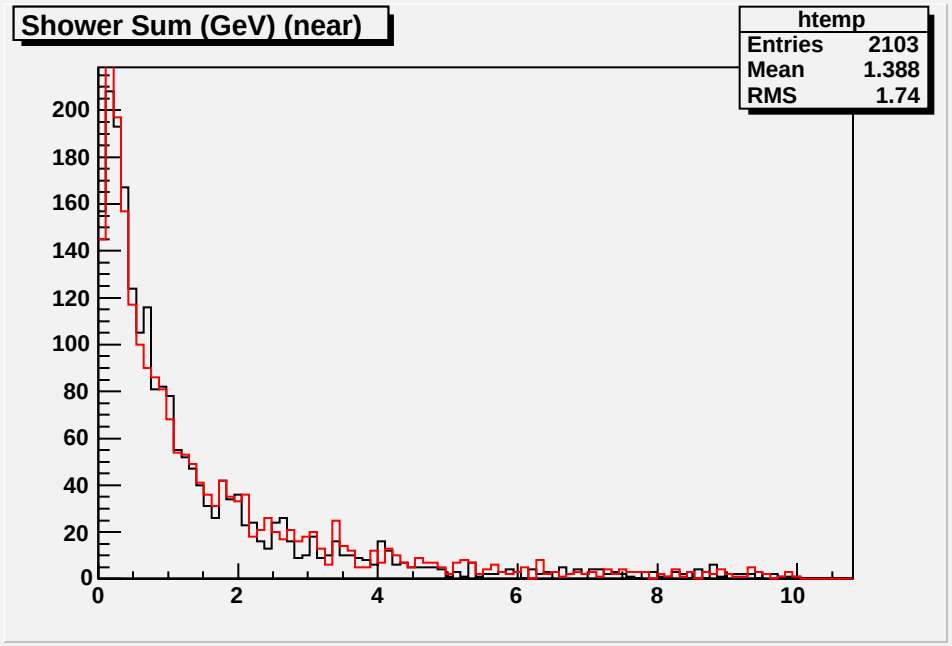
Shower Sum (PEs) (Near Detector)

 # Entries 2143 / 2179

Mean 247.111535 / 284.488511

RMS 326.634052 / 355.369874





Shower Sum GeV (Far Detector)

 # Entries 1654 / 1639

Mean 2.258297 / 2.335787

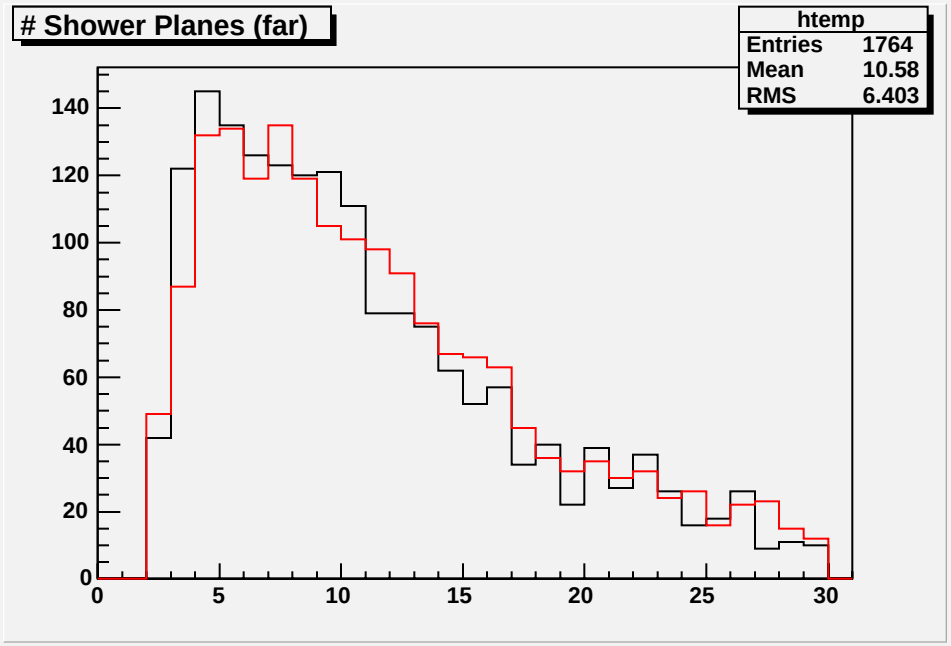
RMS 2.217348 / 2.216733

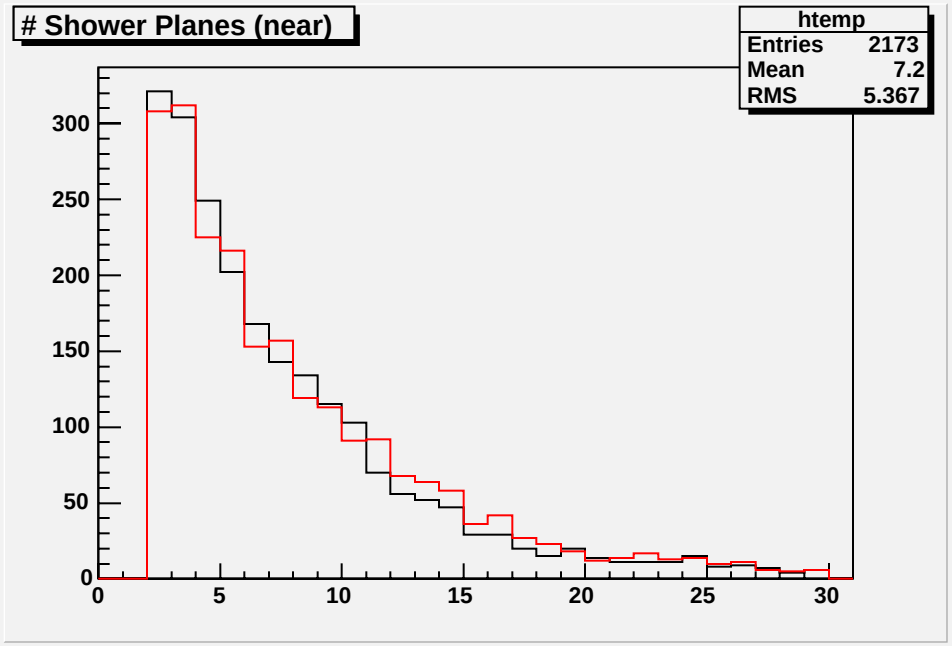
Shower Sum (GeV) (Near Detector)

 # Entries 2103 / 2164

Mean 1.388015 / 1.491255

RMS 1.739571 / 1.824344





 # Planes/Shower (Far Detector)

 # Entries 1764 / 1790

Mean 10.577664 / 11.066480

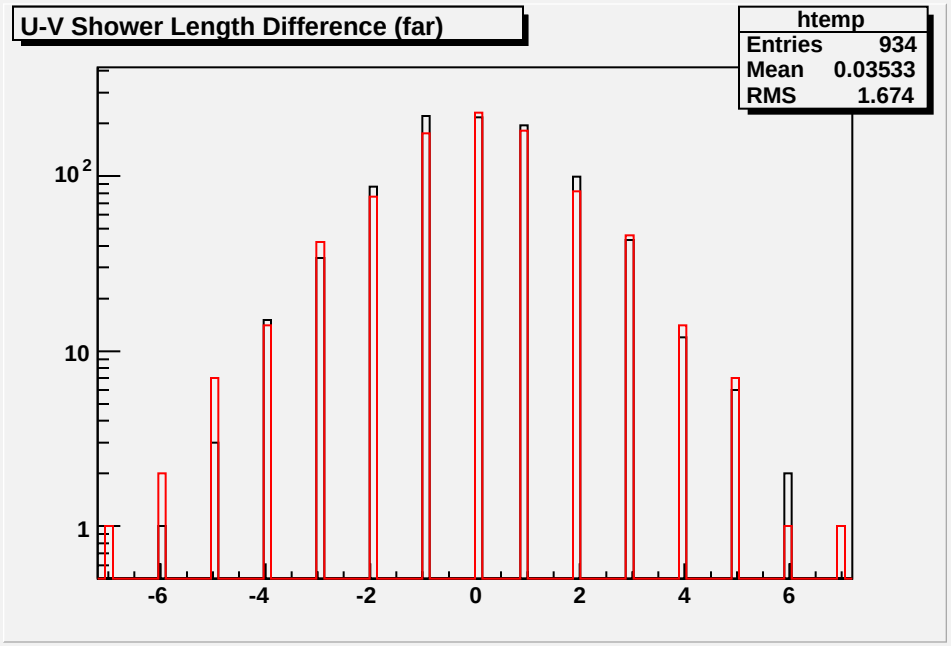
RMS 6.403140 / 6.531535

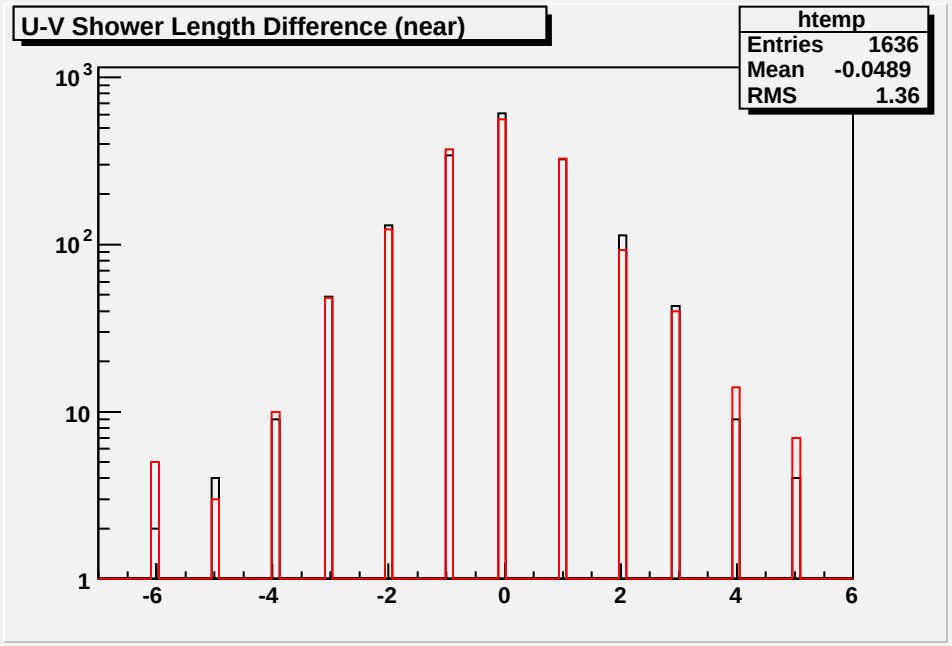
 # Shower Planes (Near Detector)

 # Entries 2173 / 2230

Mean 7.200184 / 7.570404

RMS 5.366971 / 5.570118





U-V Shower Length Diff. (Far Detector)

 # Entries 934 / 880

Mean 0.035332 / 0.026136

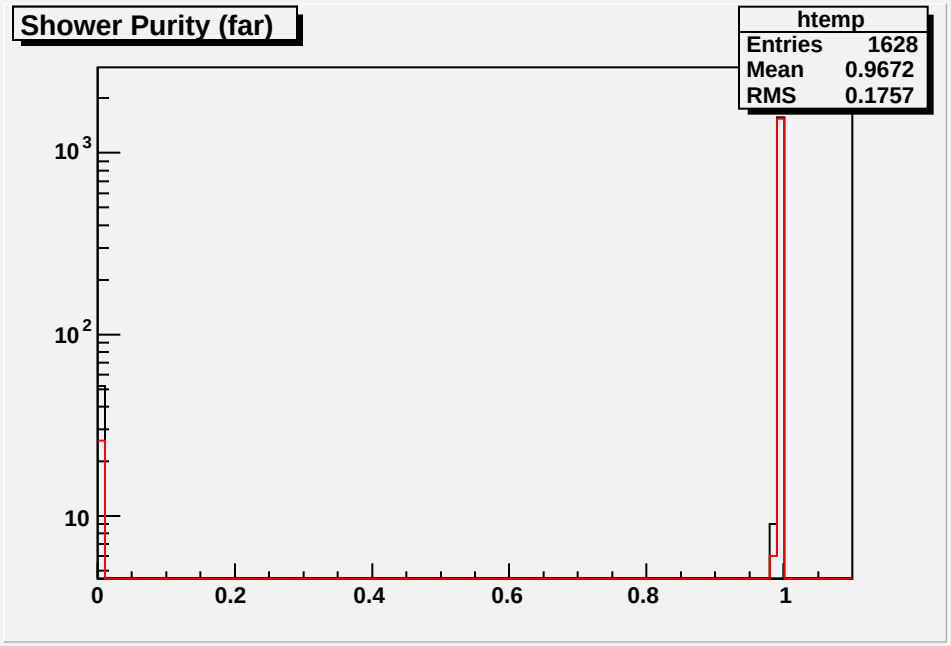
RMS 1.673523 / 1.778789

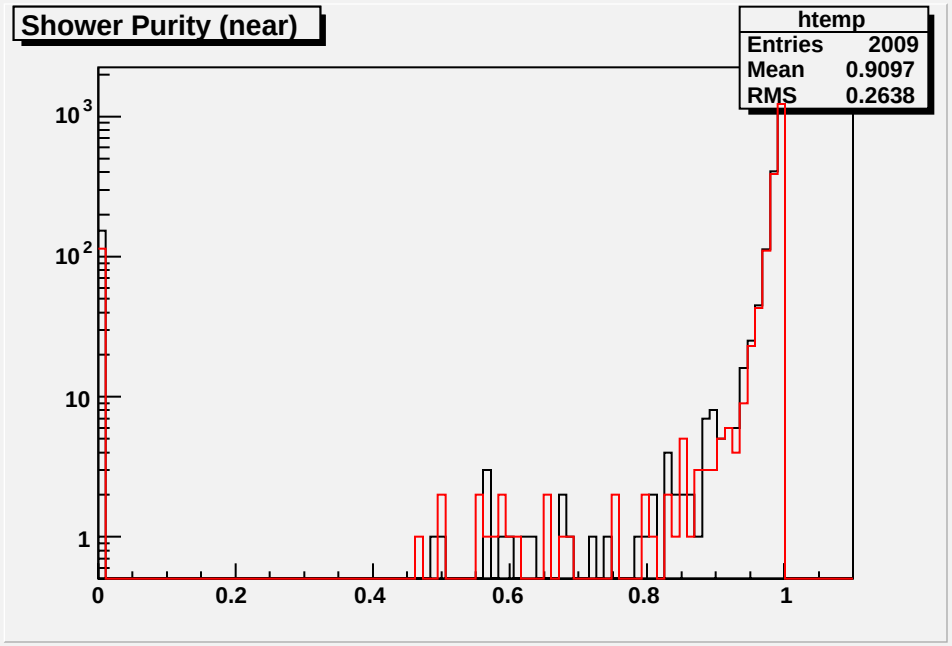
U-V Shower Length Diff (Near Detector)

 # Entries 1636 / 1603

Mean -0.048900 / -0.067374

RMS 1.359582 / 1.423167





Shower Purity (Far Detector)

 # Entries 1628 / 1581

Mean 0.967191 / 0.982597

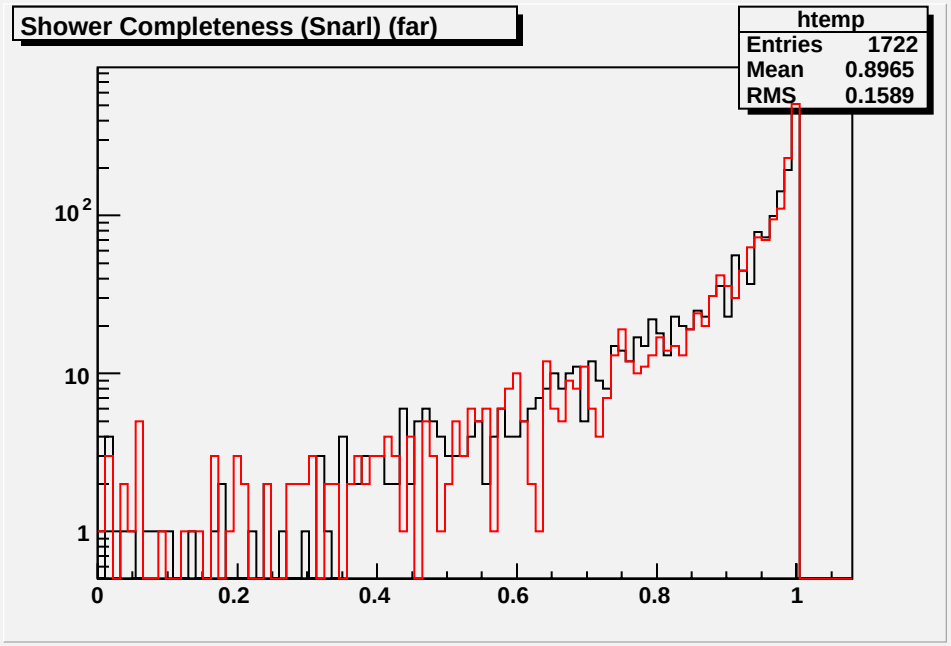
RMS 0.175692 / 0.127075

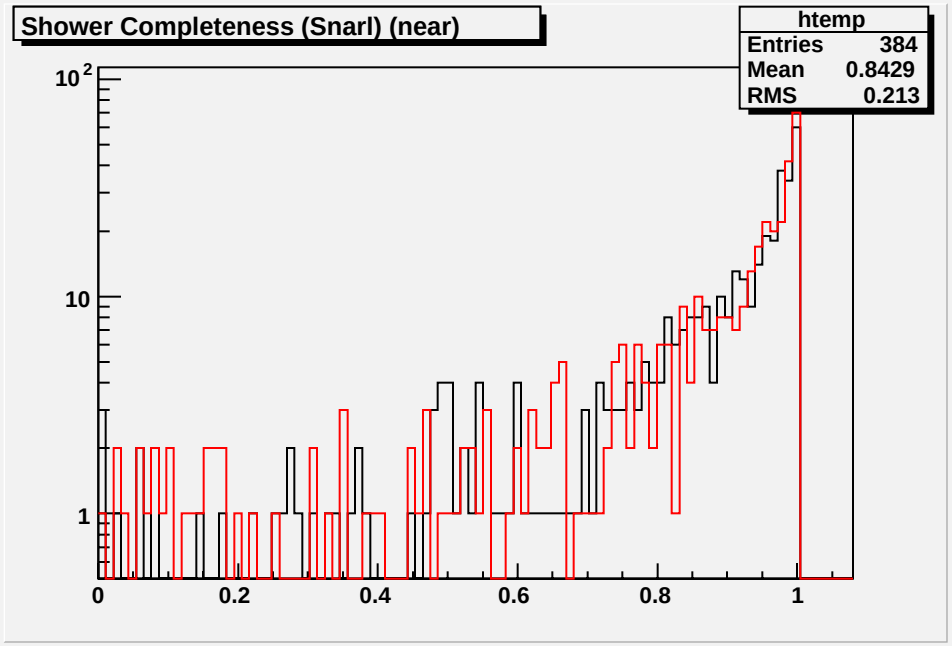
Shower Purity (Near Detector)

 # Entries 2009 / 1636

Mean 0.909721 / -0.048900

RMS 0.263842 / 1.359582





Shower Completeness (Far Detector)

 # Entries 1722 / 1776

Mean 0.896534 / 0.879513

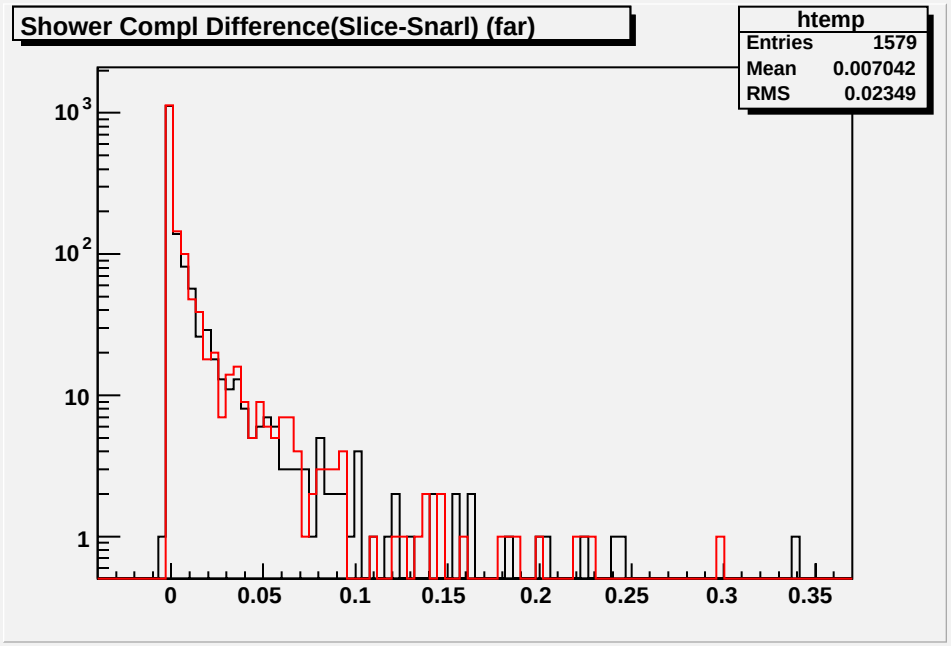
RMS 0.158880 / 0.211442

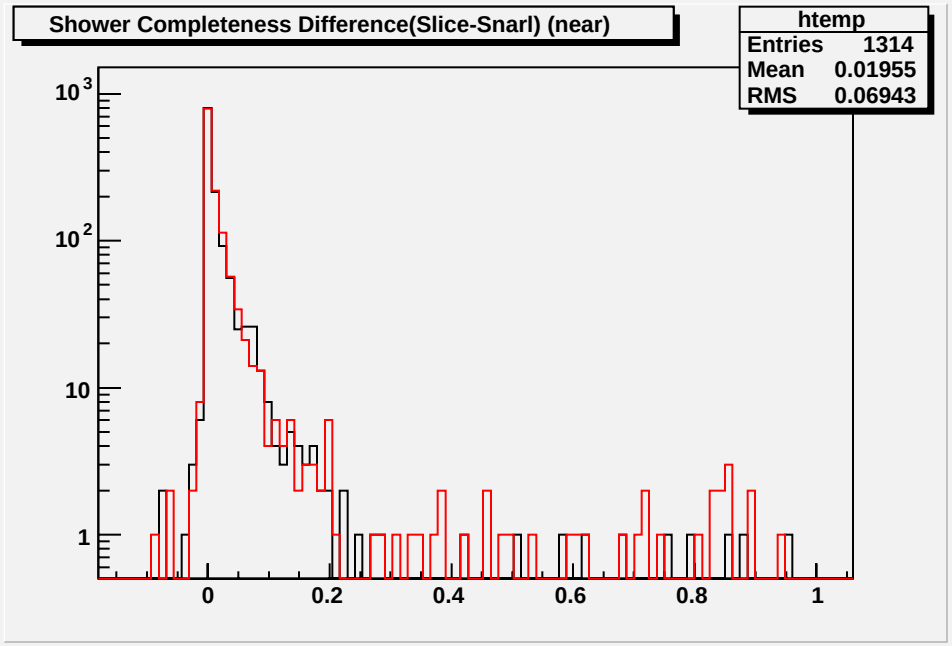
Shower Completeness (Near Detector)

 # Entries 384 / 389

Mean 0.842931 / 0.831983

RMS 0.212990 / 0.237627





Shower Compl. (Slice-Snarl) (Far Detector)

 # Entries 1579 / 1625

Mean 0.007042 / 0.007584

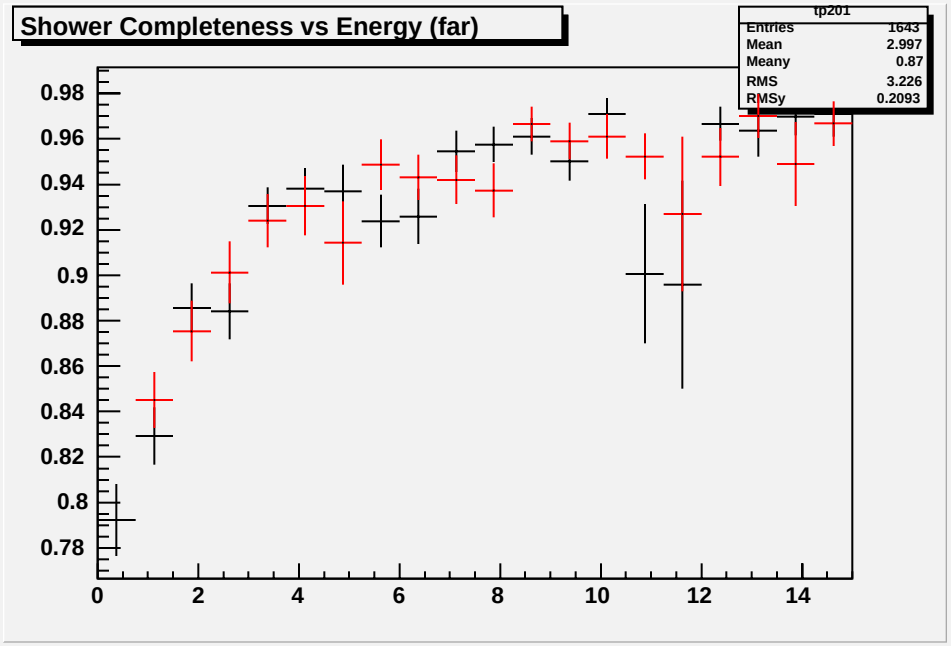
RMS 0.023494 / 0.032511

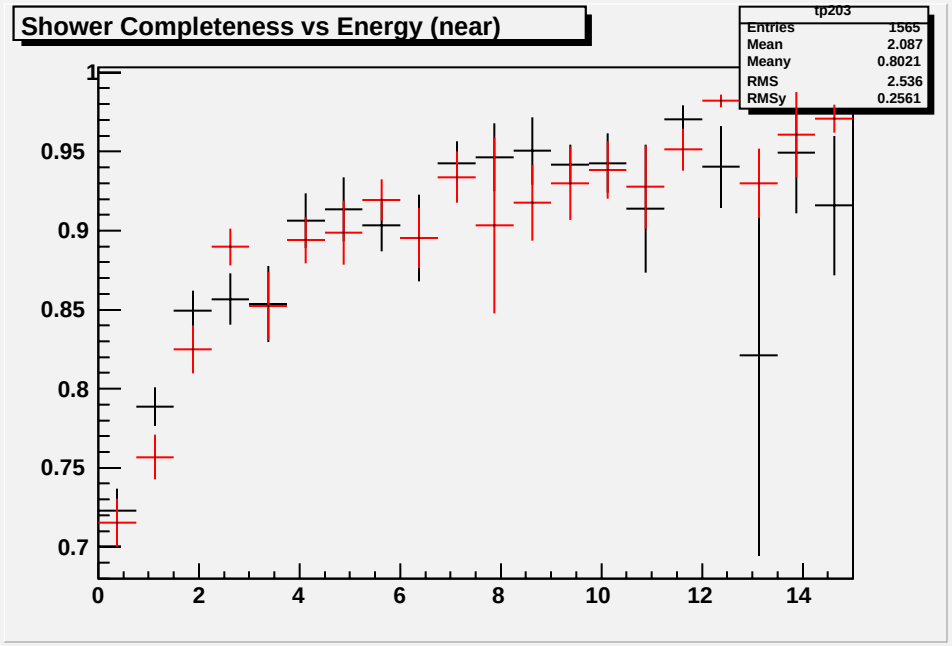
Shower Compl Diff (Slice-Snarl)(Near)

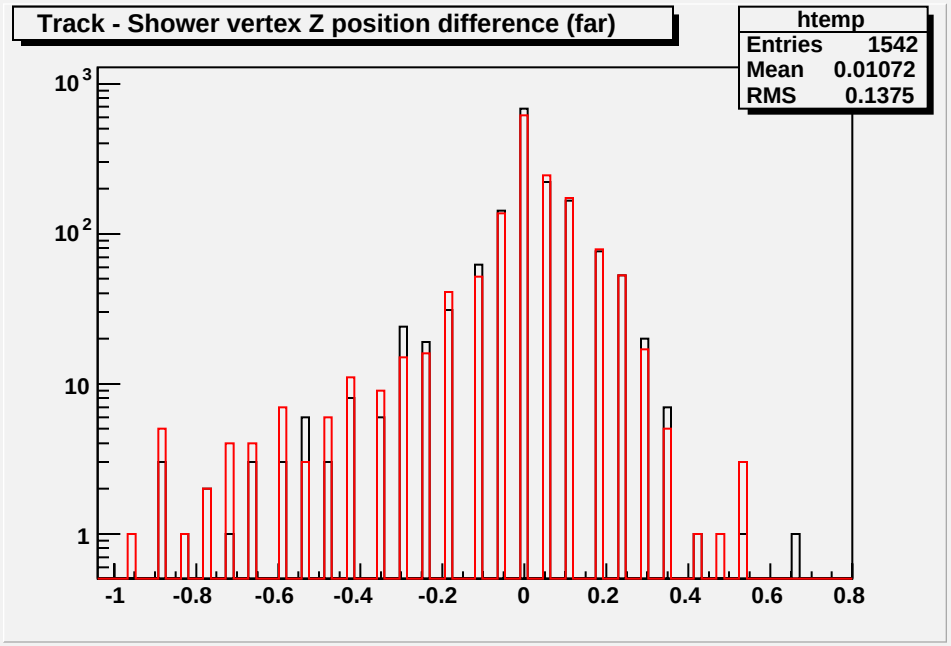
 # Entries 1579 / 1349

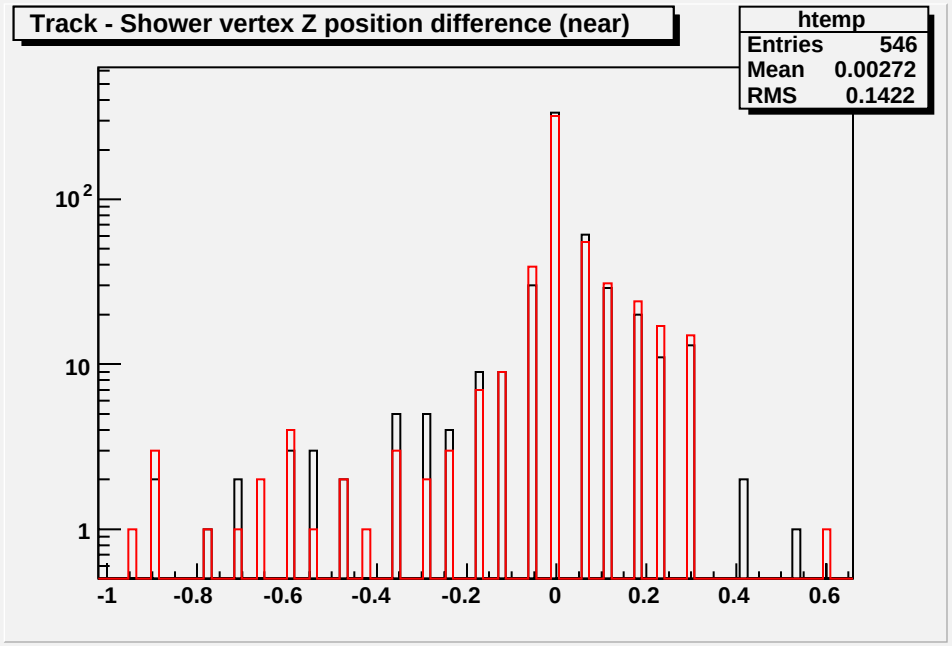
Mean 0.007042 / 0.028125

RMS 0.023494 / 0.104195


Shower Completeness vs Energy (far)
tp201
Entries 1643
Mean 2.997
Meany 0.87
RMS 3.226
RMSy 0.2093
0.98
0.96
0.94
0.92
0.9
0.88
0.86
0.84
0.82
0.8
0.78
0
2
4
6
8
10
12
14


Shower Completeness vs Energy (near)
tp203
Entries 1565
Mean 2.087
Meany 0.8021
RMS 2.536
RMSy 0.2561
1
0.95
0.9
0.85
0.8
0.75
0.7
0
2
4
6
8
10
12
14





Track-Shower vertex Z diff. (Far Detector)

 # Entries 1542 / 1507

Mean 0.010718 / 0.007815

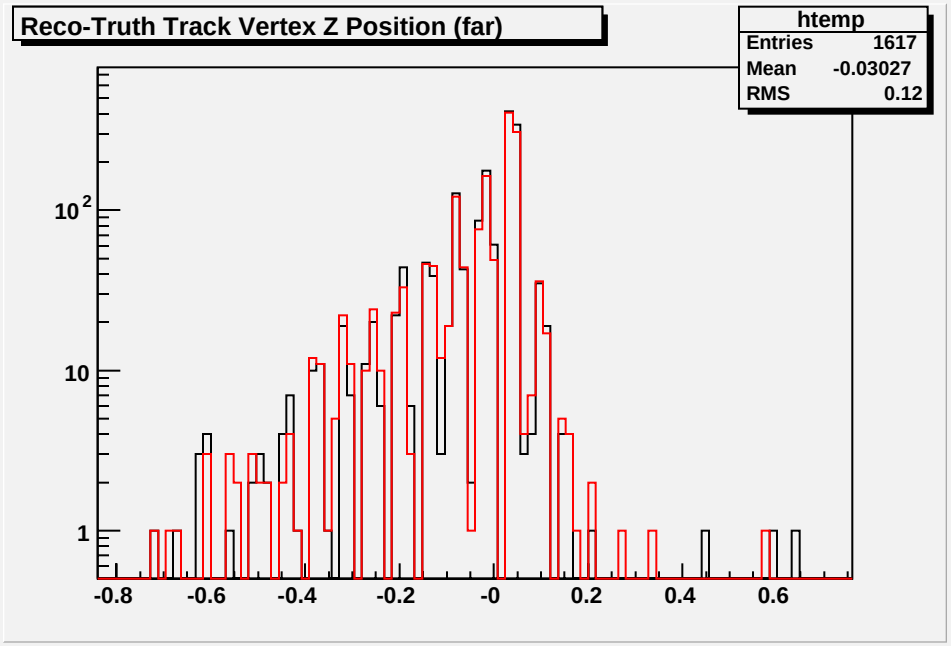
RMS 0.137503 / 0.152752

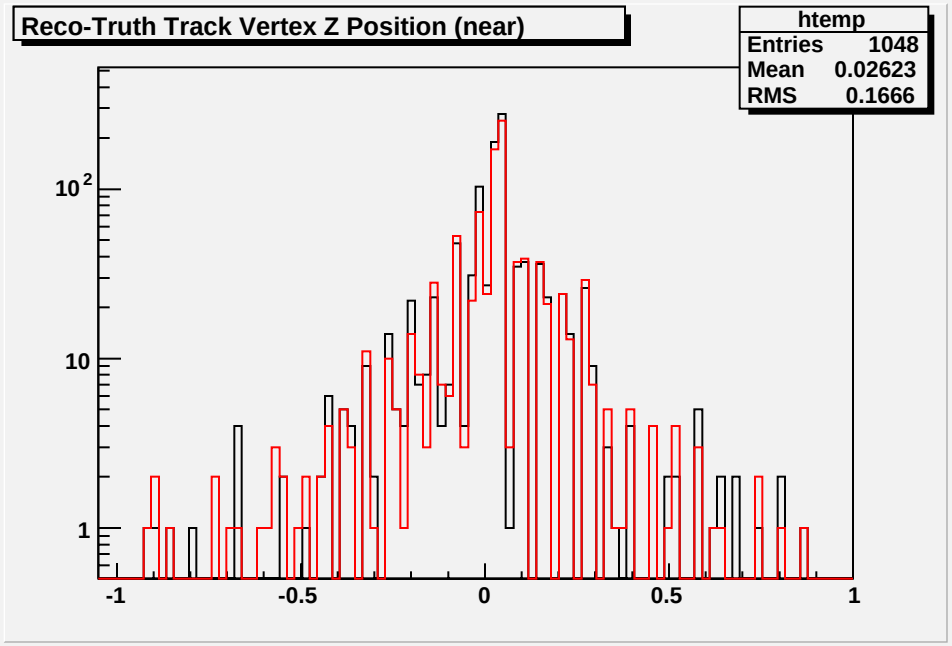
Track - Shower Vertex Z diff. (Near Detector)

 # Entries 546 / 542

Mean 0.002720 / 0.004822

RMS 0.142217 / 0.153647





Reco-Truth Track Vertex Z diff (Far Detector)

 # Entries 1617 / 1563

Mean -0.030274 / -0.034644

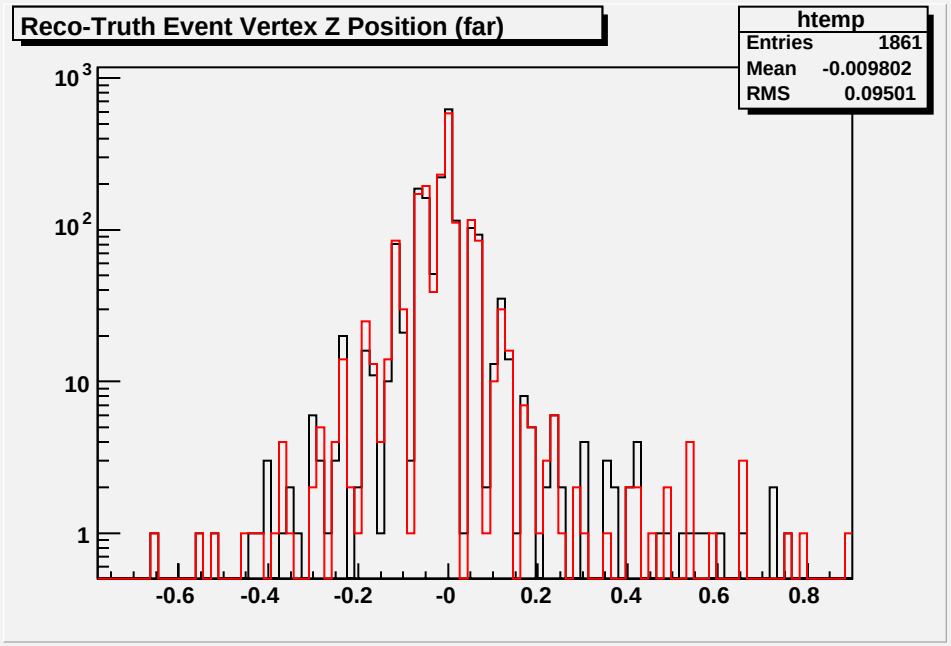
RMS 0.120047 / 0.124098

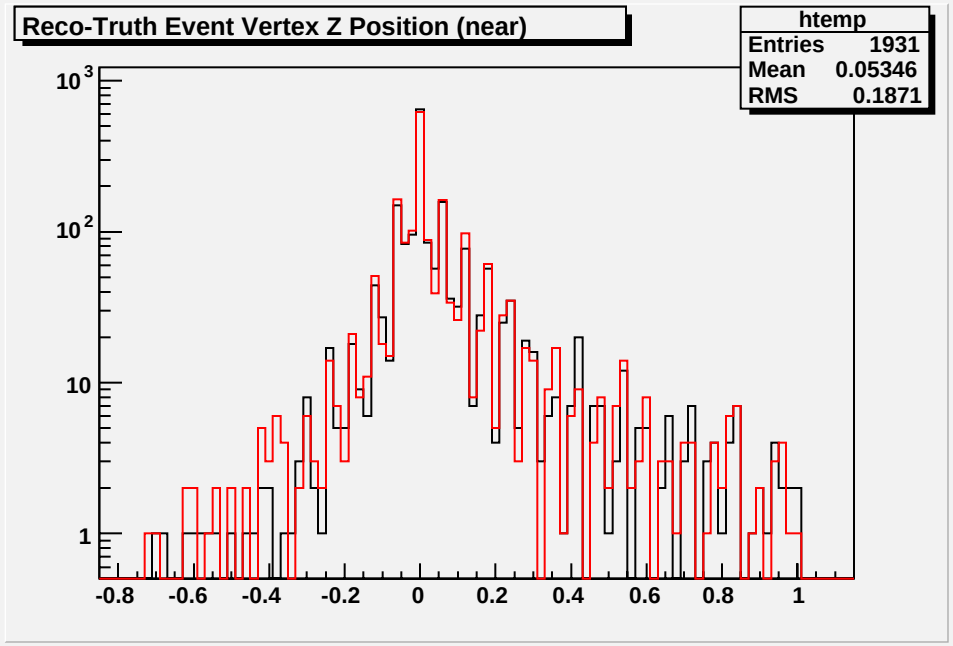
Reco-Truth Track Vtx Z (Near Detector)

 # Entries 1617 / 966

Mean -0.030274 / 0.025793

RMS 0.120047 / 0.174615





Reco-Truth Event Vertex Z diff (Far Detector)

 # Entries 1861 / 1851

Mean -0.009802 / -0.012113

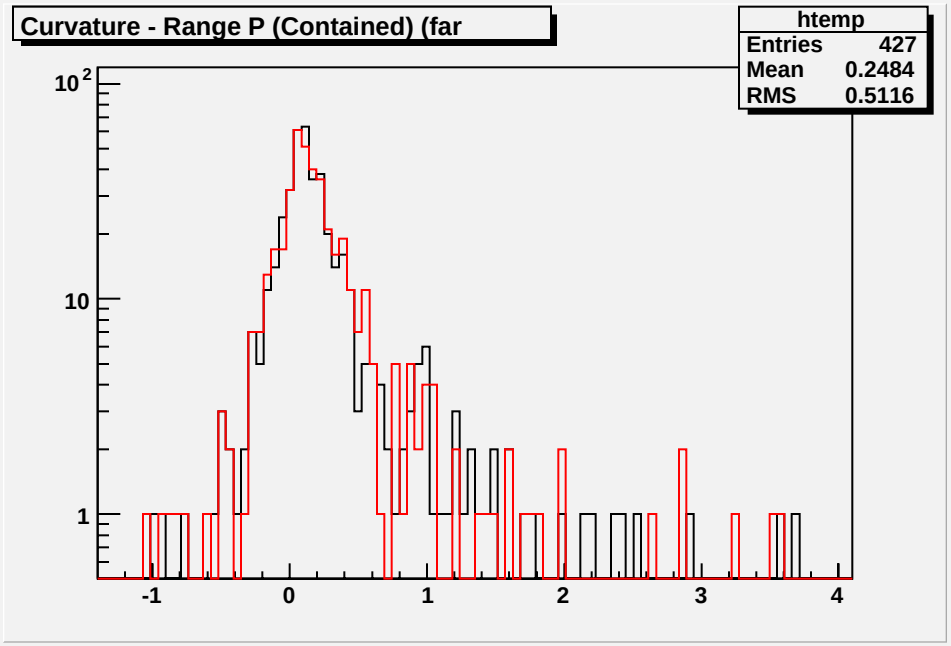
RMS 0.095010 / 0.096504

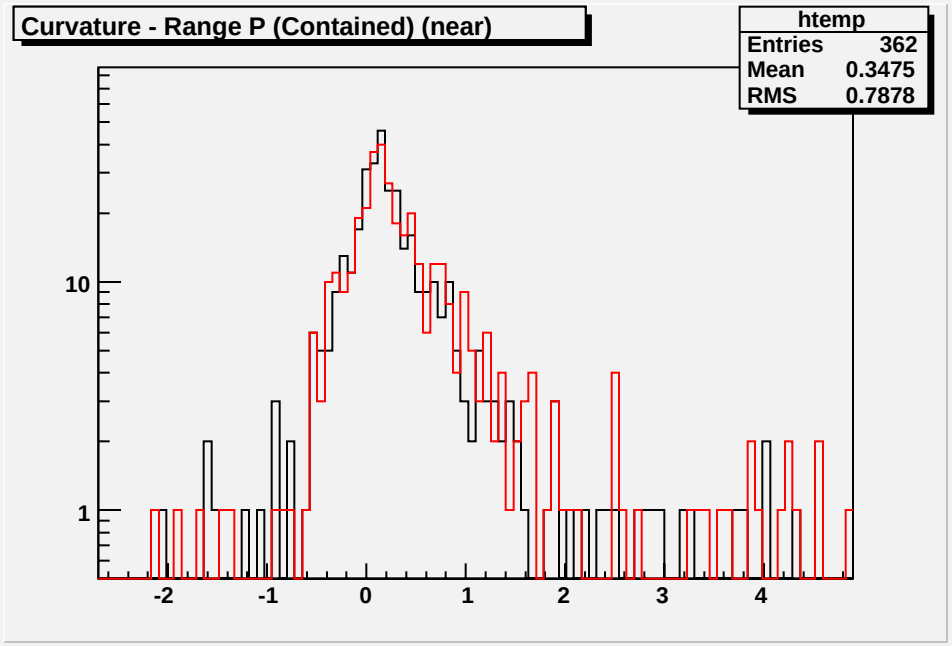
Reco-Truth Ev Vtx Z (Near Detector)

 # Entries 1931 / 1947

Mean 0.053459 / 0.047698

RMS 0.187101 / 0.193739





Curvature - Range P (Far Detector)

 # Entries 427 / 427

Mean 0.248383 / 0.282263

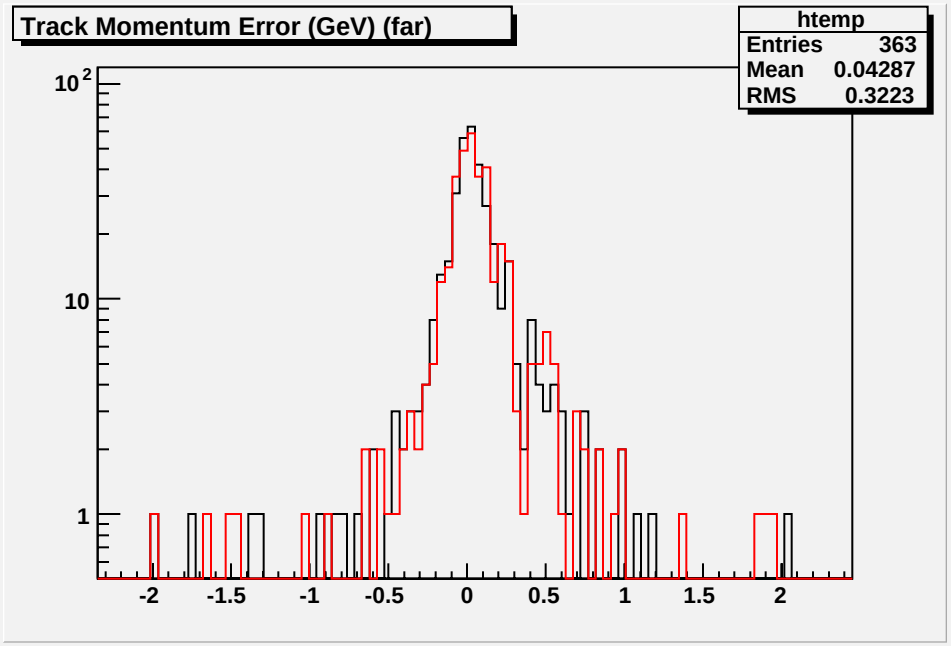
RMS 0.511619 / 0.663026

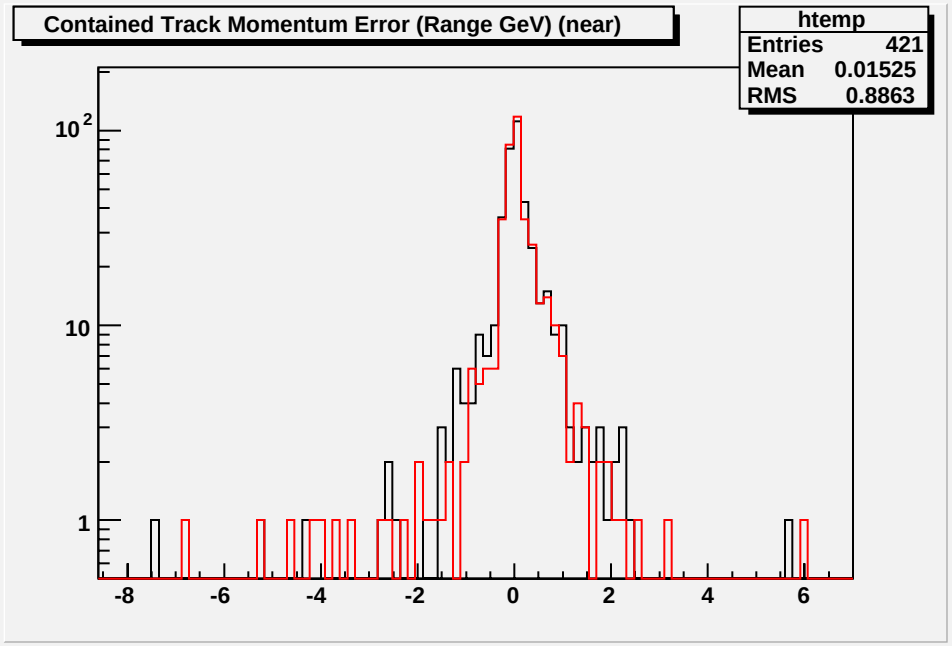
Curvature - Range P (Near Detector)

 # Entries 362 / 378

Mean 0.347482 / 0.481016

RMS 0.787819 / 0.955016





Track Momentum Error (GeV) (Far Detector)

 # Entries 363 / 363

Mean 0.042871 / 0.064834

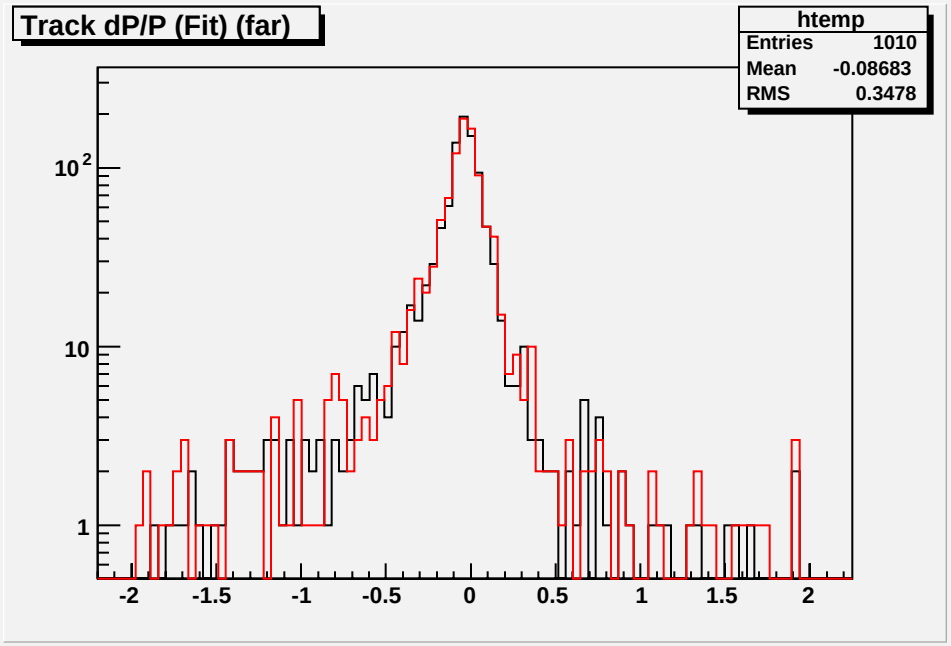
RMS 0.322342 / 0.348459

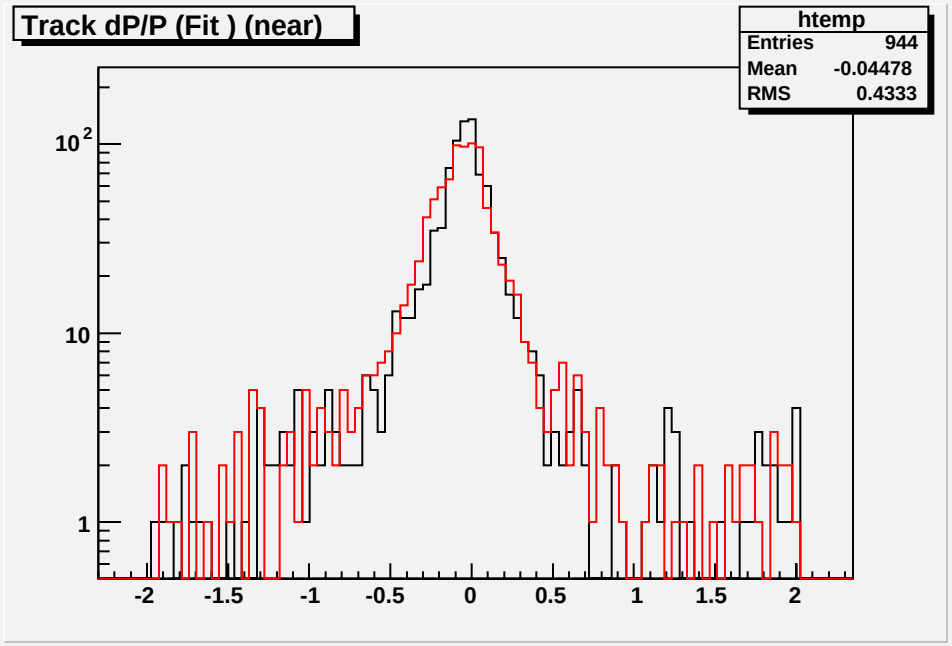
Track Momentum Error (GeV) (Near Detector)

 # Entries 421 / 403

Mean 0.015254 / 0.015841

RMS 0.886278 / 0.901315





Track dP/P (Fit) (Far Detector)

 # Entries 1010 / 1042

Mean -0.086825 / -0.079567

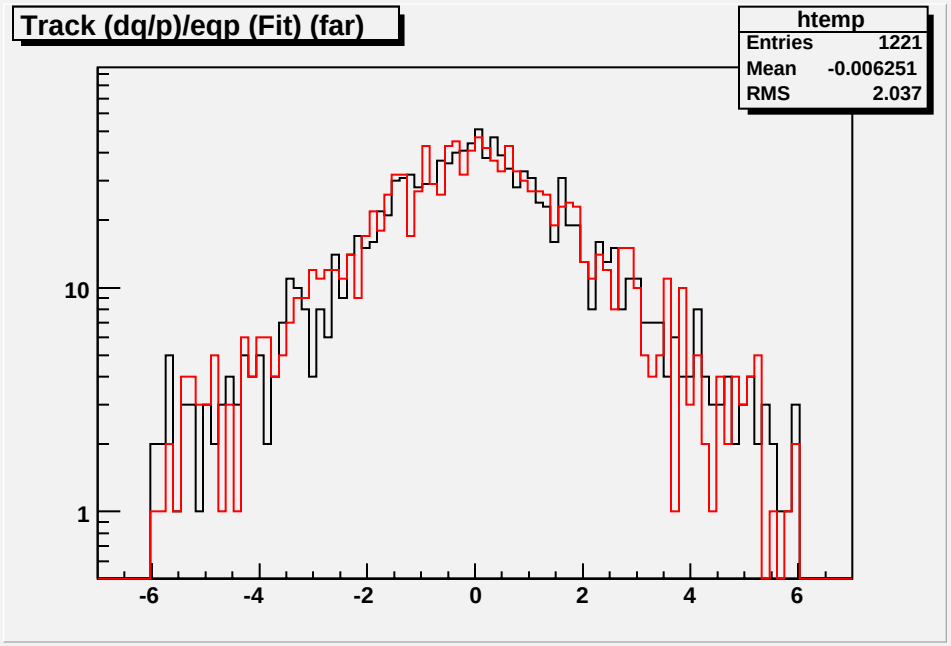
RMS 0.347769 / 0.382770

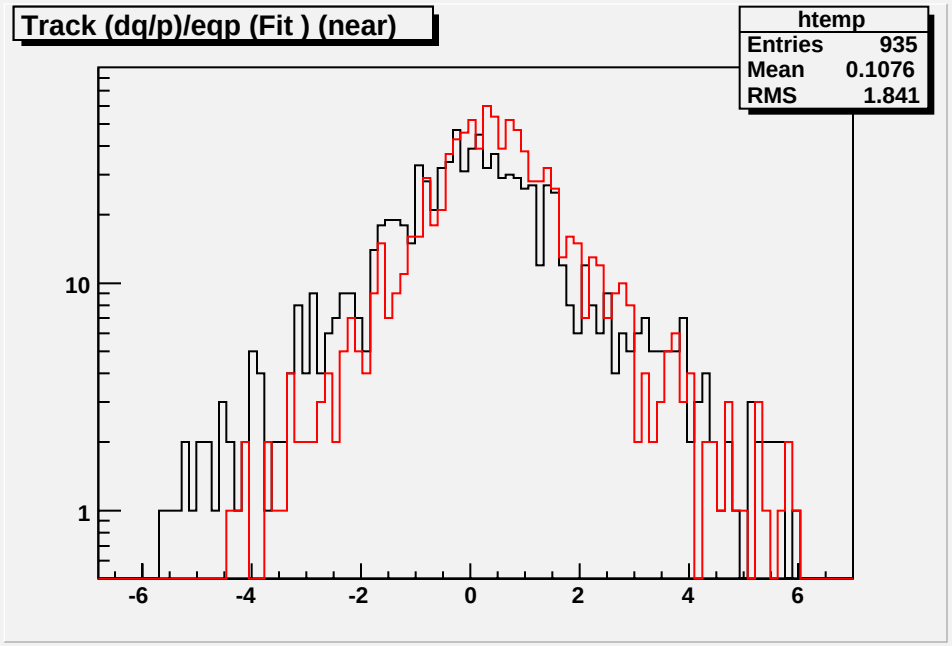
Track dP/P (fit) (Near Detector)

 # Entries 944 / 979

Mean -0.044783 / -0.064340

RMS 0.433282 / 0.449292





Track (Dp/p)/eqp (Far Detector)

 # Entries 1221 / 1221

Mean -0.006251 / -0.046691

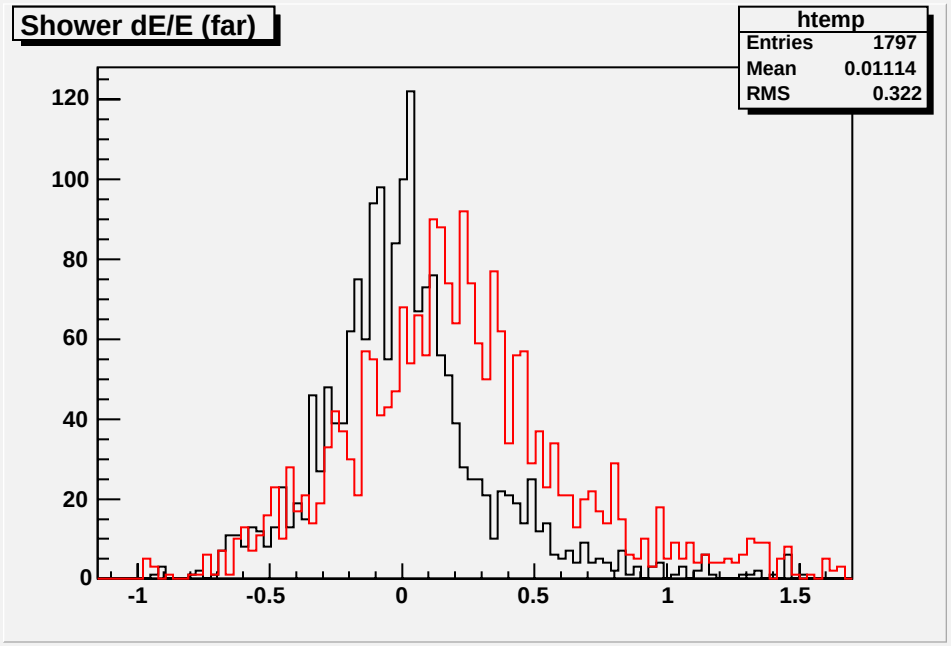
RMS 2.036569 / 2.021496

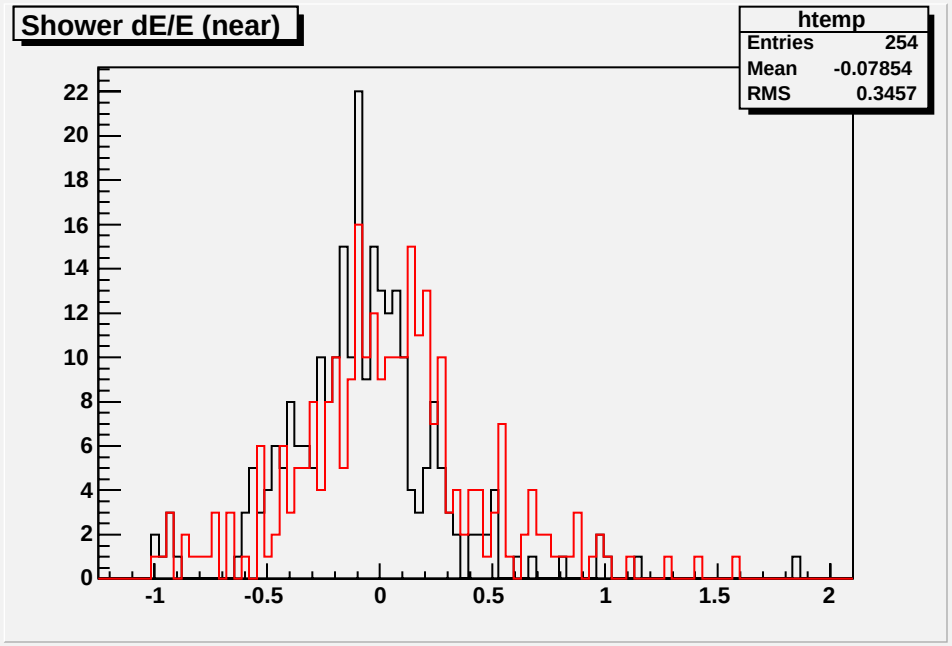
Track (dq/p)/eqp (Near Detector)

 # Entries 935 / 978

Mean 0.107638 / 0.490151

RMS 1.841109 / 1.498360





Shower dE/E (Far Detector)

 # Entries 1797 / 2209

Mean 0.011136 / 0.220191

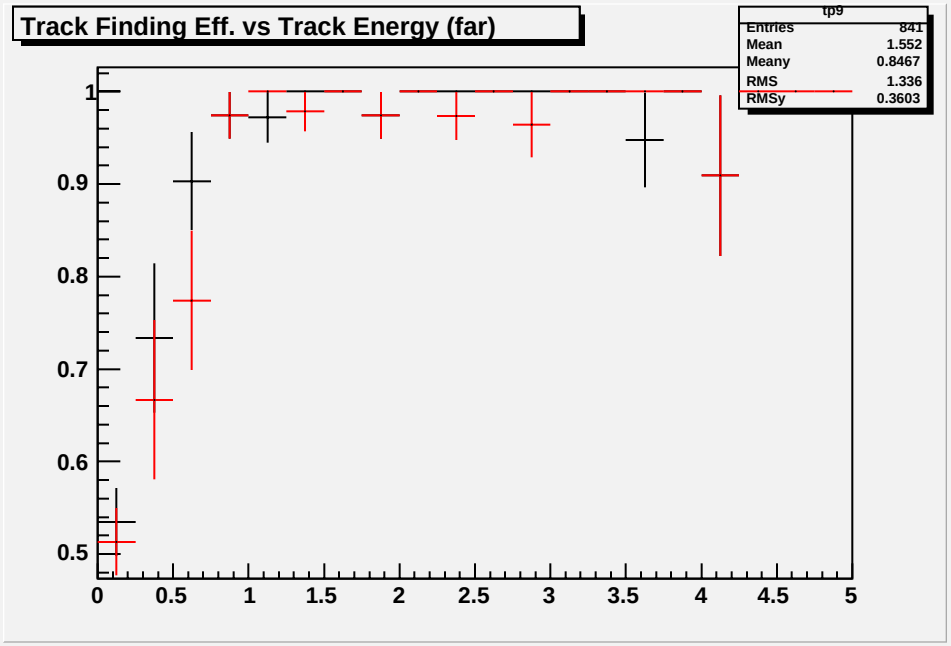
RMS 0.321970 / 0.445025

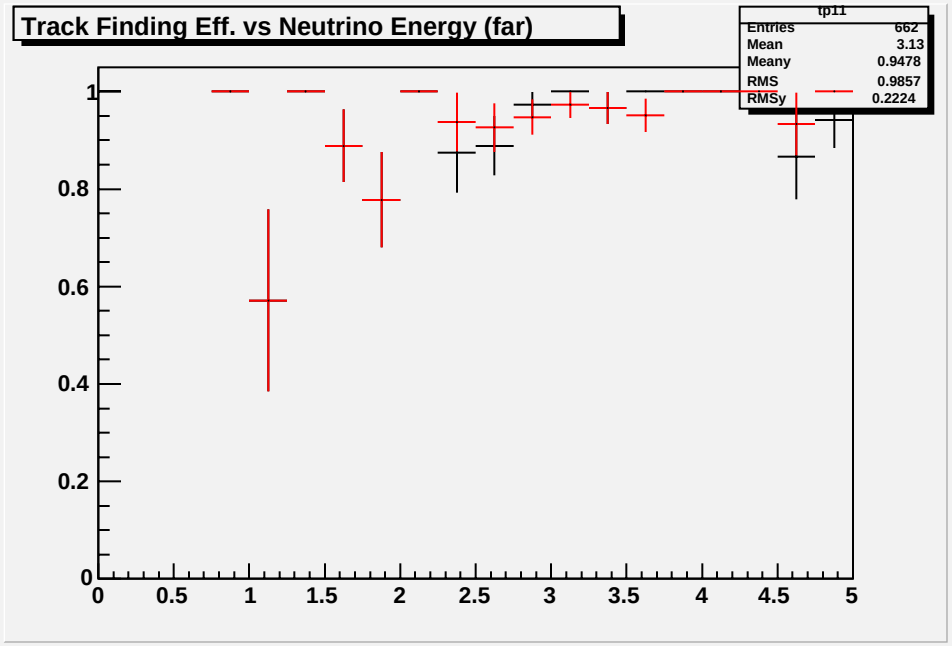
Shower dE/E (Near Detector)

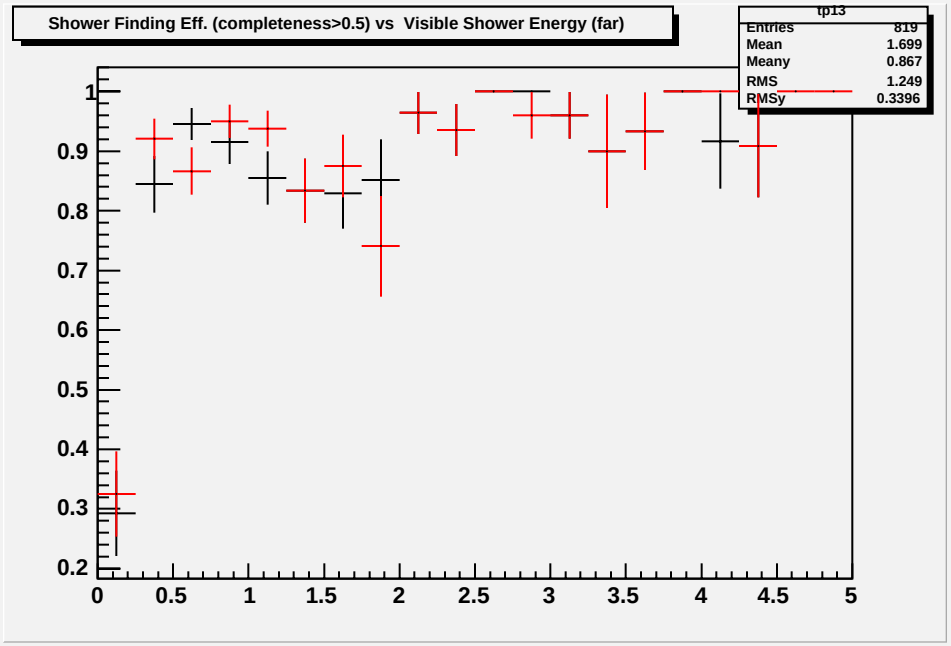
 # Entries 254 / 275

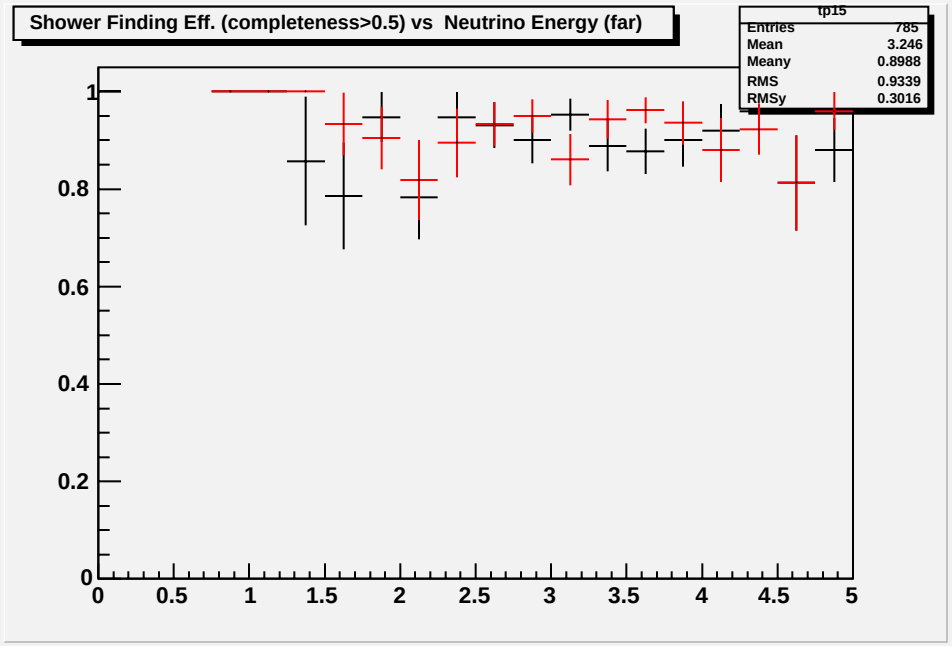
Mean -0.078541 / 0.037139

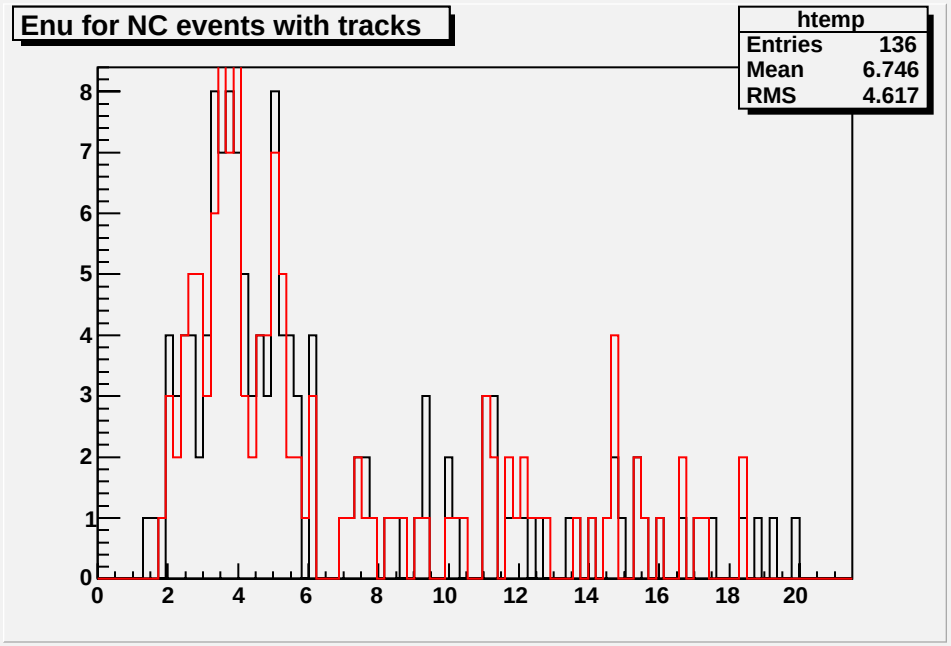
RMS 0.345724 / 0.412507

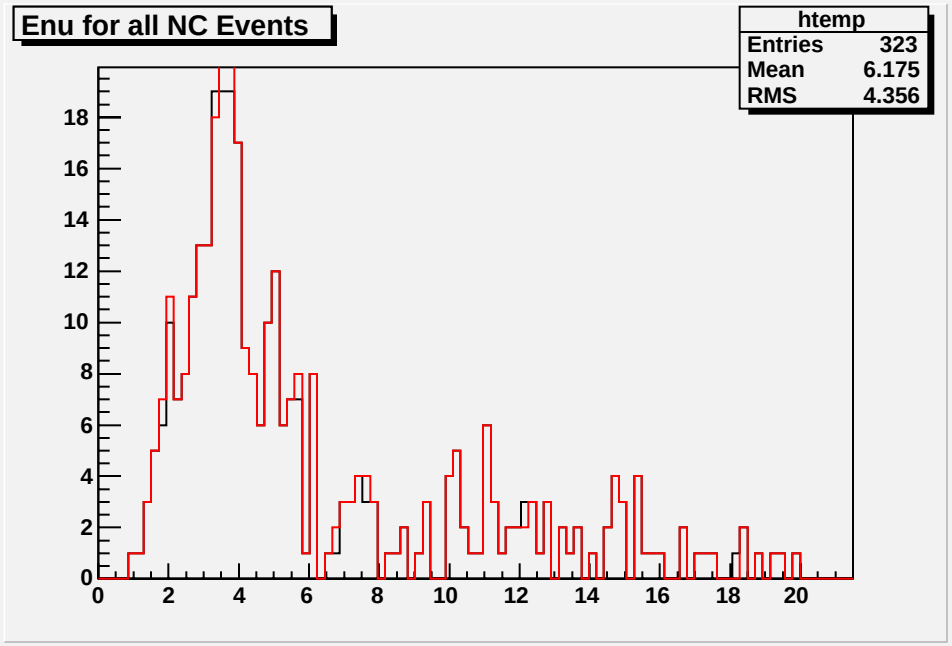

Track Finding Eff. vs Track Energy (far)
tp9
Entries 841
Mean 1.552
Meany 0.8467
RMS 1.336
RMSy 0.3603
1
0.9
0.8
0.7
0.6
0.5
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5


Track Finding Eff. vs Neutrino Energy (far)
tp11
Entries 662
Mean 3.13
Meany 0.9478
RMS 0.9857
RMSy 0.2224
1
0.8
0.6
0.4
0.2
0
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5


Shower Finding Eff. (completeness>0.5) vs Visible Shower Energy (far)
tp13
Entries 819
Mean 1.699
Meany 0.867
RMS 1.249
RMSy 0.3396
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5


Shower Finding Eff. (completeness>0.5) vs Neutrino Energy (far)
tp15
Entries 785
Mean 3.246
Meany 0.8988
RMS 0.9339
RMSy 0.3016
1
0.8
0.6
0.4
0.2
0
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5





Enu for NC events with tracks (Far Detector)

 # Entries 136 / 132

Mean 6.745571 / 6.706404

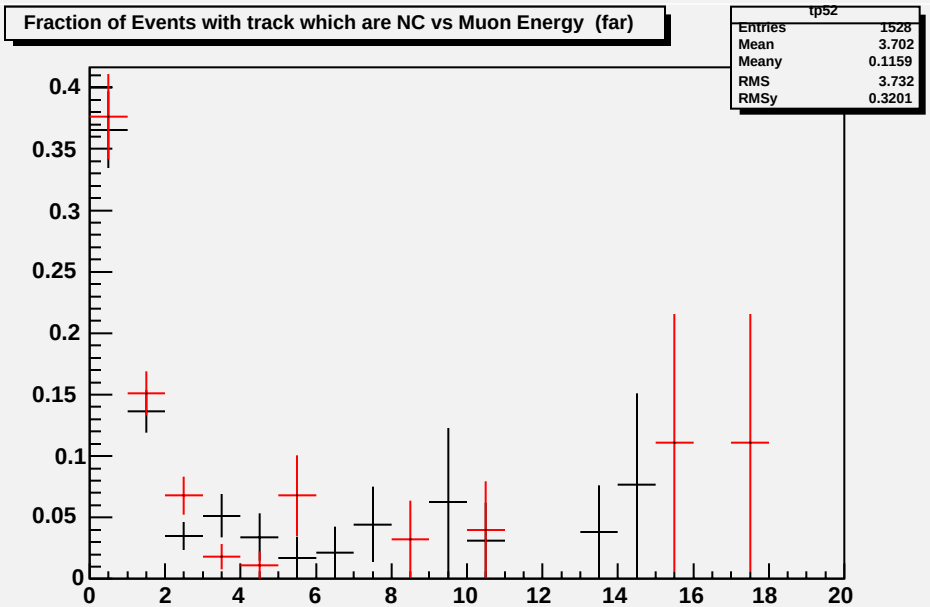
RMS 4.617250 / 4.452933

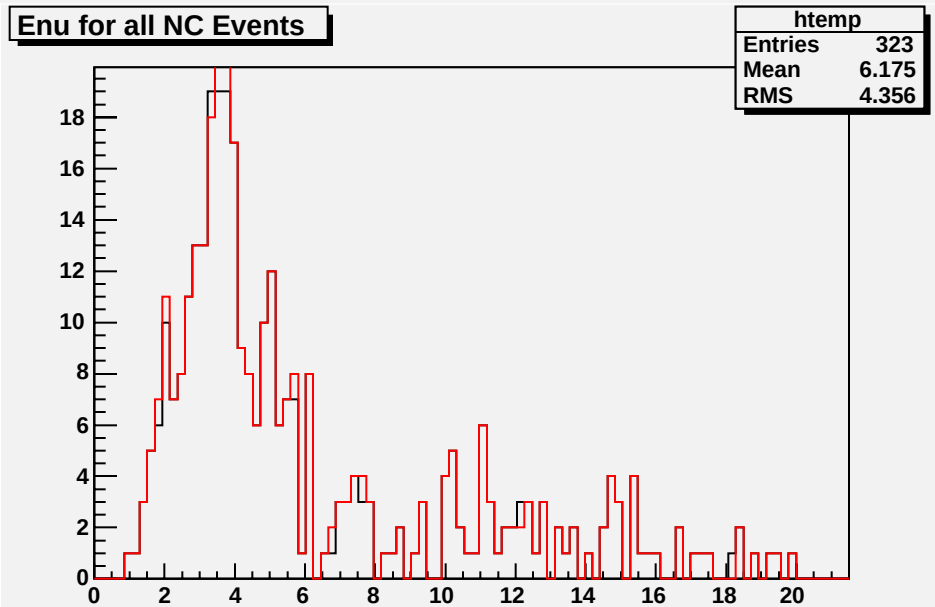
Enu for all NC Events (Far Detector)

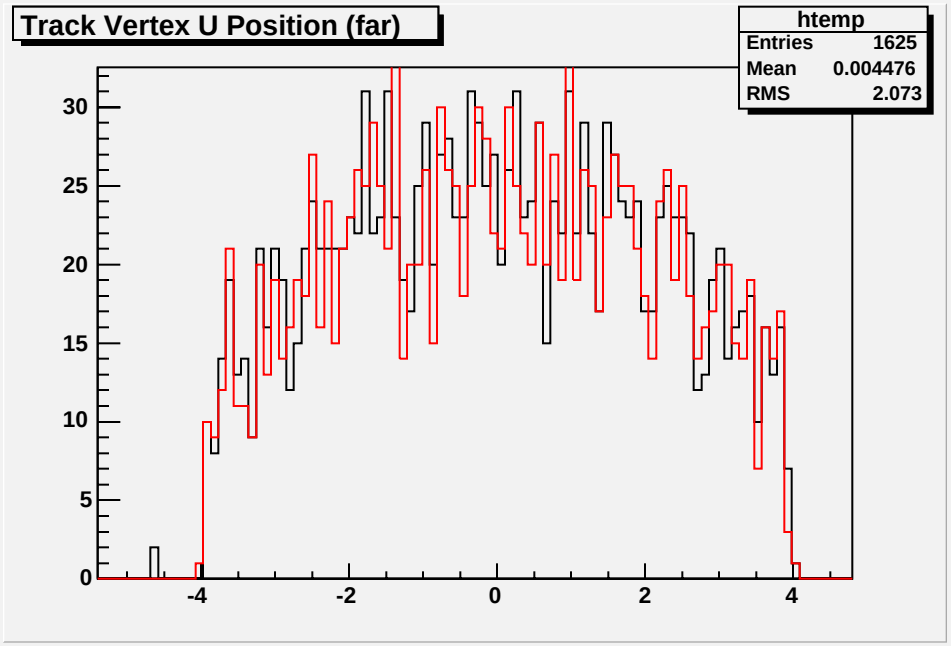
 # Entries 323 / 327

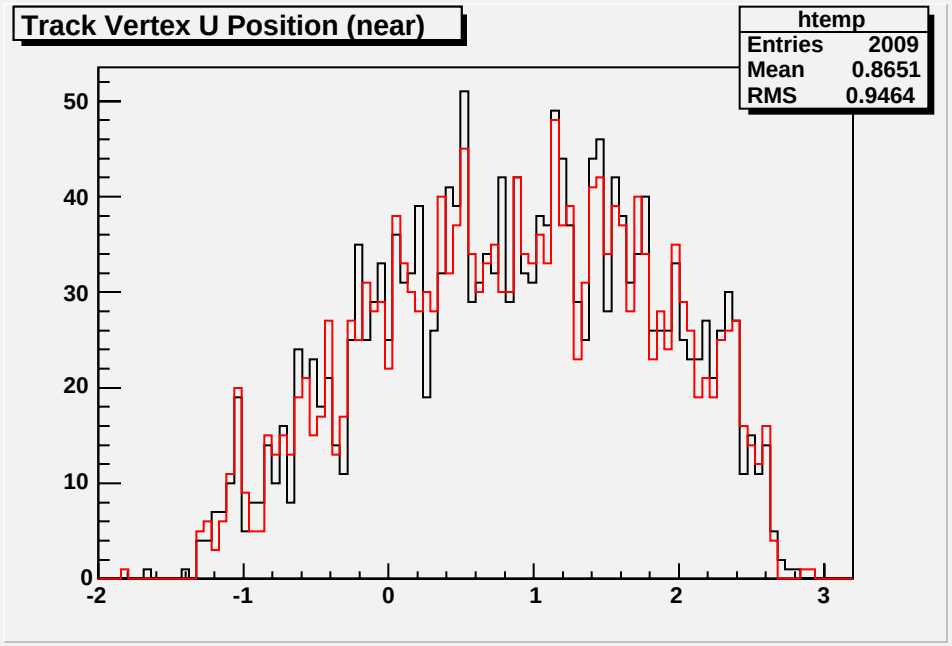
Mean 6.175048 / 6.092779

RMS 4.356430 / 4.281504


Fraction of Events with track which are NC vs Muon Energy (far)
tp52
Entries 1528
Mean 3.702
Meany 0.1159
RMS 3.732
RMSy 0.3201
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
0 2 4 6 8 10 12 14 16 18 20


Enu for all NC Events
htemp
Entries 323
Mean 6.175
RMS 4.356
18
16
14
12
10
8
6
4
2
0
0 2 4 6 8 10 12 14 16 18 20





Track Vertex U (Far Detector)

 # Entries 1625 / 1581

Mean 0.004476 / 0.020263

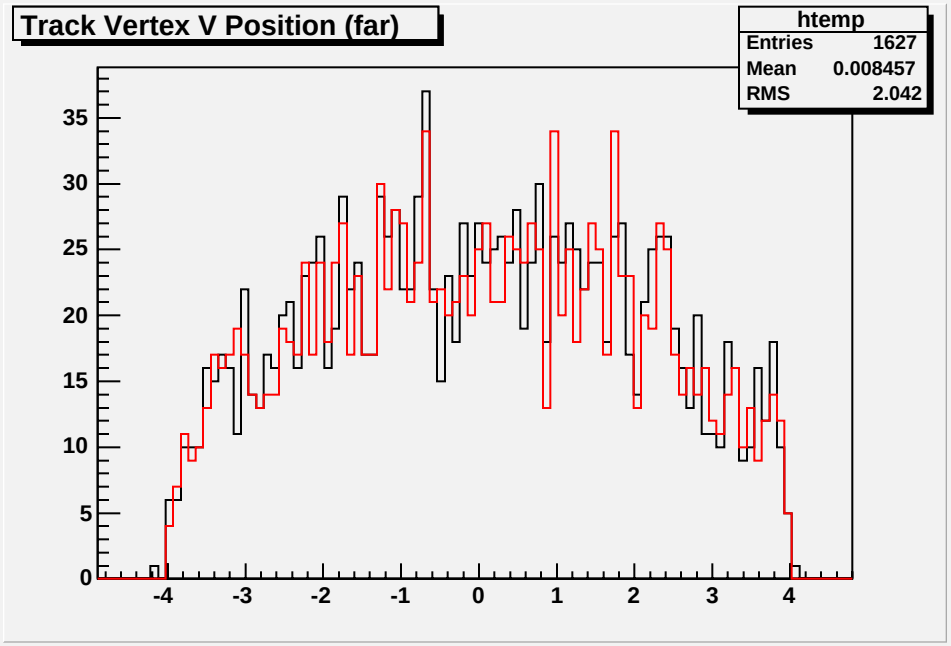
RMS 2.072672 / 2.066807

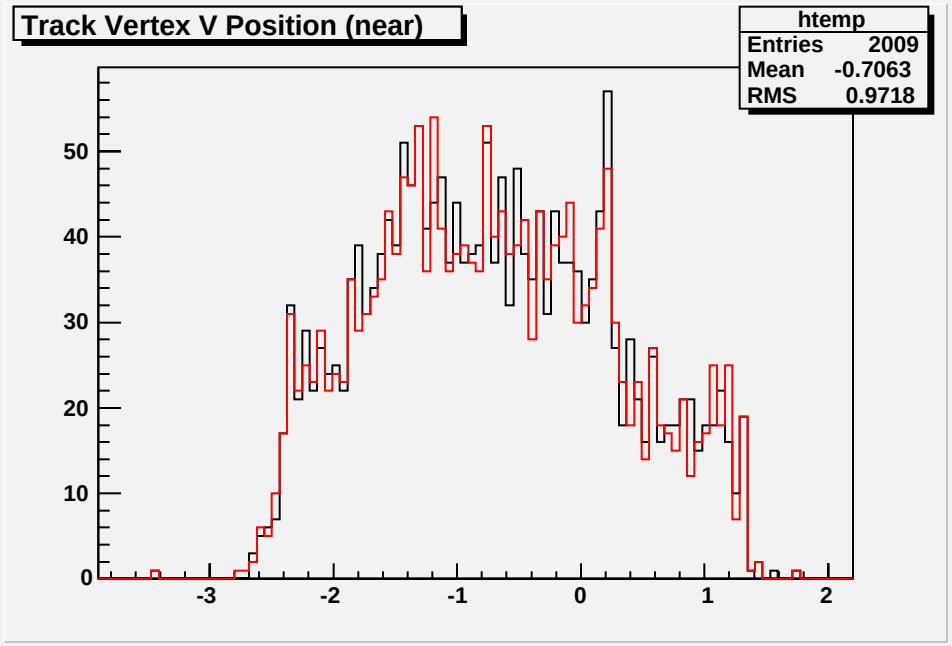
Track Vertex U (Near Detector)

 # Entries 2009 / 1968

Mean 0.865070 / 0.861076

RMS 0.946431 / 0.948836





Track Vertex V (Far Detector)

 # Entries 1627 / 1581

Mean 0.008457 / 0.009032

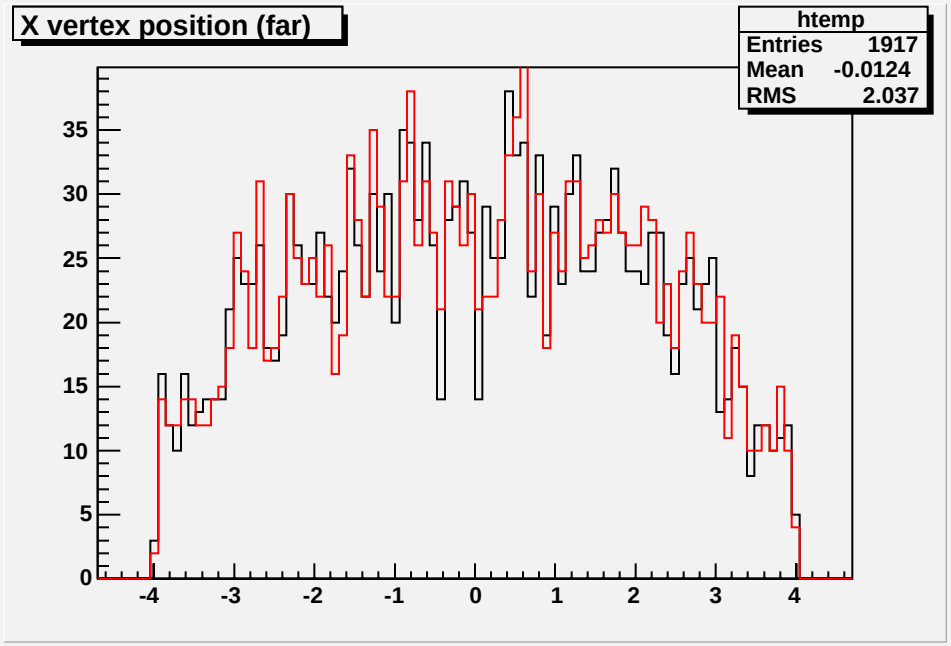
RMS 2.041534 / 2.034060

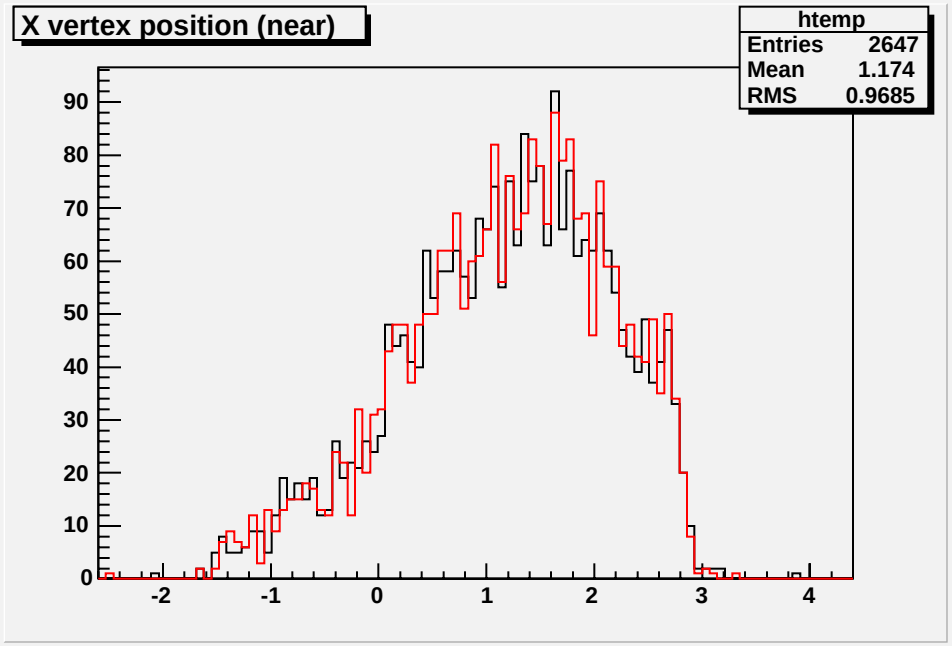
Track Vertex V (Near Detector)

 # Entries 2009 / 1968

Mean -0.706324 / -0.704773

RMS 0.971824 / 0.977128





Track Vertex X (Far Detector)

 # Entries 1917 / 1935

Mean -0.012398 / 0.011422

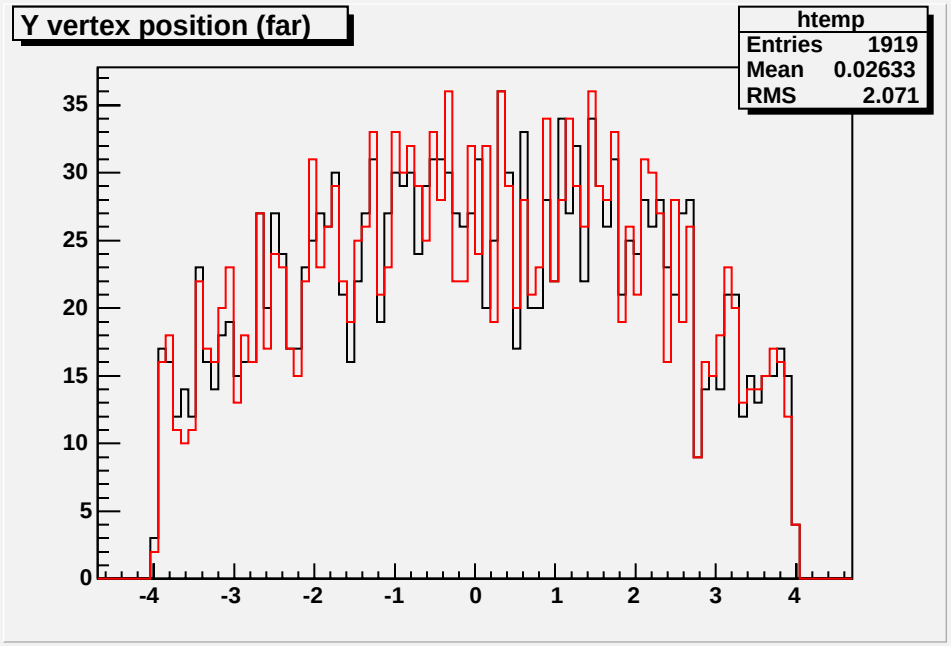
RMS 2.037180 / 2.032481

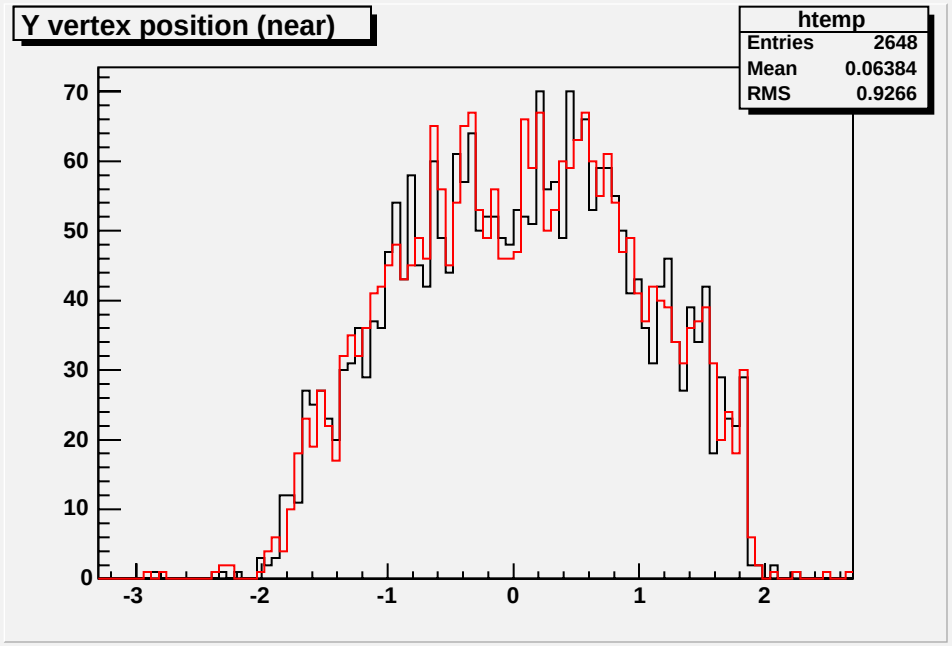
Tracks Vertex X (Near Detector)

 # Entries 2647 / 2681

Mean 1.173677 / 1.177548

RMS 0.968533 / 0.962542





Track Vertex Y (Far Detector)

 # Entries 1919 / 1938

Mean 0.026332 / 0.035621

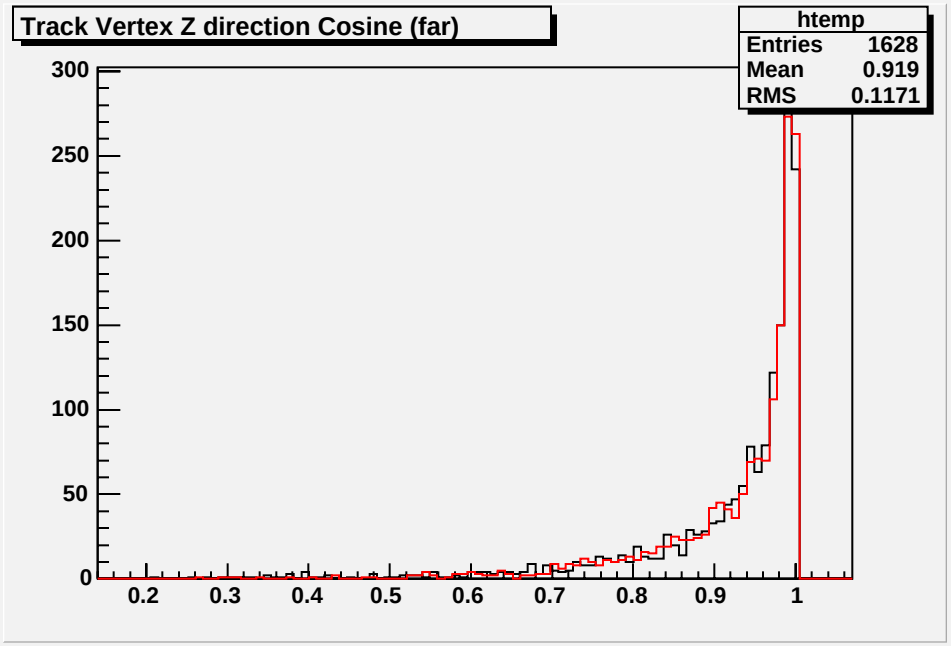
RMS 2.071345 / 2.059201

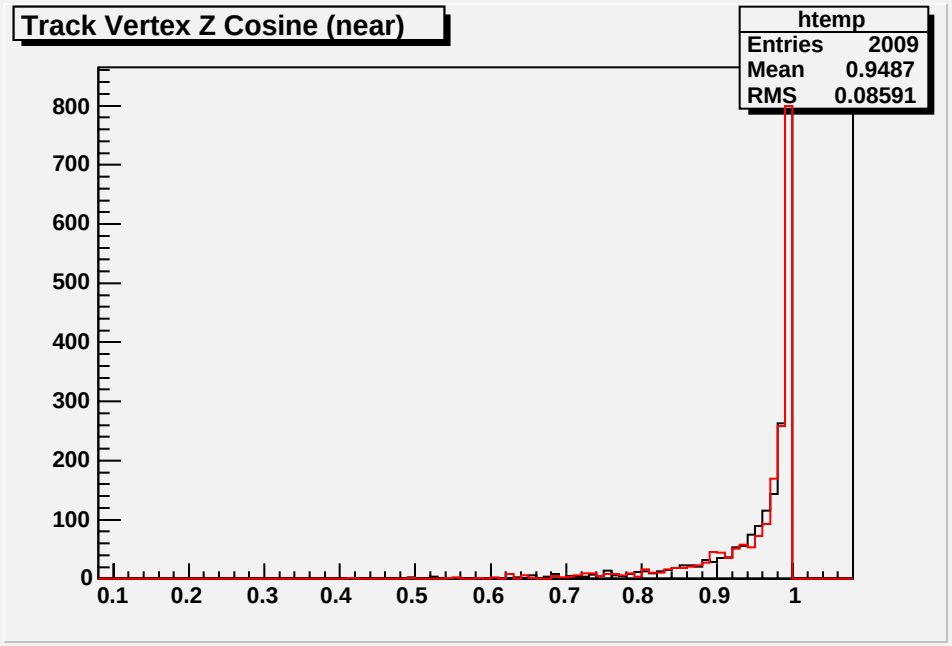
Track Vertex Y (Near Detector)

 # Entries 2648 / 2682

Mean 0.063845 / 0.067986

RMS 0.926617 / 0.927189





Track Vertex Z Cosine(Far Detector)

 # Entries 1628 / 1581

Mean 0.918953 / 0.926155

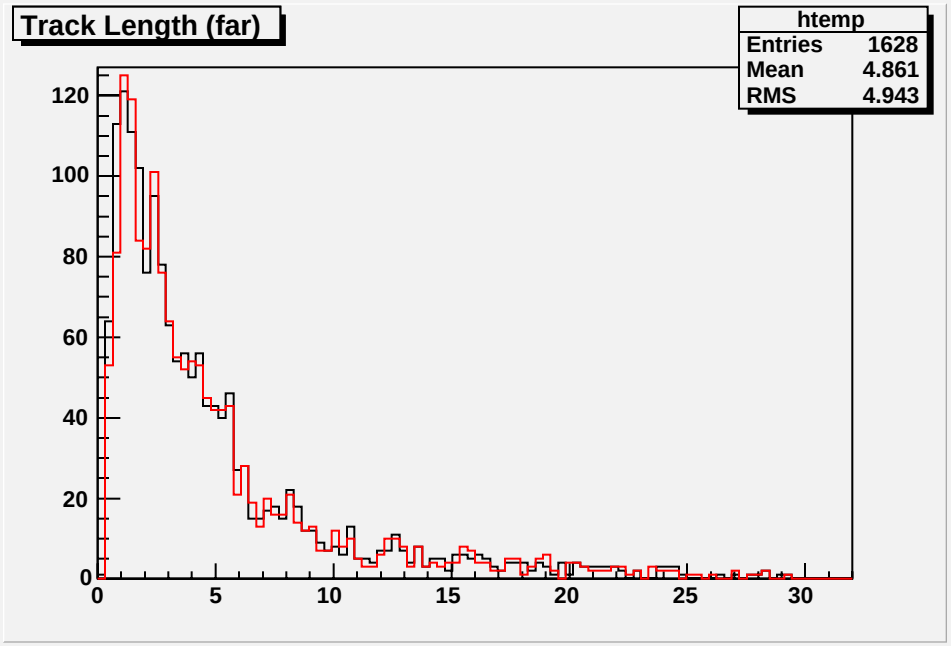
RMS 0.117093 / 0.100610

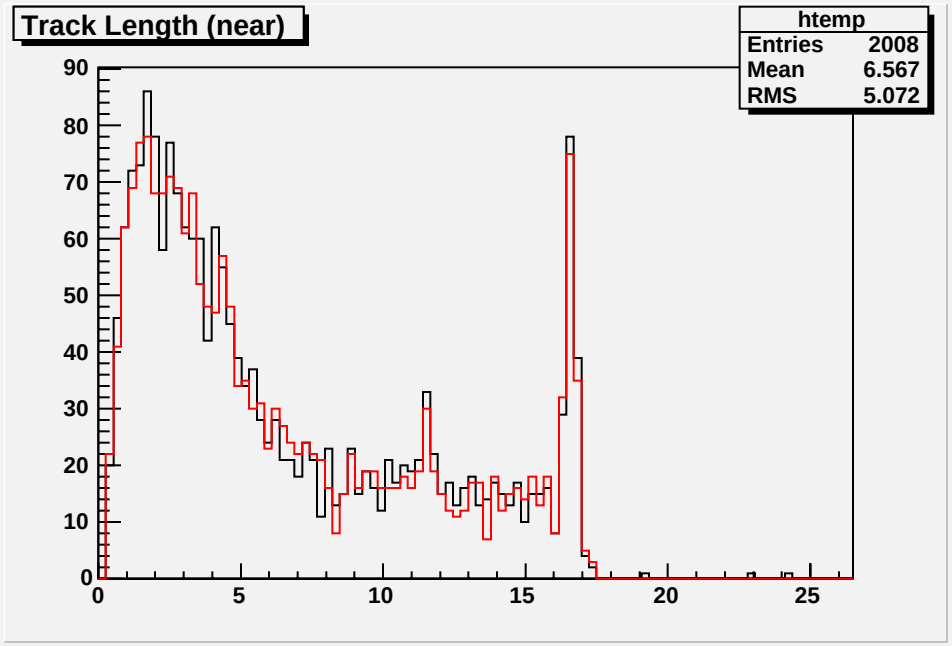
Track Vertex Z Cosine (Near)

 # Entries 2009 / 1968

Mean 0.948667 / 0.945983

RMS 0.085914 / 0.092629





Track Length (Far Detector)

 # Entries 1628 / 1581

Mean 4.860744 / 4.974985

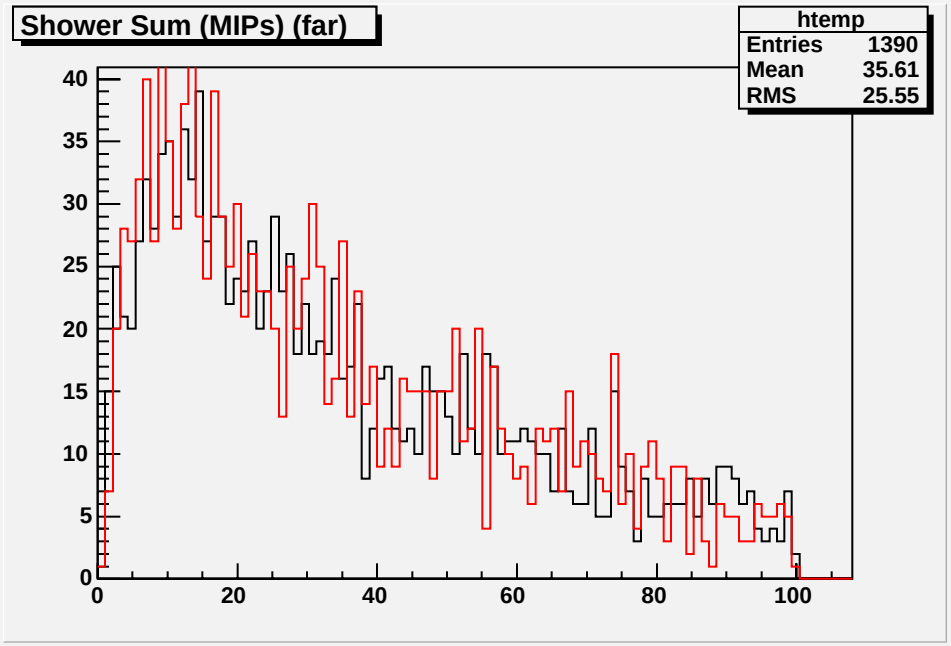
RMS 4.943468 / 5.003582

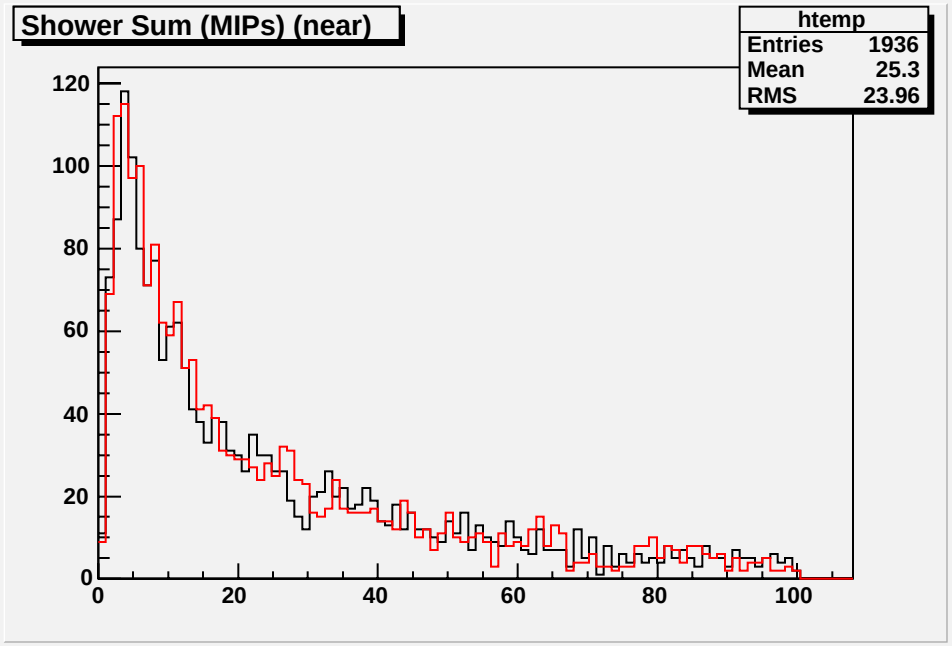
Track Length (Near Detector)

 # Entries 2008 / 1967

Mean 6.567485 / 6.526538

RMS 5.072013 / 5.033543





Shower Sum MIPs (Far)

 # Entries 1390 / 1434

Mean 35.608449 / 34.906533

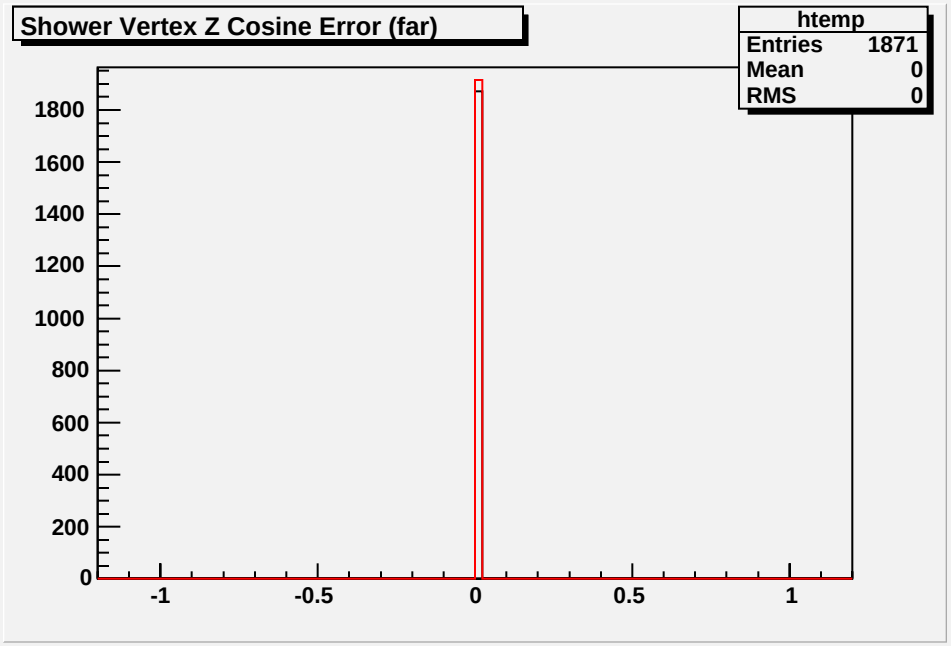
RMS 25.546363 / 25.115196

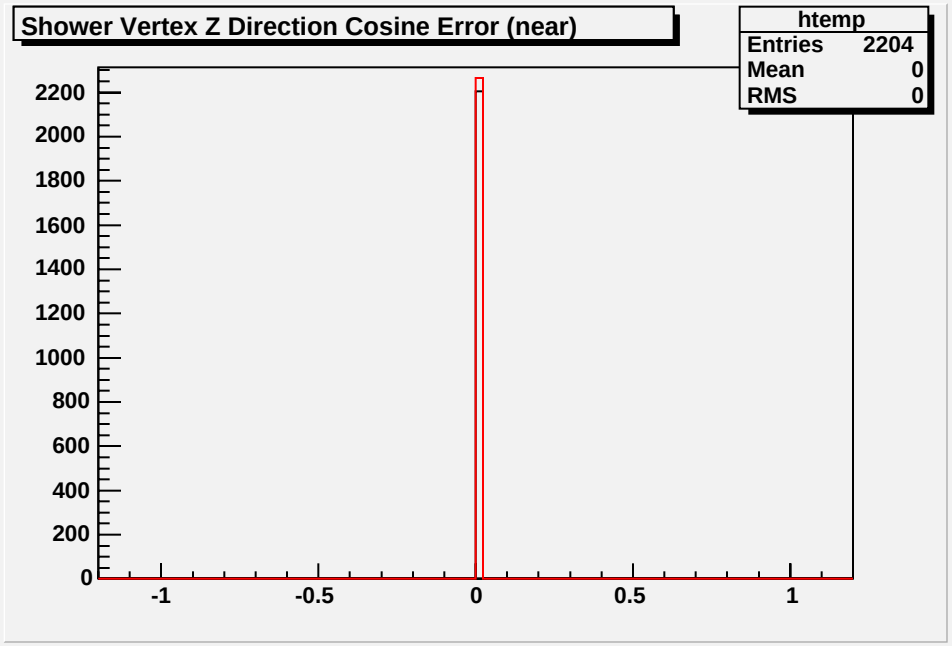
Shower Sum MIPs (Near)

 # Entries 1936 / 1977

Mean 25.297391 / 24.323695

RMS 23.962366 / 23.417984





Entries 1871 / 1914

Mean 0.000000 / 0.000000

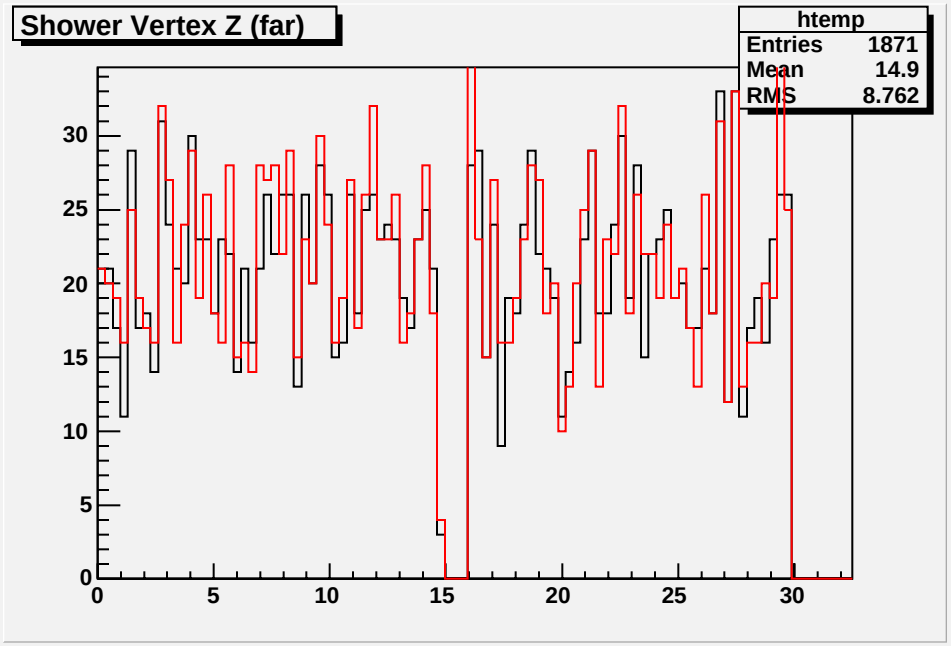
RMS 0.000000 / 0.000000

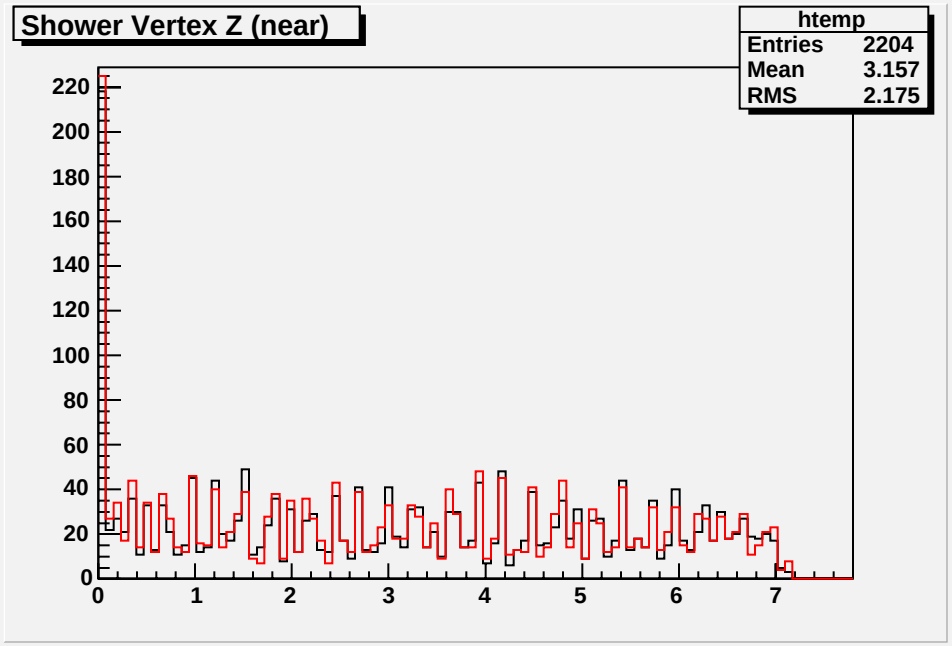
Shower Vertex Z Cosine Error (Near)

Entries 2204 / 2266

Mean 0.000000 / 0.000000

RMS 0.000000 / 0.000000





Shower Vertex Z (Far Detector)

 # Entries 1871 / 1871

Mean 14.901022 / 0.000000

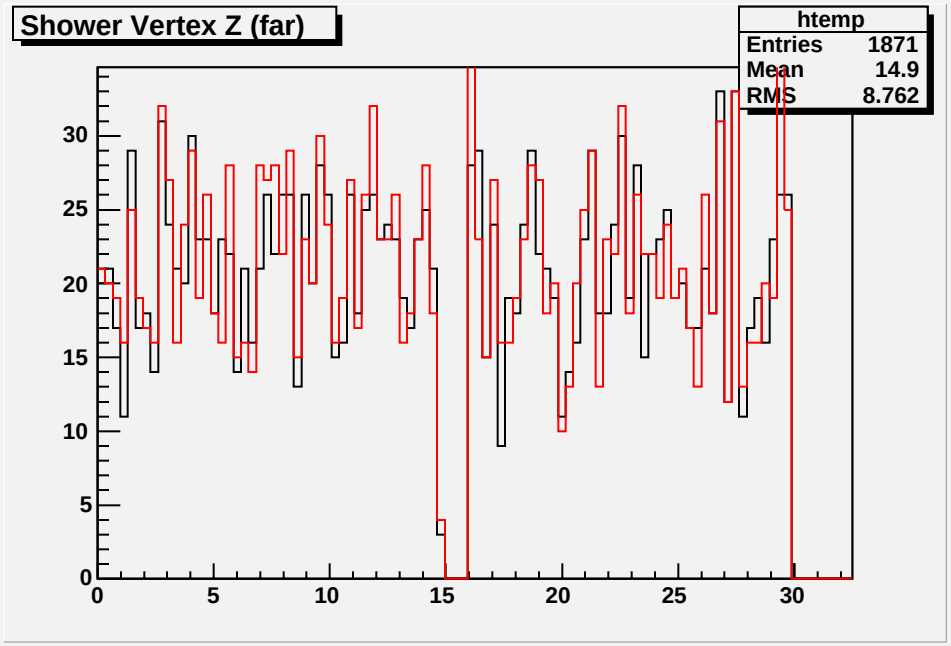
RMS 8.761677 / 0.000000

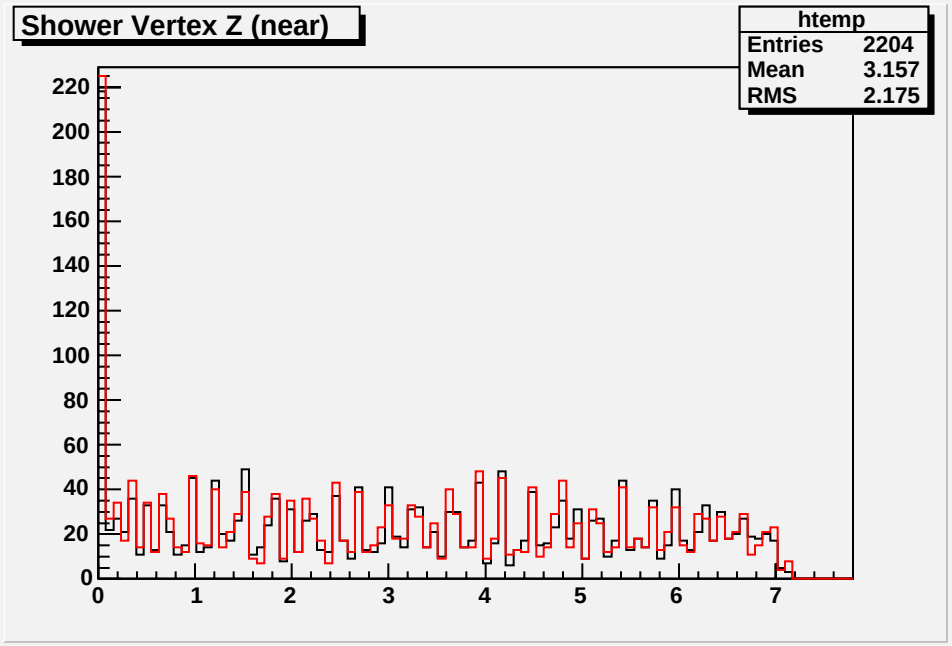
Shower Vertex Z(Near Detector)

 # Entries 1871 / 2266

Mean 14.901022 / 3.110583

RMS 8.761677 / 2.174704





Shower Vertex Z (Far Detector)

 # Entries 1871 / 1871

Mean 14.901022 / 0.000000

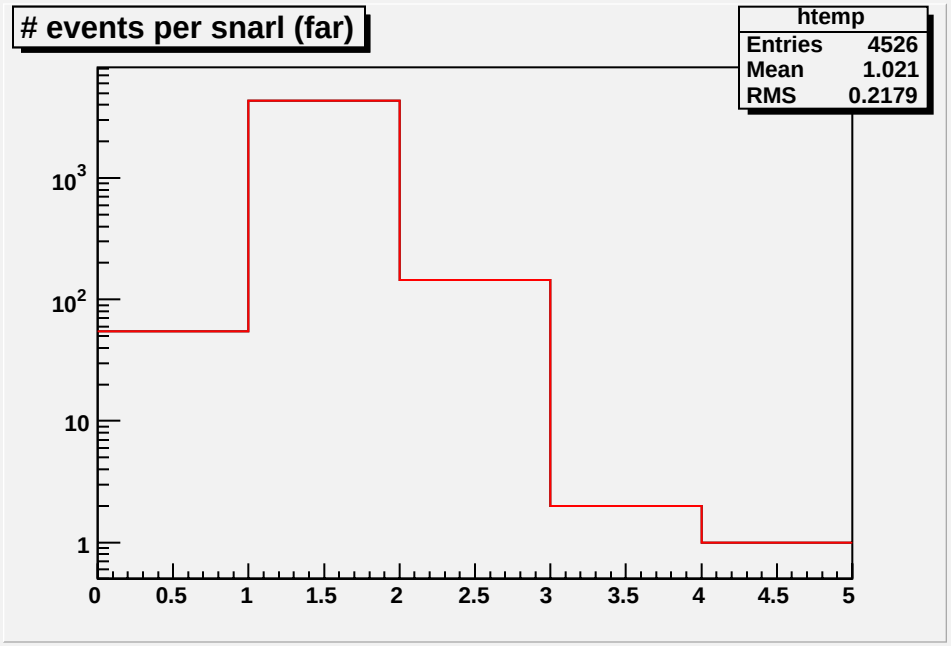
RMS 8.761677 / 0.000000

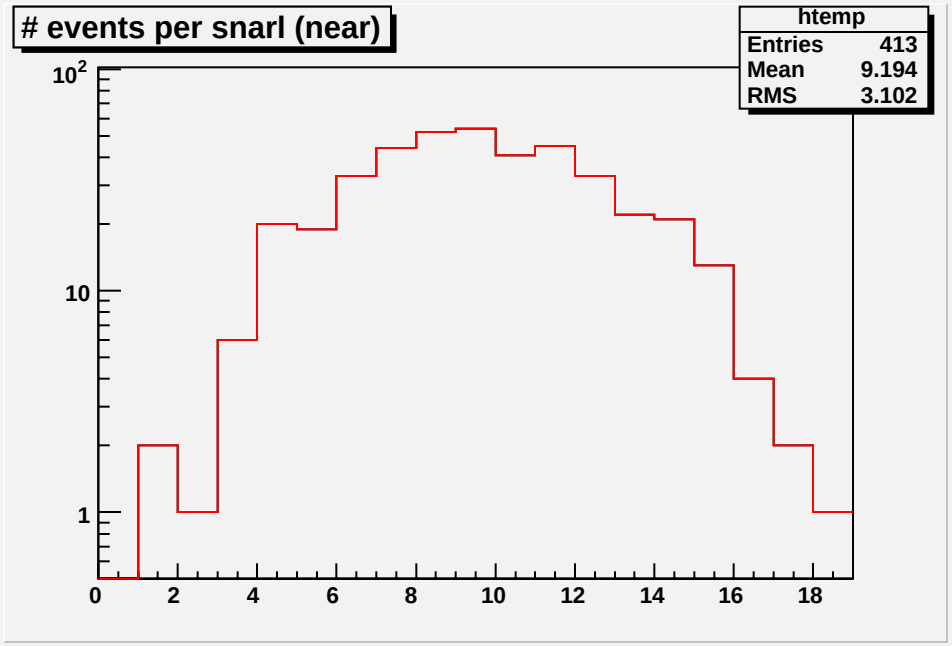
Shower Vertex Z(Near Detector)

 # Entries 1871 / 2266

Mean 14.901022 / 3.110583

RMS 8.761677 / 2.174704





 # Events/Snarl (Far Detector)

 # Entries 4526 / 4526

Mean 1.021432 / 1.021432

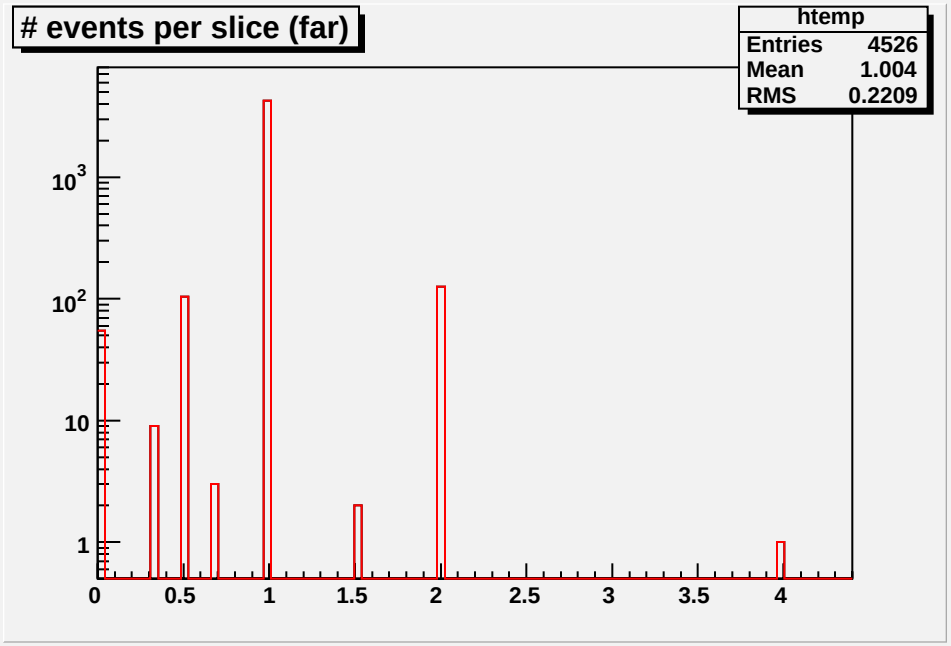
RMS 0.217913 / 0.217913

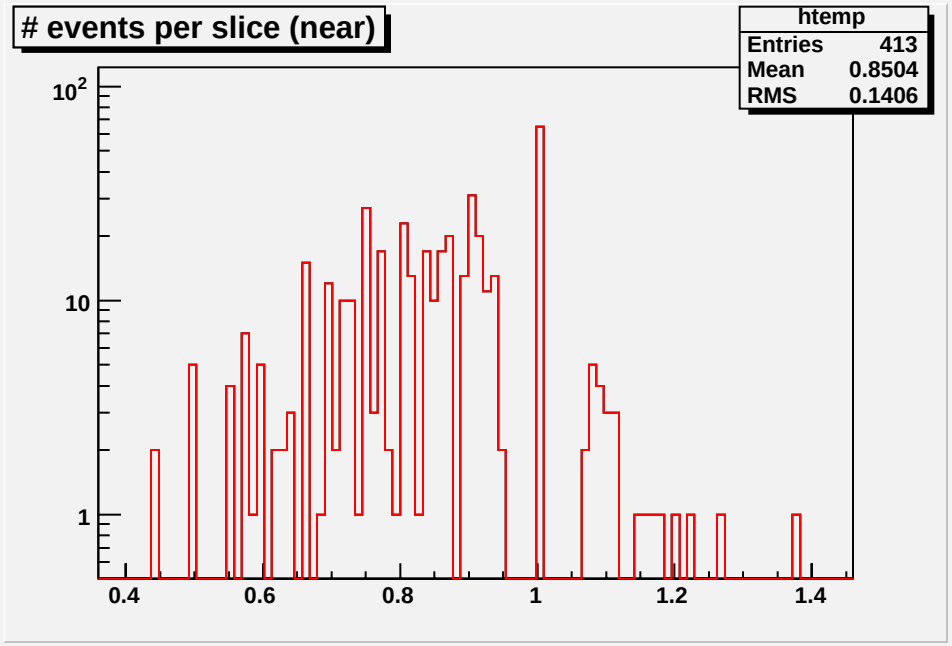
 # Events/Snarl (Near Detector)

 # Entries 413 / 413

Mean 9.193705 / 9.193705

RMS 3.102176 / 0.000000





 # Events/Slice (Far Detector)

 # Entries 4526 / 4526

Mean 1.003535 / 1.003535

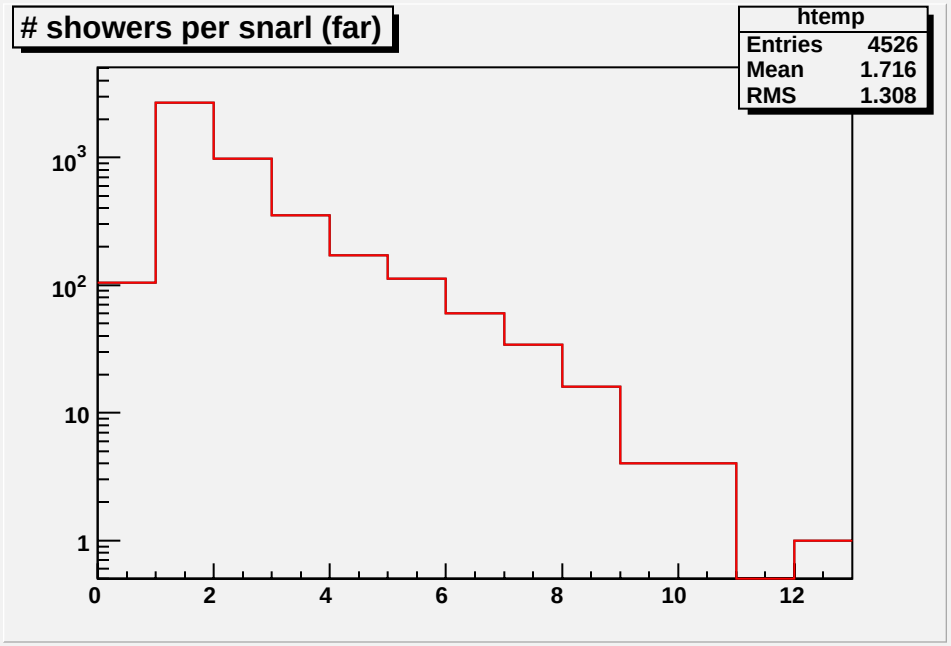
RMS 0.220861 / 0.220861

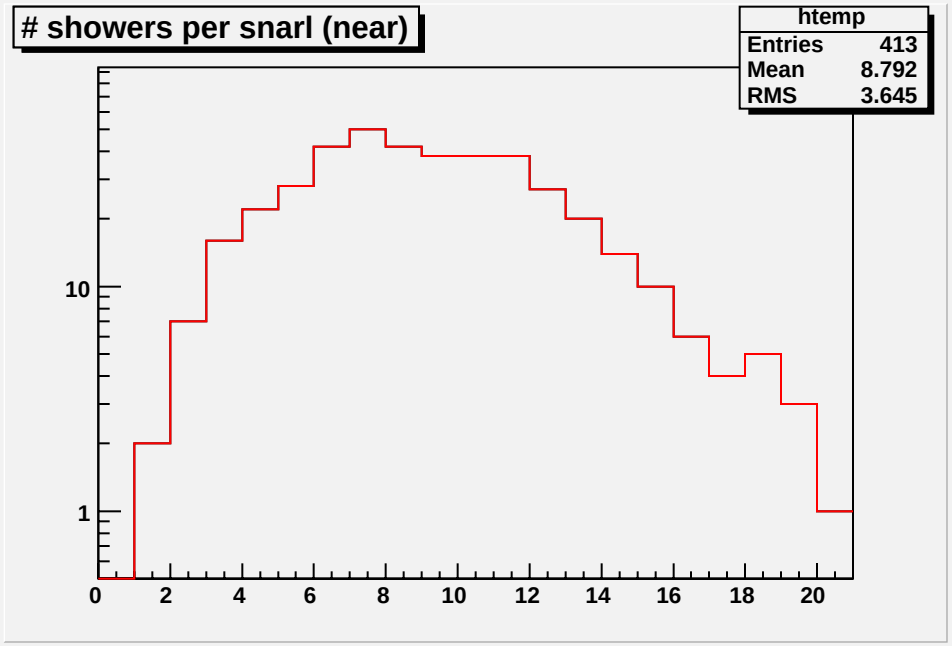
 # Events/Slice (Near Detector)

 # Entries 413 / 413

Mean 0.850383 / 0.850383

RMS 0.140649 / 0.140649





 # Showers/Snarl (Far Detector)

 # Entries 4526 / 4526

Mean 1.716085 / 1.716085

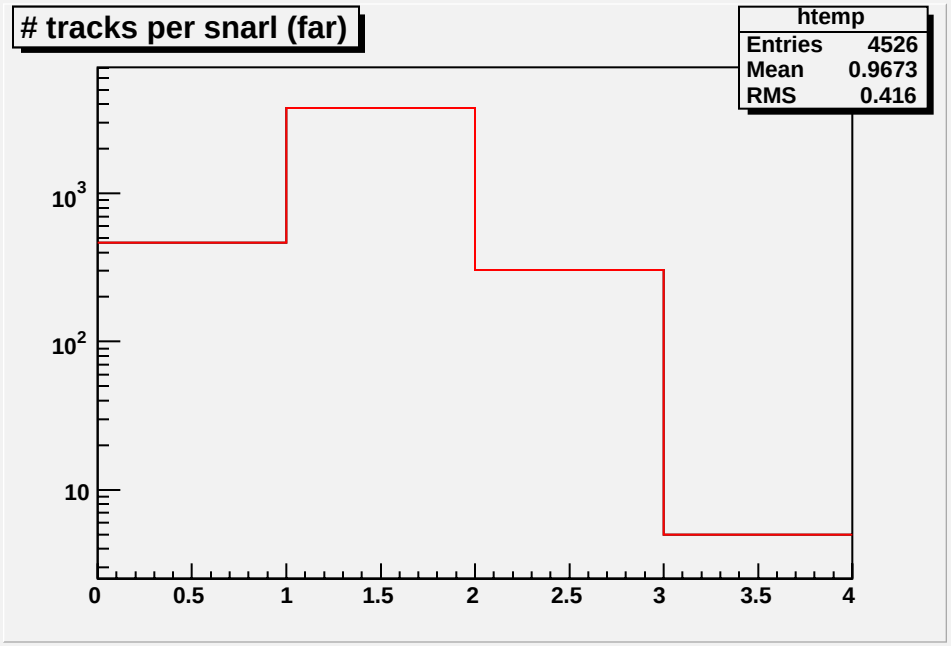
RMS 1.307561 / 1.307561

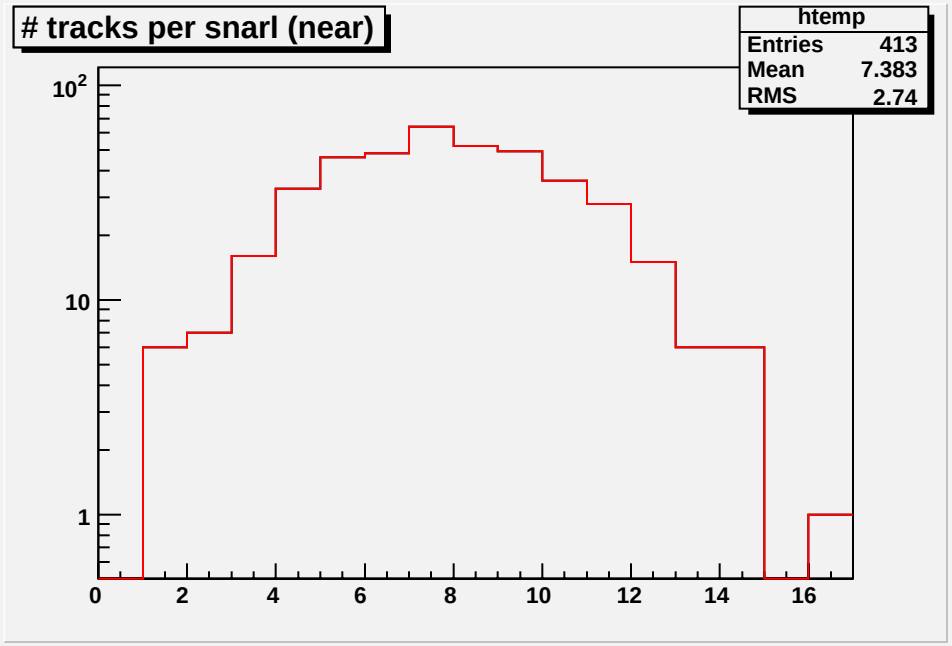
 # Showers/Snarl (Near Detector)

 # Entries 413 / 413

Mean 8.791768 / 8.791768

RMS 3.644656 / 3.644656





 # Tracks/Snarl (Far Detector)

 # Entries 4526 / 4526

Mean 0.967300 / 0.967300

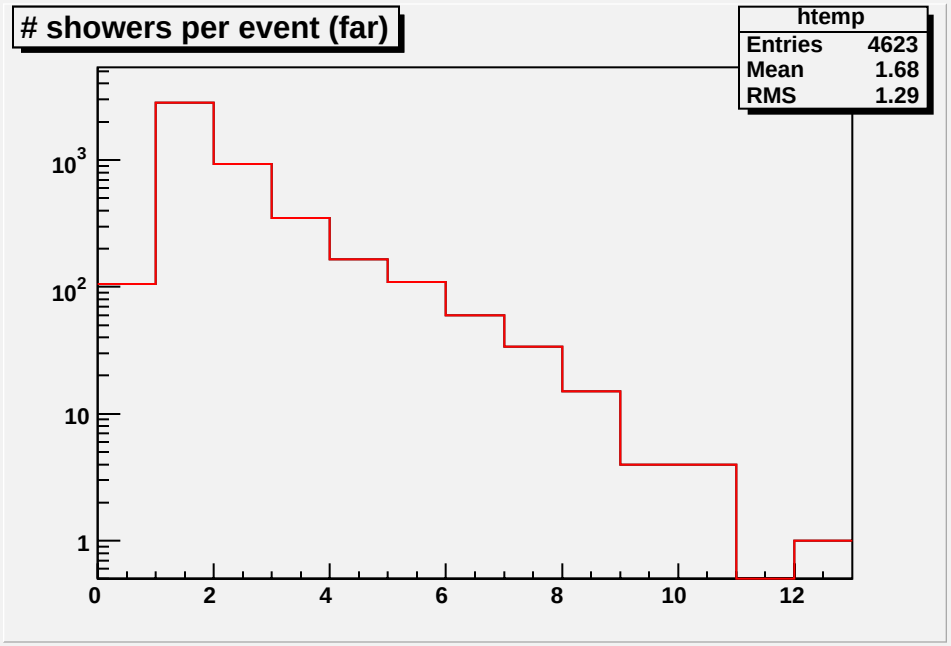
RMS 0.415976 / 0.415976

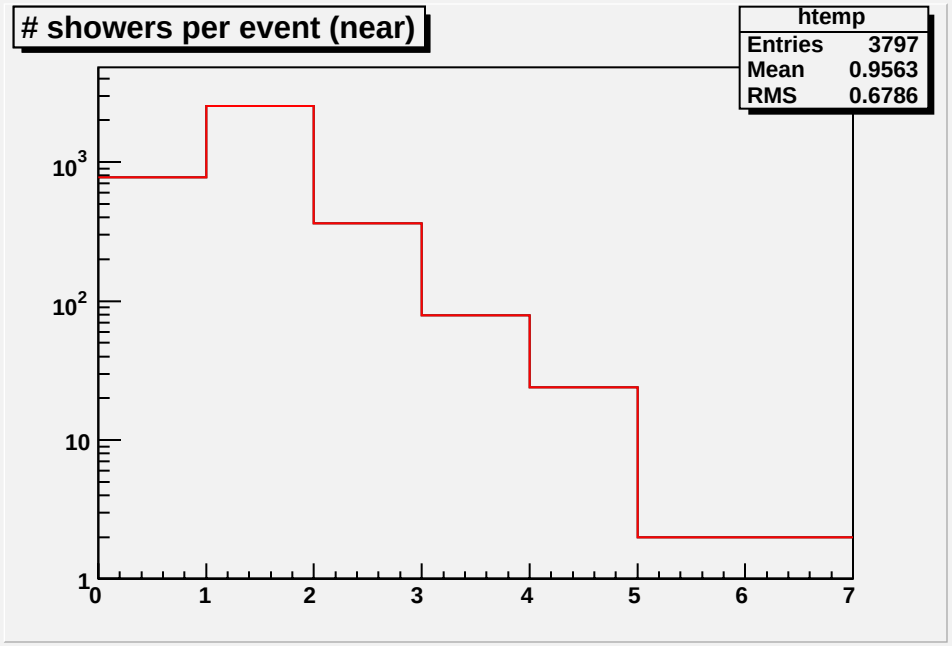
 # Tracks/Snarl (Near Detector)

 # Entries 413 / 413

Mean 7.382567 / 7.382567

RMS 2.740405 / 2.740405





 # Showers/Event (Far Detector)

 # Entries 4623 / 4623

Mean 1.680078 / 1.680078

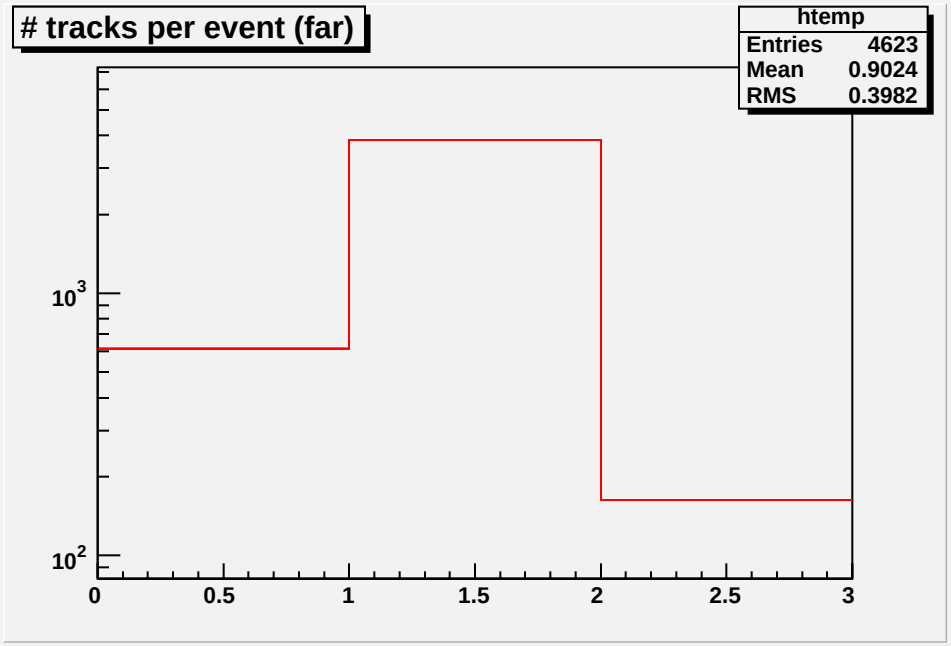
RMS 1.290394 / 1.290394

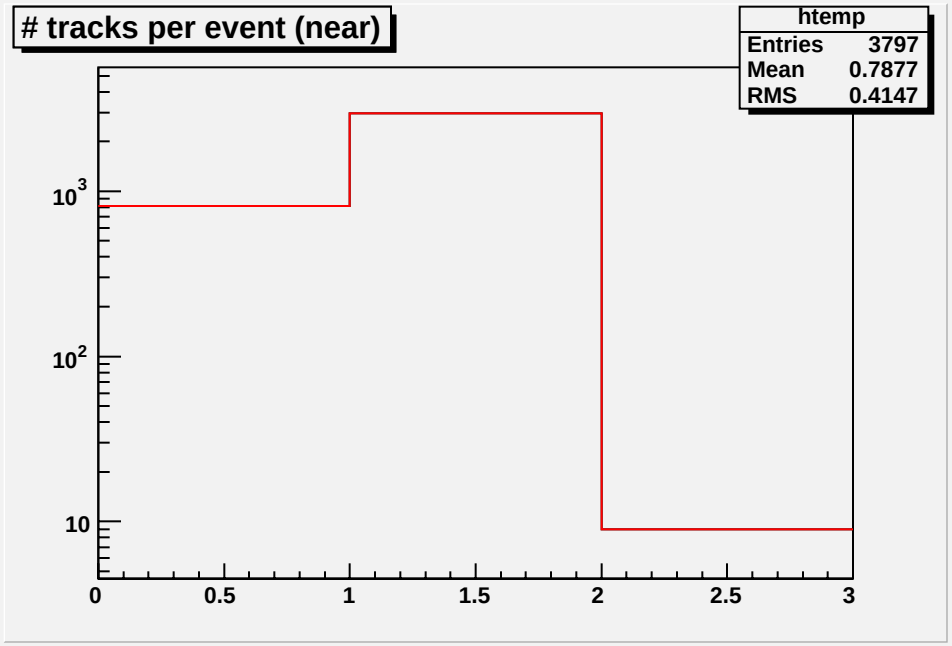
 # Showers/Event (Near Detector)

 # Entries 3797 / 3797

Mean 0.956281 / 0.956281

RMS 0.678645 / 0.678645





 # Tracks/Event (Far Detector)

 # Entries 4623 / 4623

Mean 0.902444 / 0.902444

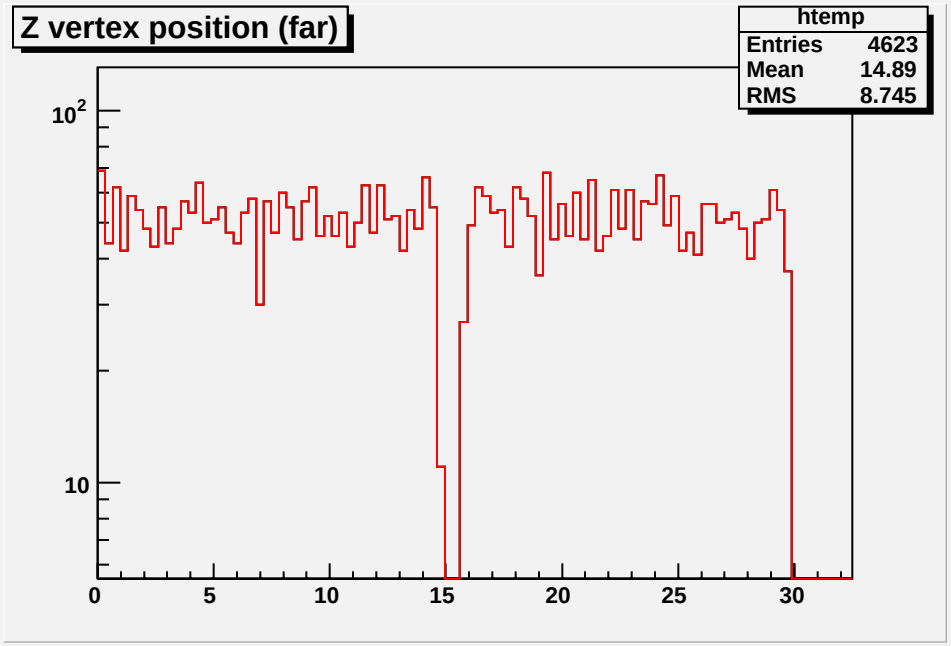
RMS 0.398190 / 0.398190

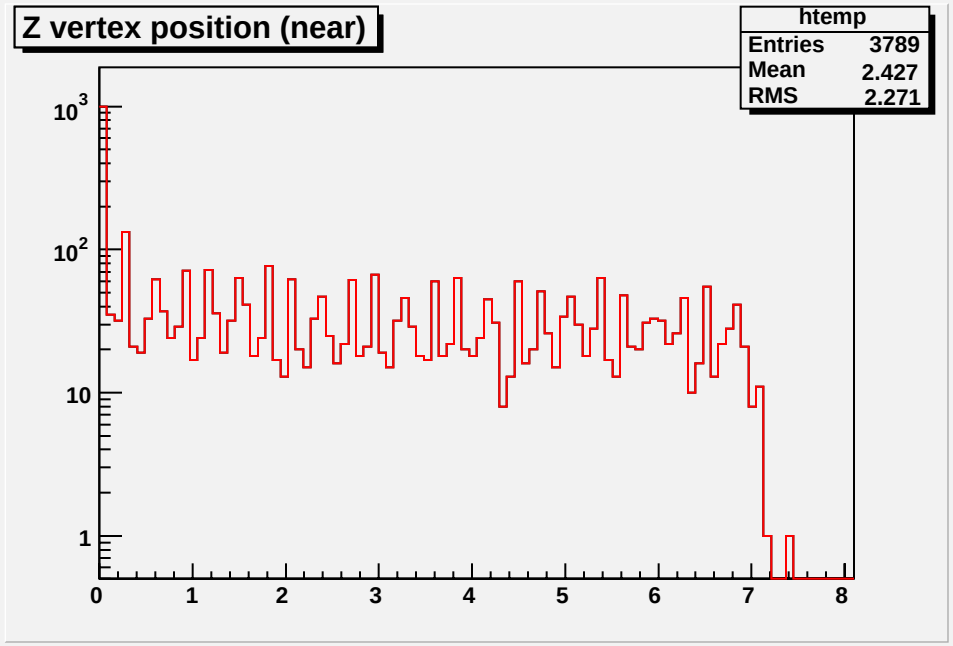
 # Tracks/Event (Near Detector)

 # Entries 3797 / 3797

Mean 0.787727 / 0.787727

RMS 0.414673 / 0.414673





Track Vertex Z (Far Detector)

 # Entries 4623 / 4623

Mean 14.888734 / 14.888734

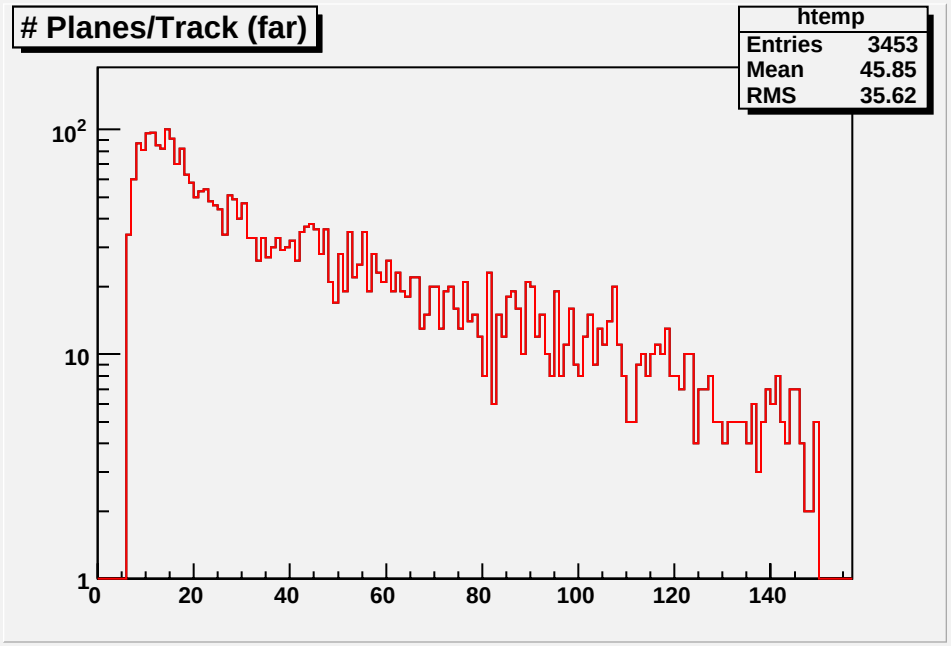
RMS 8.744846 / 8.744846

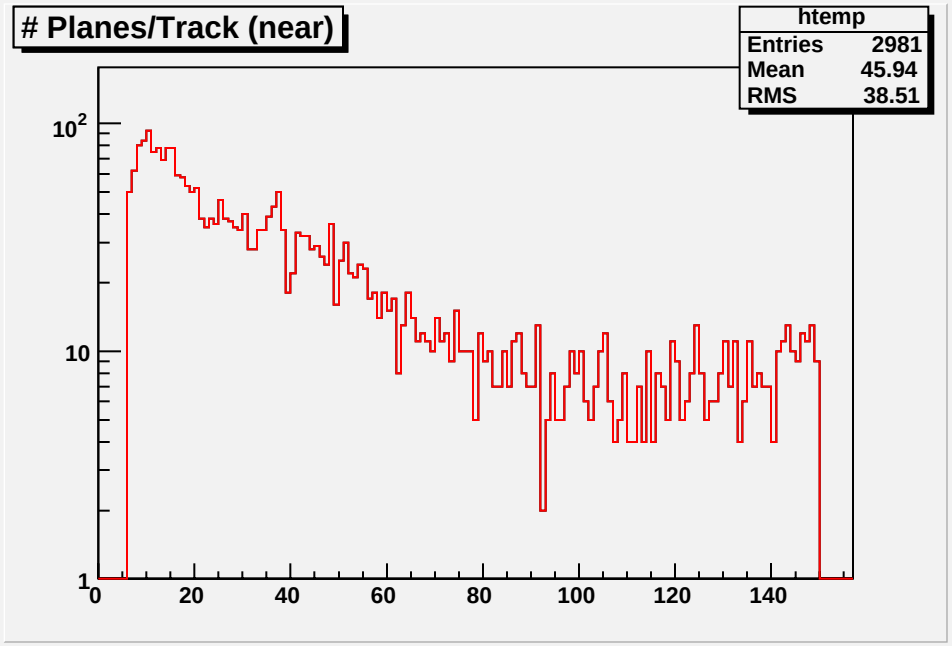
Track Vertex Z (Near Detector)

 # Entries 3789 / 3789

Mean 2.427350 / 2.427350

RMS 2.270741 / 2.270741





 # Planes/Track(Far Detector)

 # Entries 3453 / 3453

Mean 45.845352 / 45.845352

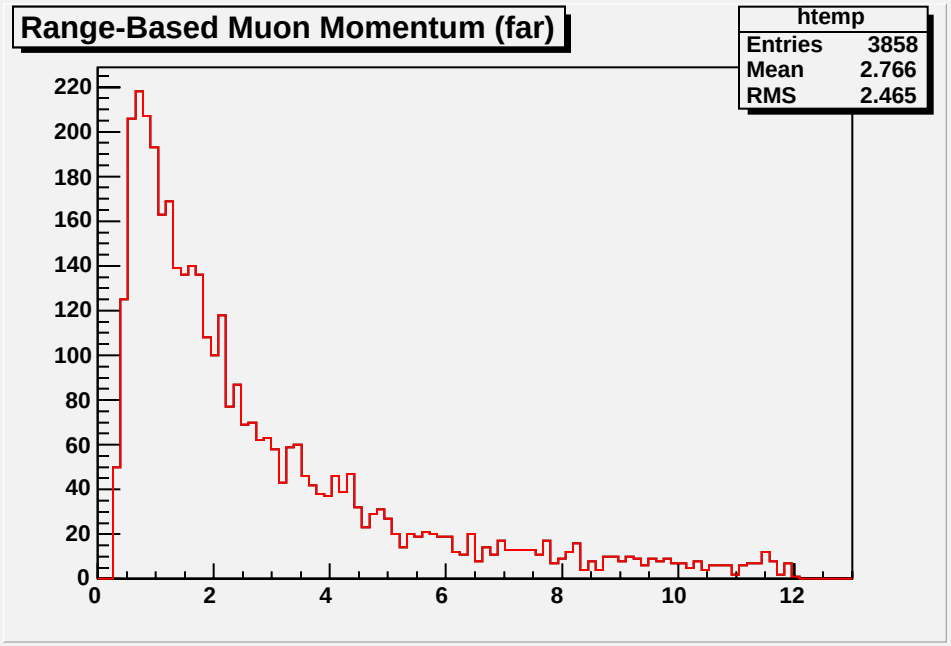
RMS 35.622304 / 35.622304

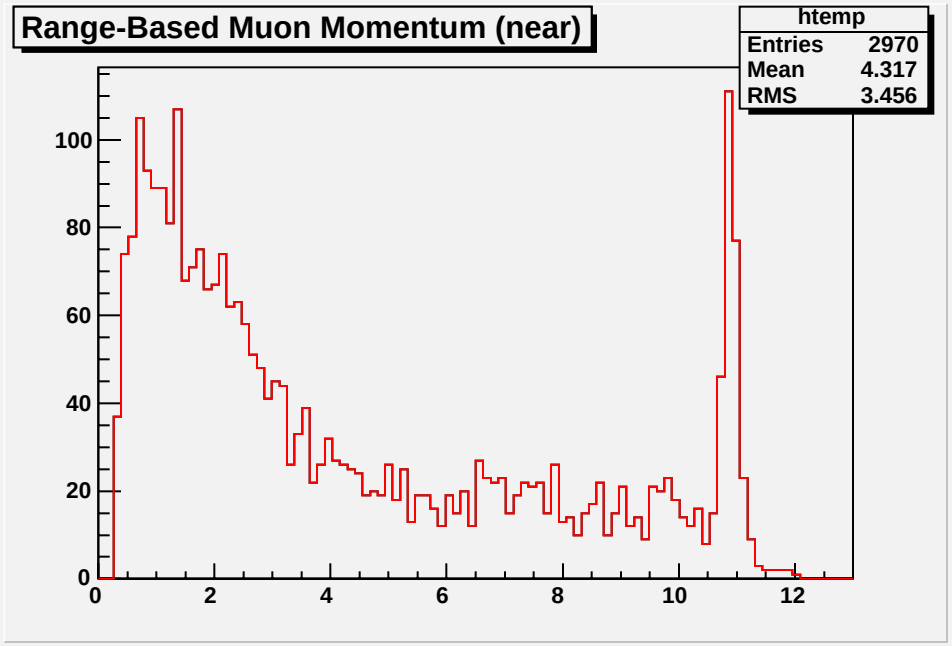
 # Planes/Track (Near Detector)

 # Entries 2981 / 2981

Mean 45.940288 / 45.940288

RMS 38.509610 / 38.509610





Range-based Momentum (Far Detector)

 # Entries 3858 / 3858

Mean 2.765753 / 2.765753

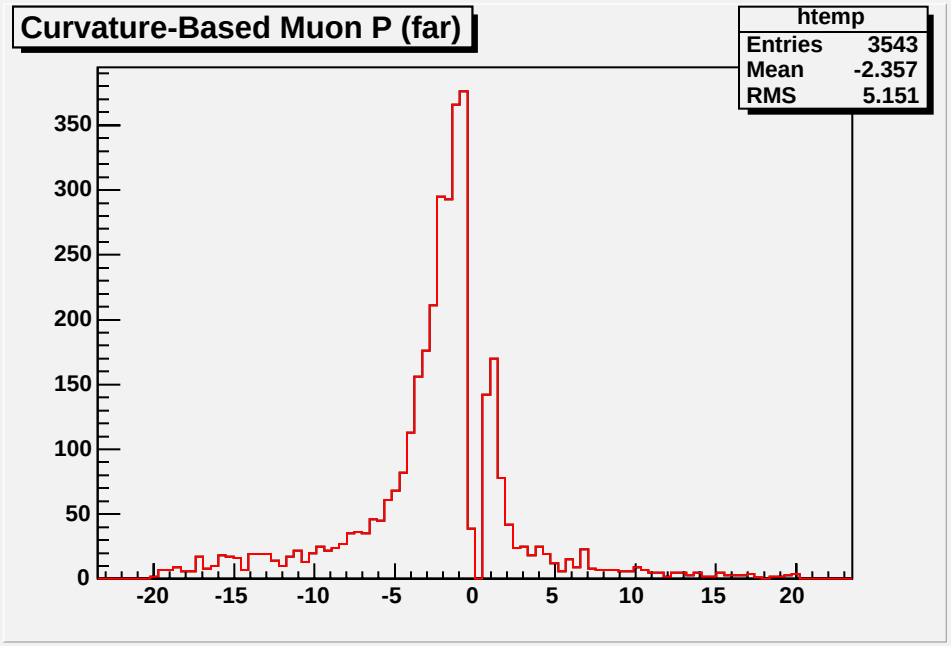
RMS 2.465436 / 2.465436

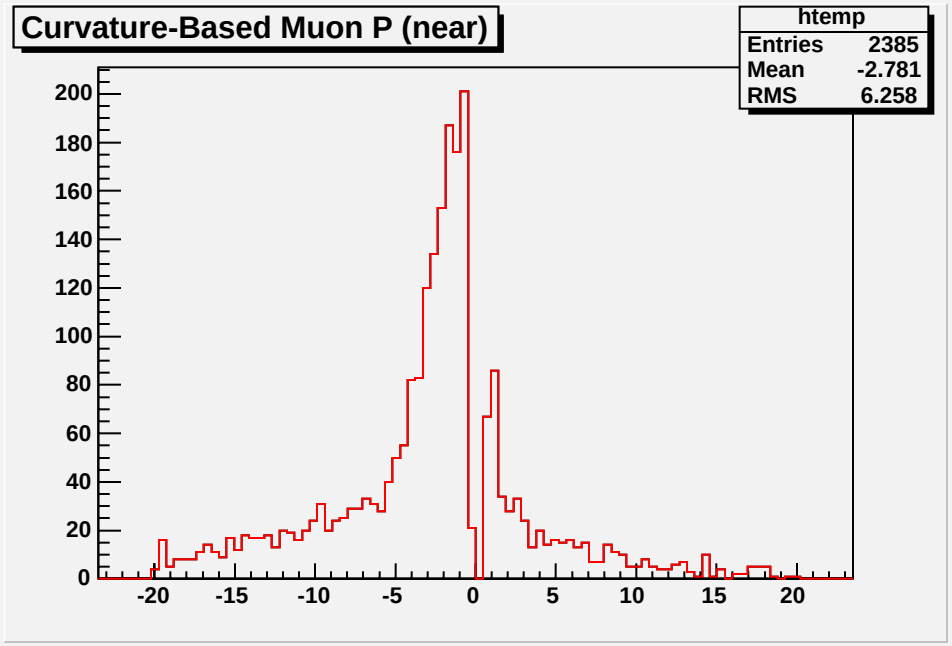
Range-based momentum (Near Detector)

 # Entries 2970 / 2970

Mean 4.316885 / 4.316885

RMS 3.456393 / 3.456393





Curvature-based momentum (Far Detector)

 # Entries 3543 / 3543

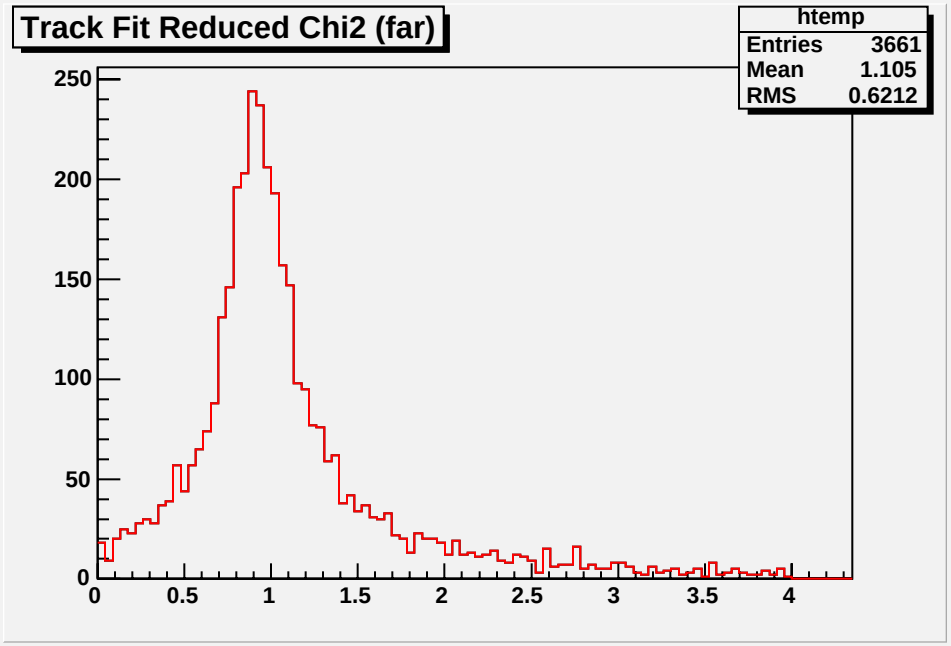
Mean -2.357018 / -2.357018

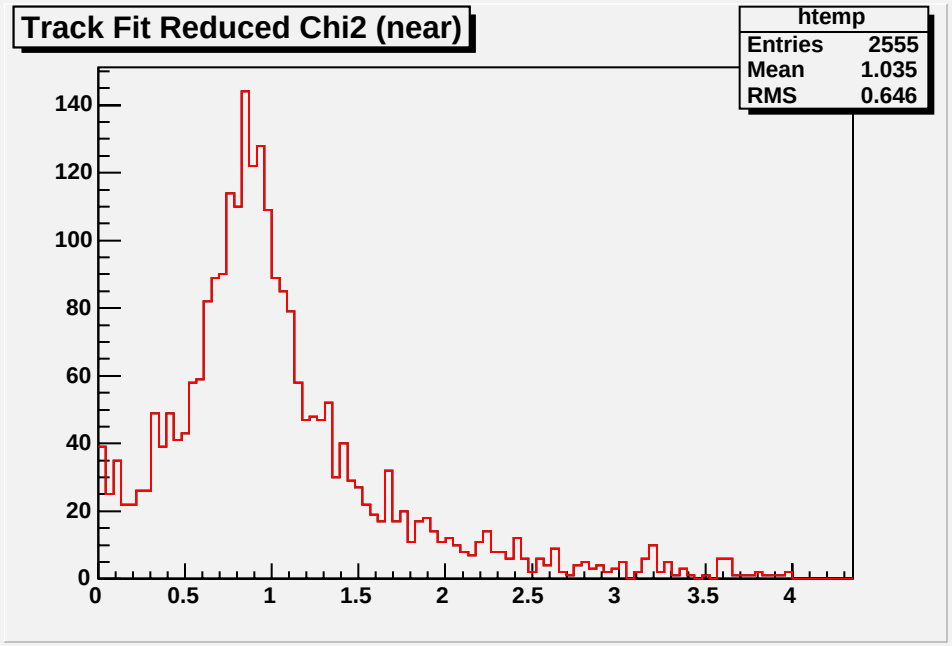
RMS 5.151317 / 5.151317

 # Entries 2385 / 2385

Mean -2.781215 / -2.781215

RMS 6.257910 / 6.257910





Track Fit Reduced Chi2 (Far Detector)

 # Entries 3661 / 3661

Mean 1.105006 / 1.105006

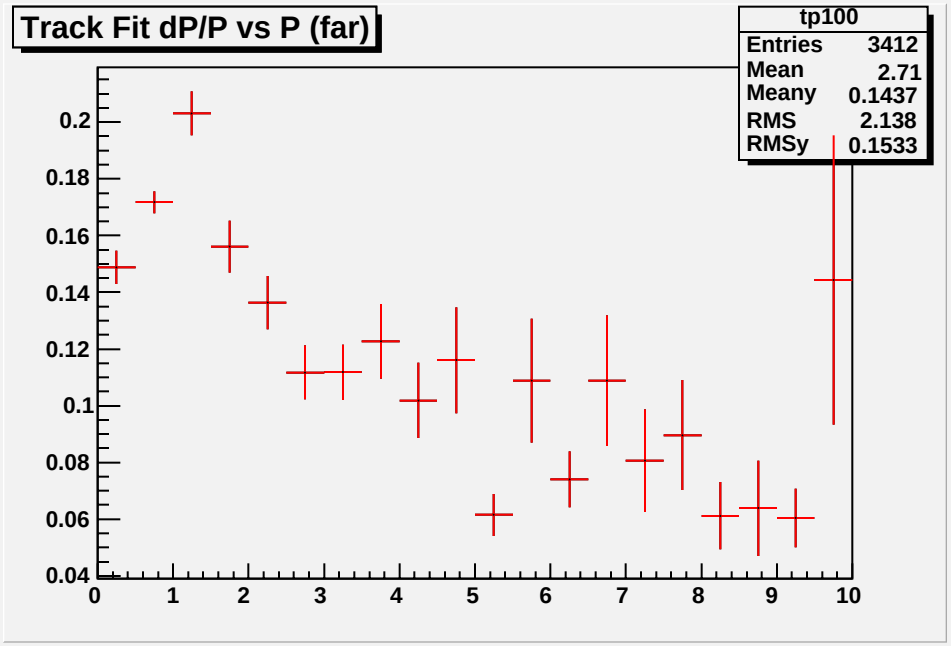
RMS 0.621191 / 0.621191

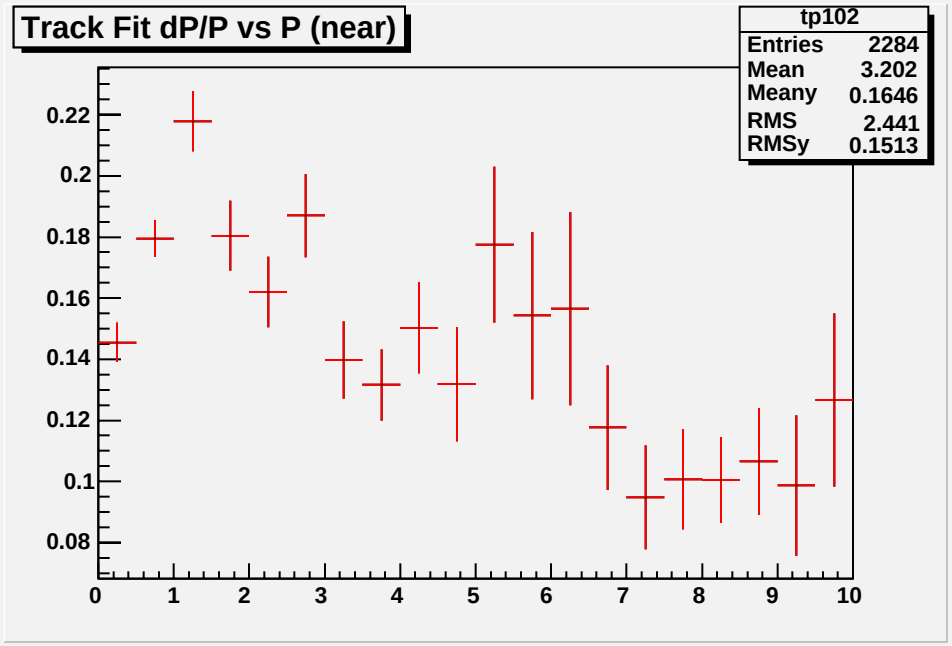
Track Fit Reduced Chi2 (Near Detector)

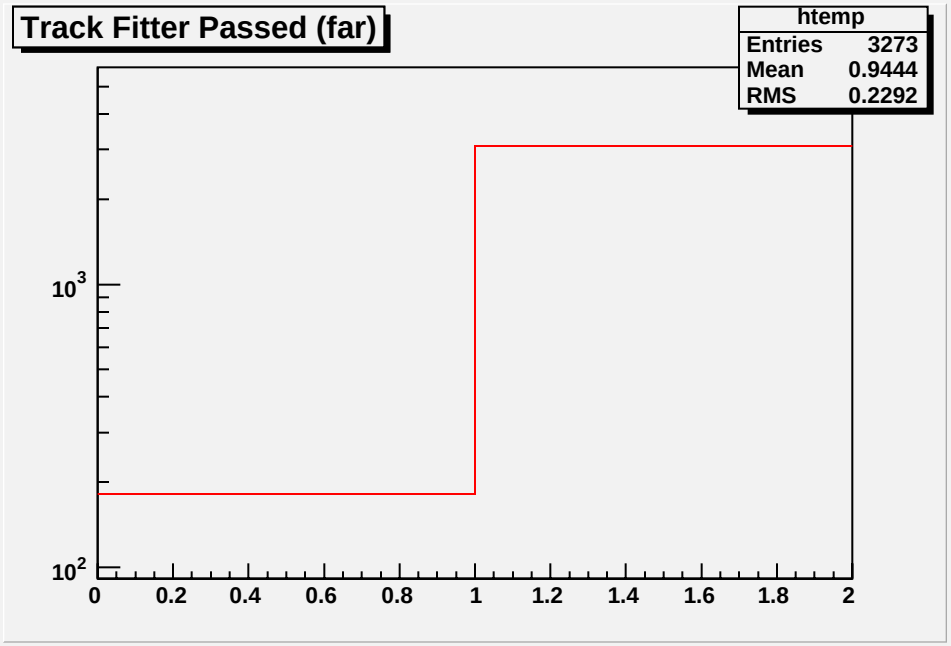
 # Entries 2555 / 2555

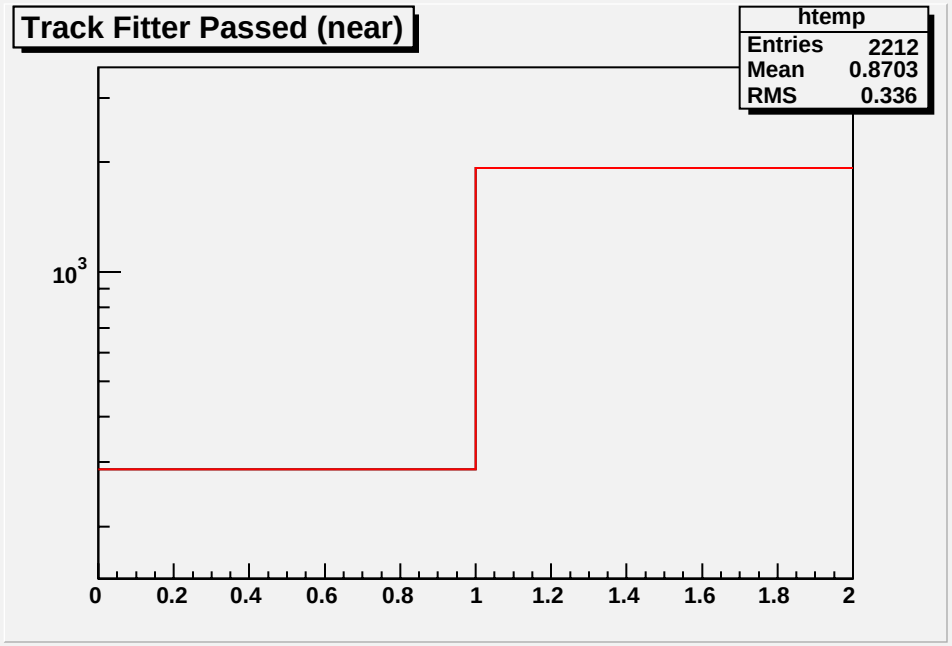
Mean 1.035475 / 1.035475

RMS 0.646041 / 0.646041


Track Fit dP/P vs P (far)
tp100
Entries 3412
Mean 2.71
Meany 0.1437
RMS 2.138
RMSy 0.1533
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0 1 2 3 4 5 6 7 8 9 10


Track Fit dP/P vs P (near)
tp102
Entries 2284
Mean 3.202
Meany 0.1646
RMS 2.441
RMSy 0.1513
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0 1 2 3 4 5 6 7 8 9 10





Track Fitter Passed (Far Detector)

 # Entries 3273 / 3273

Mean 0.944394 / 0.944394

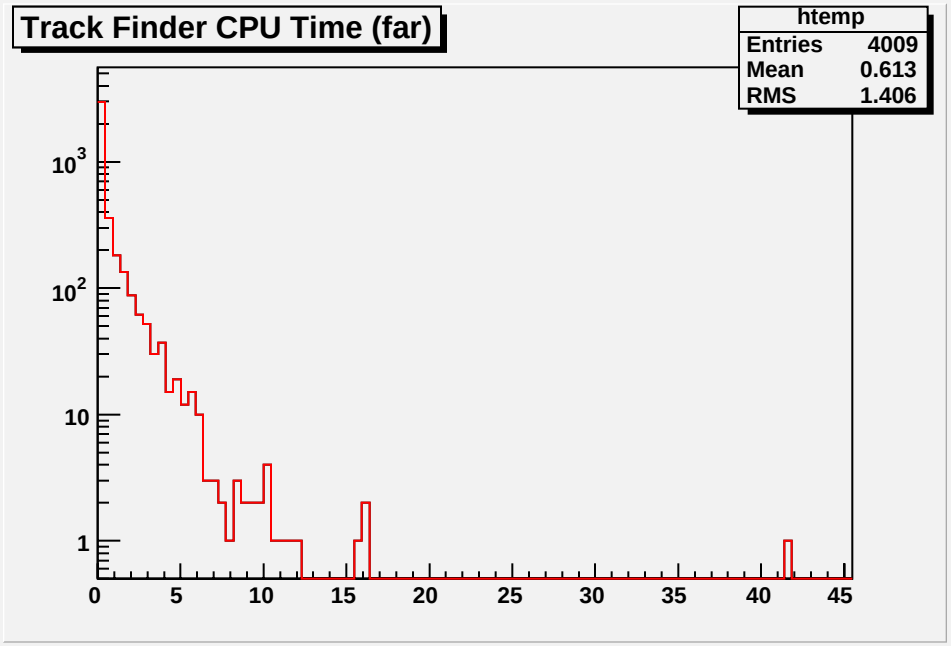
RMS 0.229160 / 0.229160

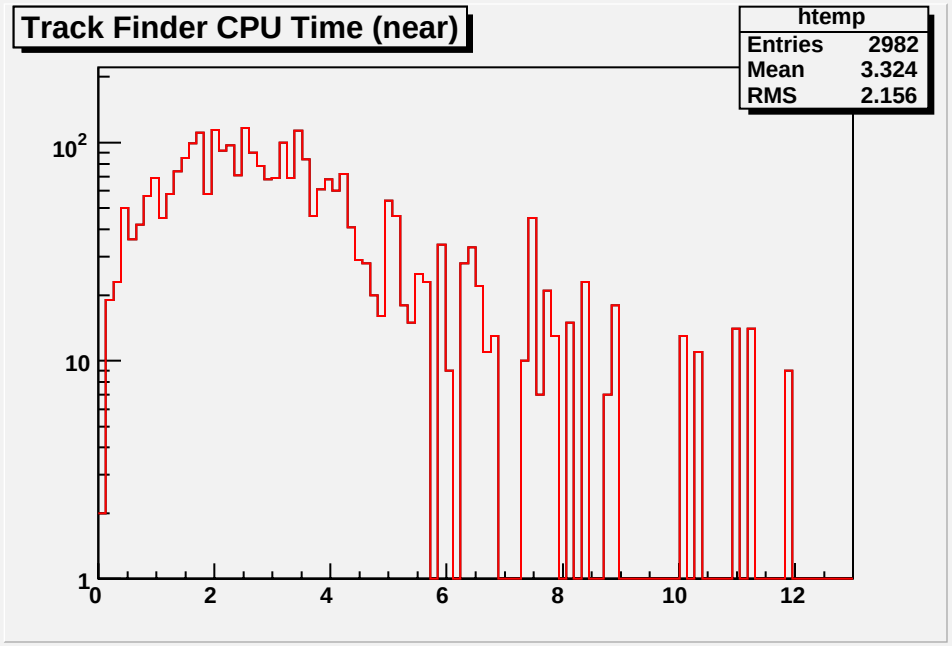
Track Fitter Passed (Near Detector)

 # Entries 2212 / 2212

Mean 0.870253 / 0.870253

RMS 0.336025 / 0.336025





Track Finder CPU Time (Far)

 # Entries 4009 / 2212

Mean 0.612978 / 0.612978

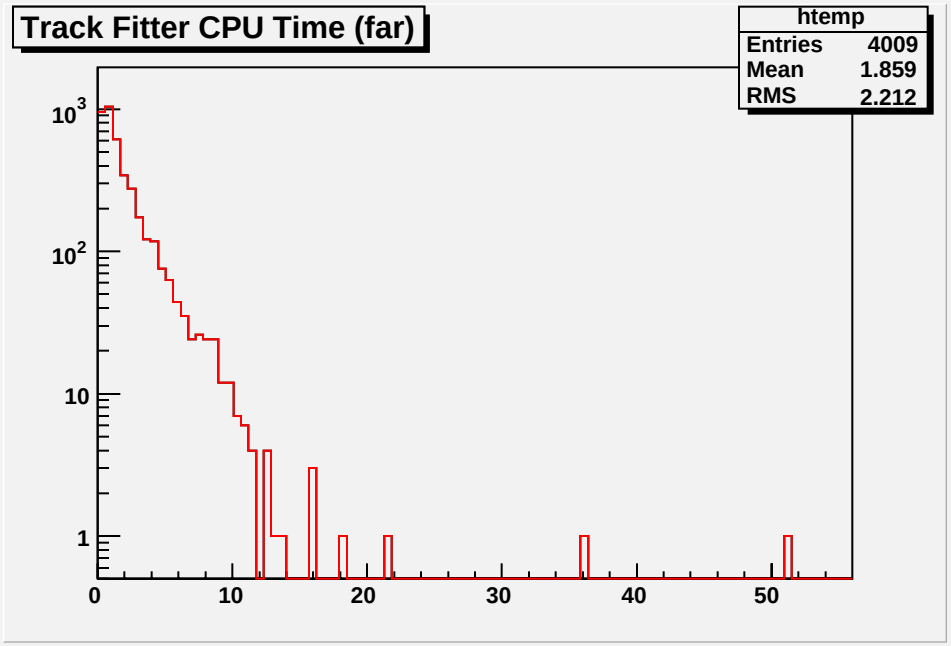
RMS 1.406494 / 1.406494

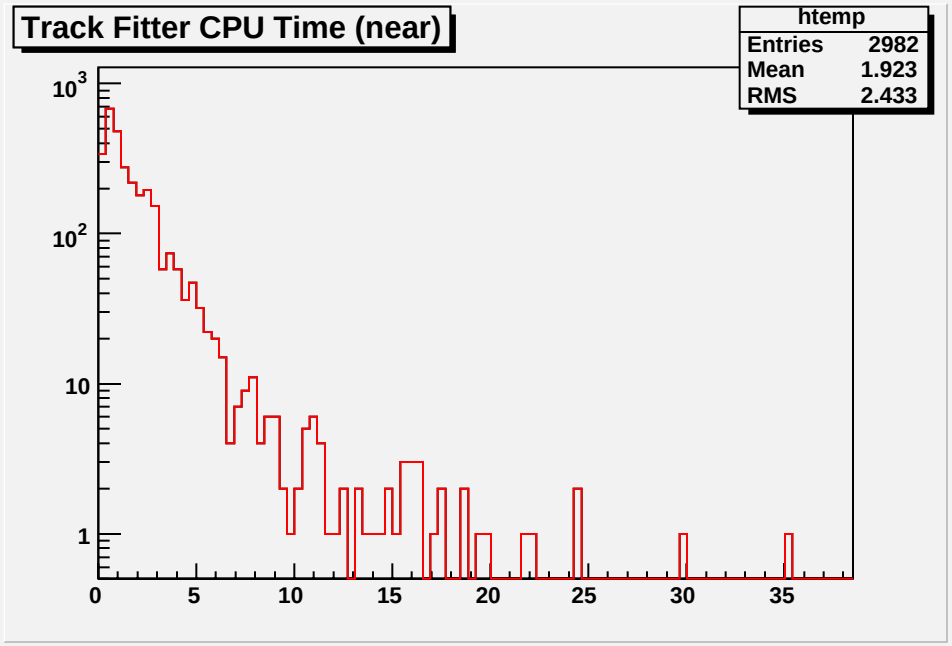
Track Finder CPU Time (Near)

 # Entries 2982 / 2212

Mean 3.324232 / 0.870253

RMS 2.155890 / 0.336025





Track Fitter CPU Time (Far)

 # Entries 4009 / 4009

Mean 1.858758 / 1.858758

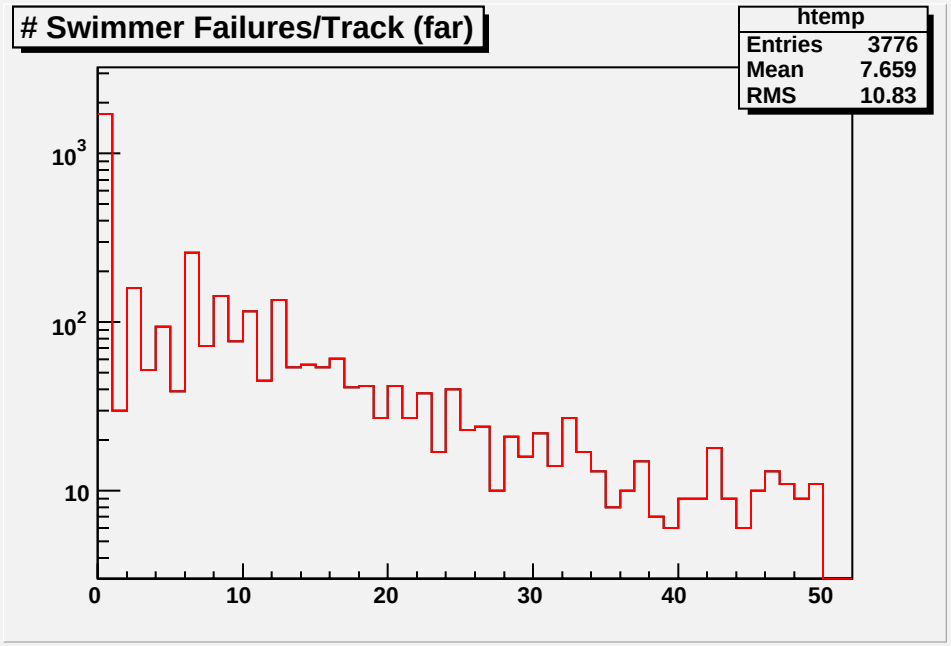
RMS 2.212498 / 2.212498

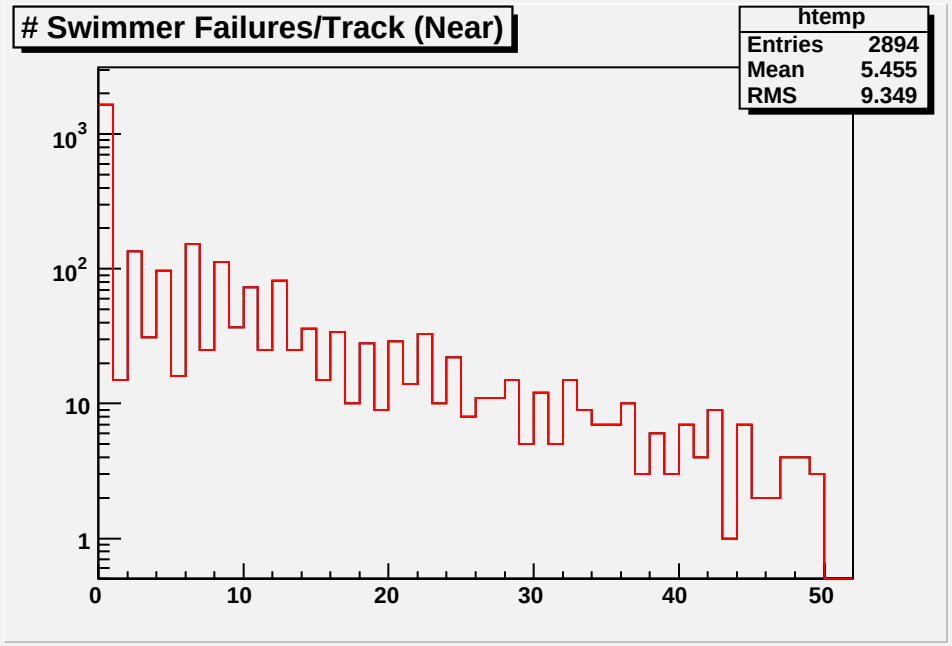
Track Fitter CPU Time (Near)

 # Entries 2982 / 2982

Mean 1.922532 / 1.922532

RMS 2.432803 / 2.432803





 # Swimmer Failures (Far)

 # Entries 3776 / 3776

Mean 7.659428 / 7.659428

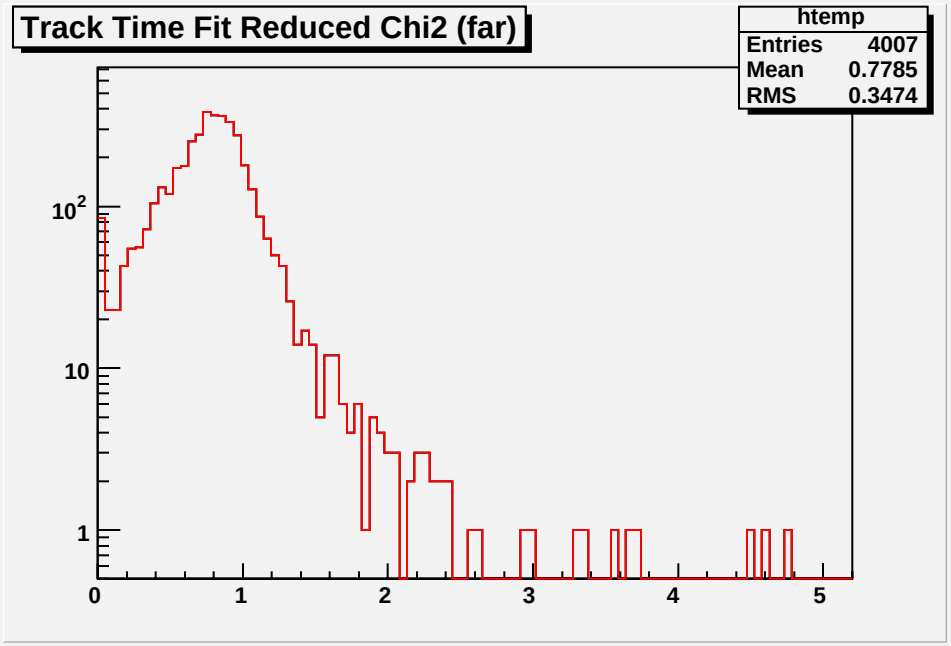
RMS 10.825416 / 10.825416

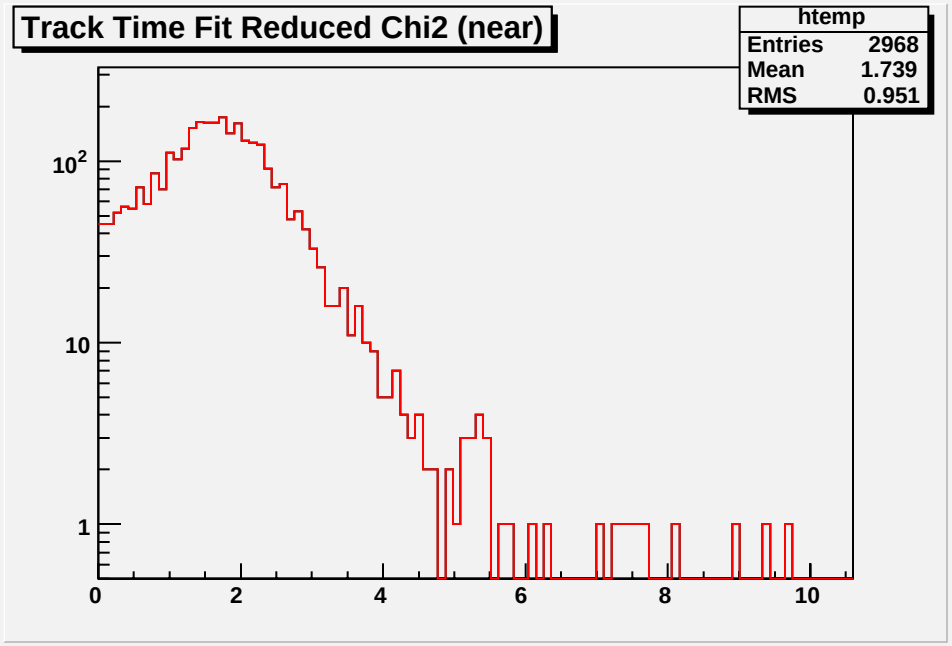
 # Swimmer Failures (Near)

 # Entries 2894 / 2894

Mean 5.455079 / 5.455079

RMS 9.348613 / 9.348613





Time Fit Reduced Chi2 (Far Detector)

 # Entries 4007 / 4007

Mean 0.778502 / 0.778502

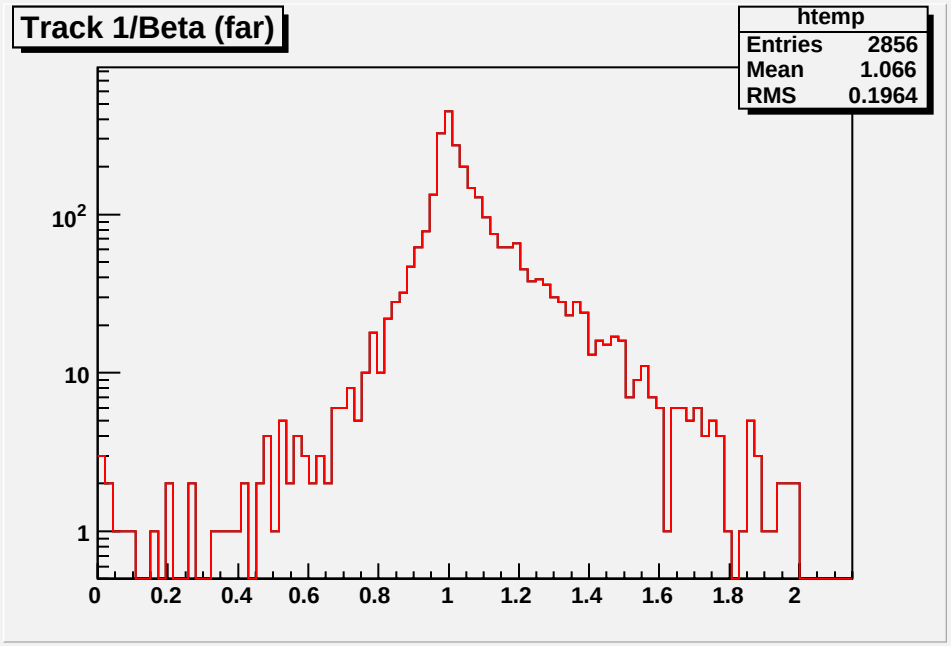
RMS 0.347408 / 0.347408

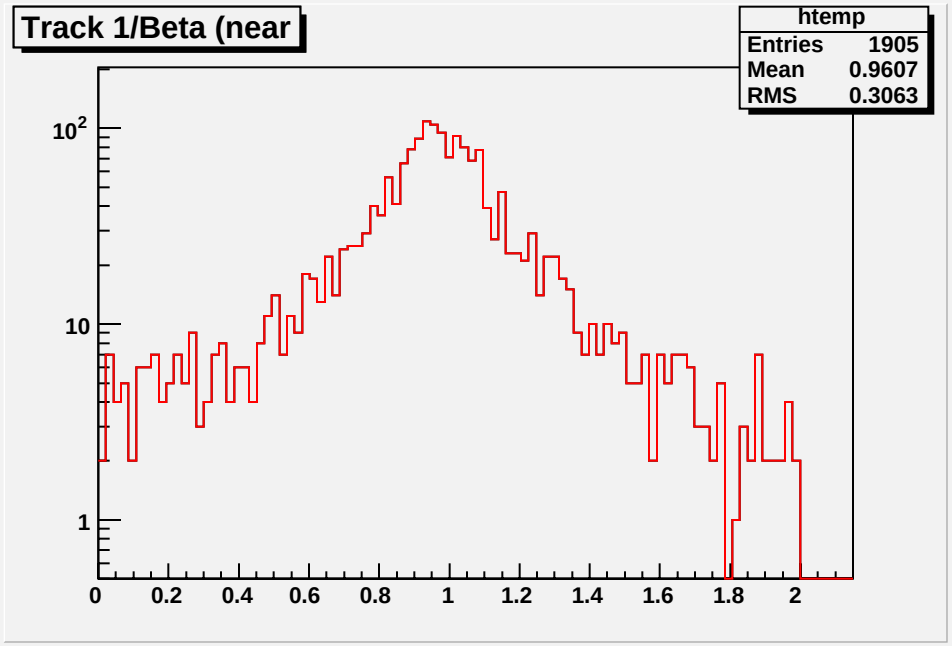
Time Fit Reduced Chi2 (Near Detector)

 # Entries 2968 / 2968

Mean 1.738591 / 1.738591

RMS 0.951048 / 0.951048





1/beta (Far Detector)

 # Entries 2856 / 2856

Mean 1.065629 / 1.065629

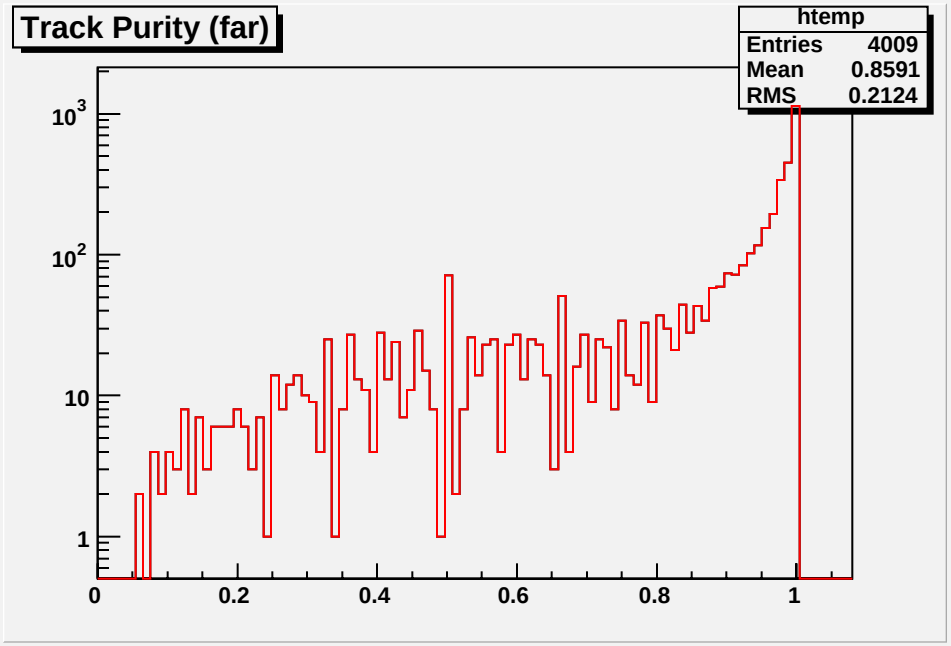
RMS 0.196380 / 0.196380

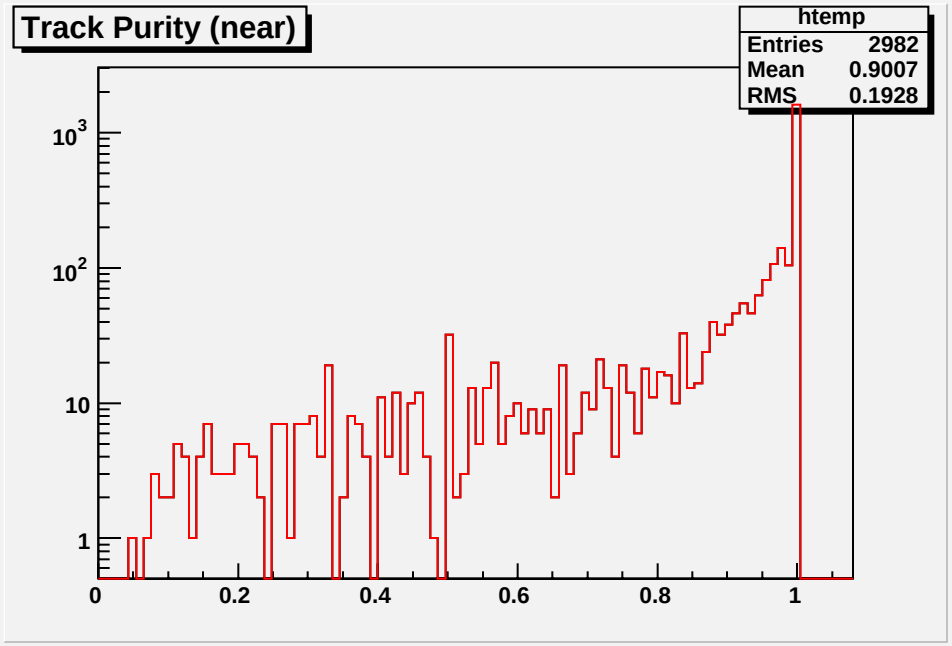
1/beta (Near Detector)

 # Entries 1905 / 1905

Mean 0.960663 / 0.960663

RMS 0.306273 / 0.306273





Track Purity (Far Detector)

 # Entries 4009 / 4009

Mean 0.859077 / 0.859077

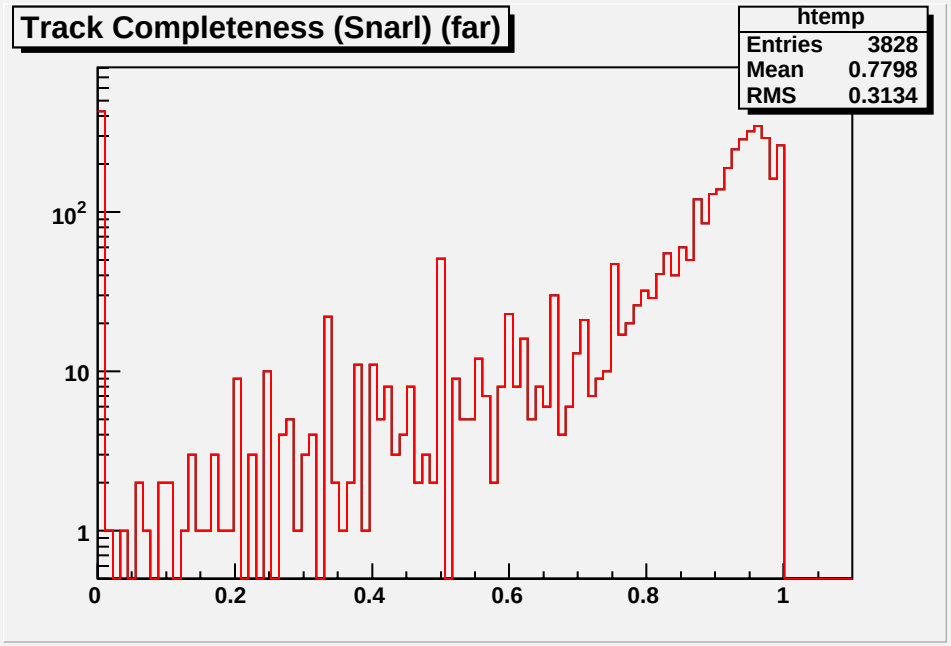
RMS 0.212385 / 0.212385

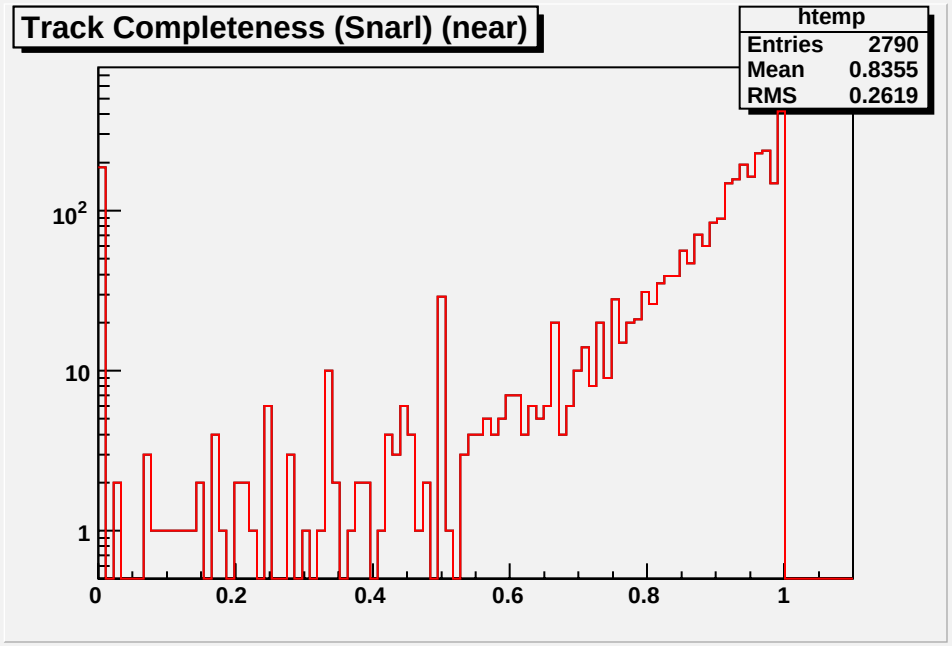
Track Purity (Near Detector)

 # Entries 2982 / 2982

Mean 0.900653 / 0.900653

RMS 0.192752 / 0.192752





Track Completeness (Far Detector)

 # Entries 3828 / 3828

Mean 0.779812 / 0.779812

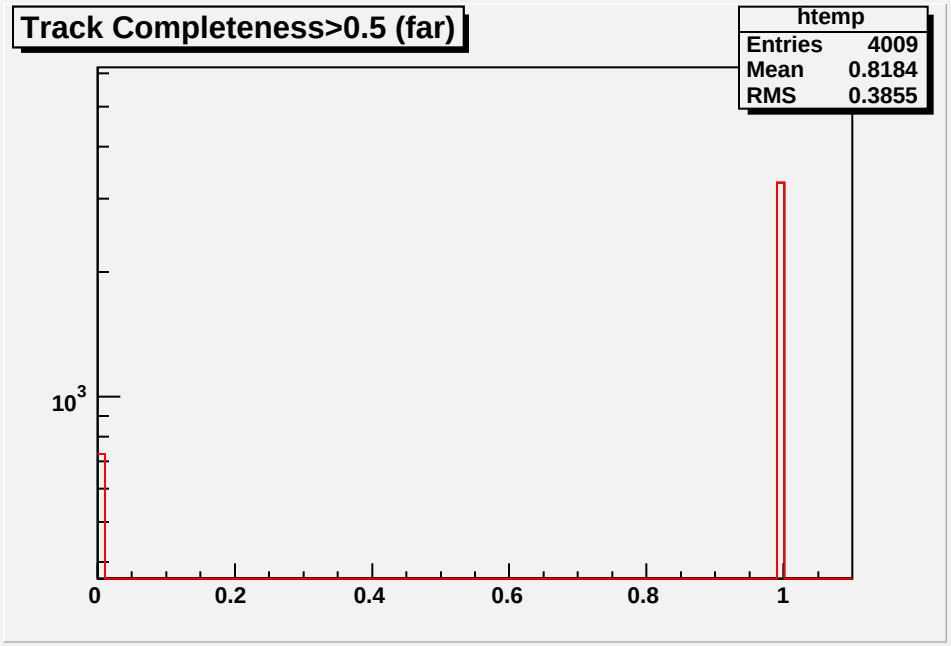
RMS 0.313373 / 0.313373

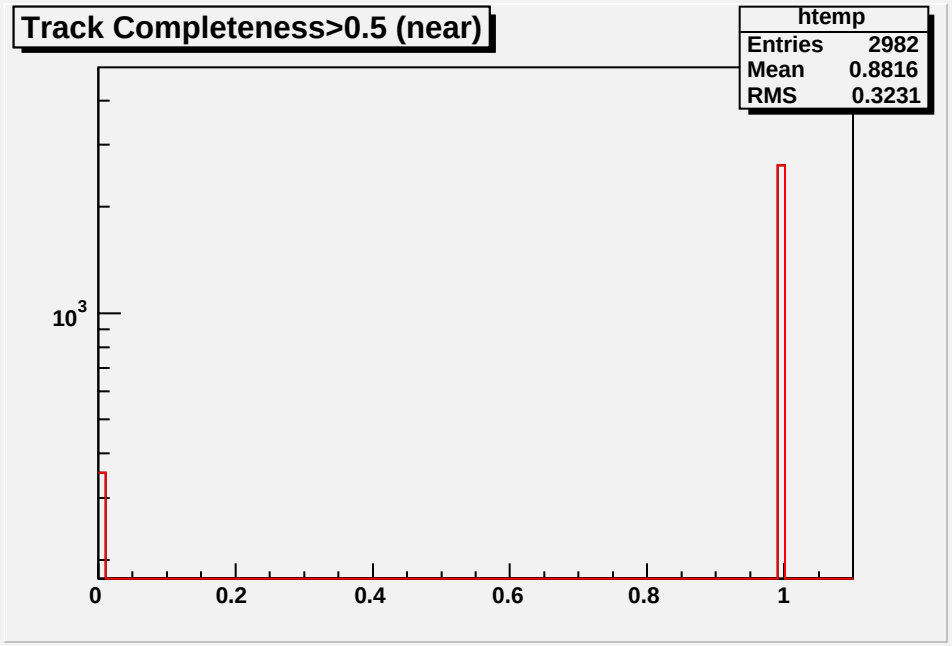
Track Completeness (Near Detector)

 # Entries 2790 / 2790

Mean 0.835512 / 0.835512

RMS 0.261851 / 0.261851





Track Completeness>0.5

 # Entries 4009 / 4009

Mean 0.818409 / 0.818409

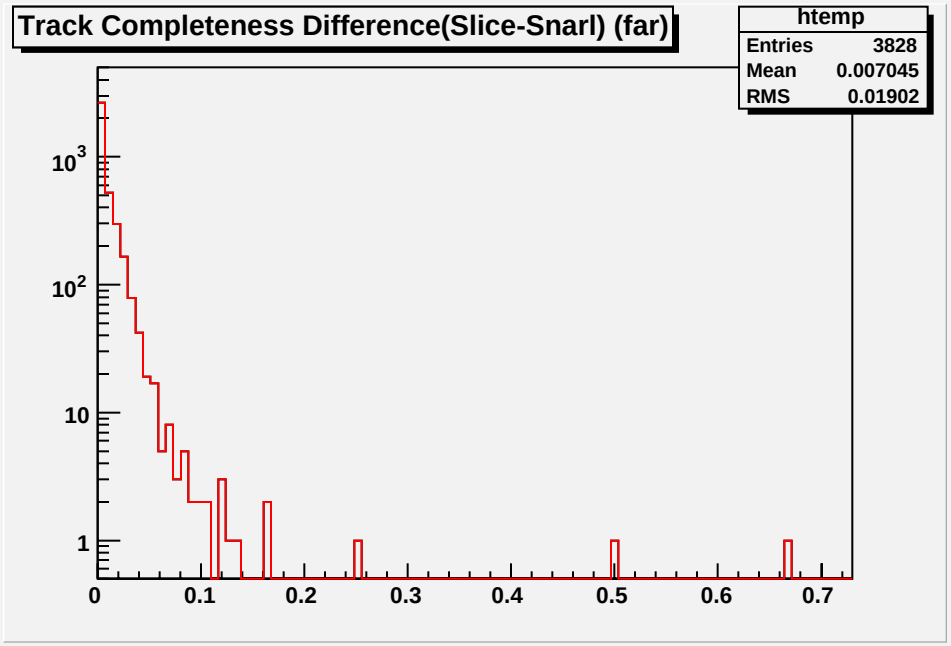
RMS 0.385507 / 0.385507

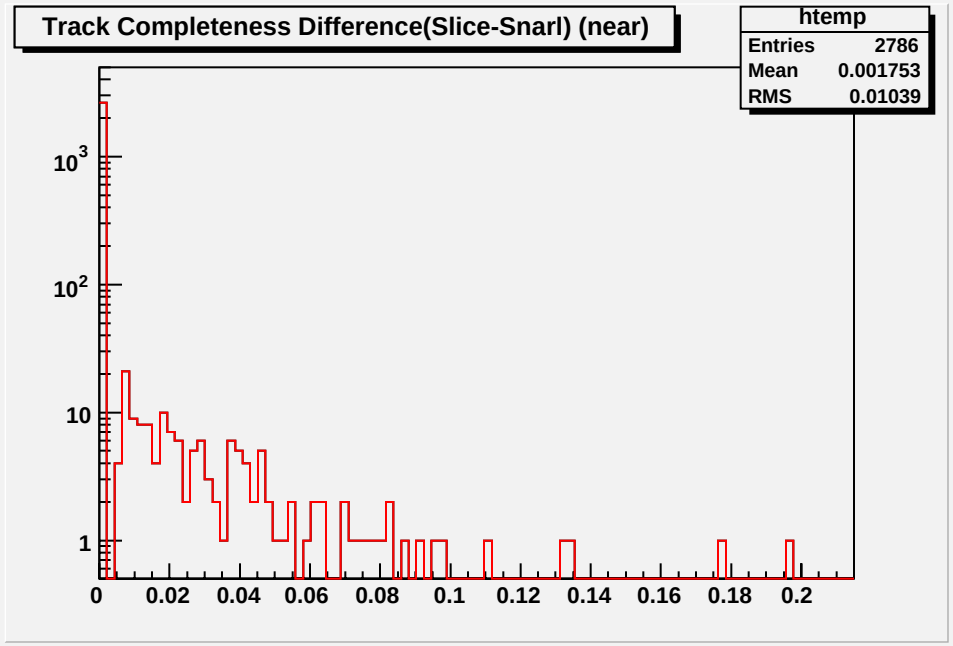
Track Completeness>0.5 (Near Detector)

 # Entries 2982 / 2982

Mean 0.881623 / 0.881623

RMS 0.323054 / 0.323054





Track Compl. (Slice-Snarl) (Far Detector)

 # Entries 3828 / 3828

Mean 0.007045 / 0.007045

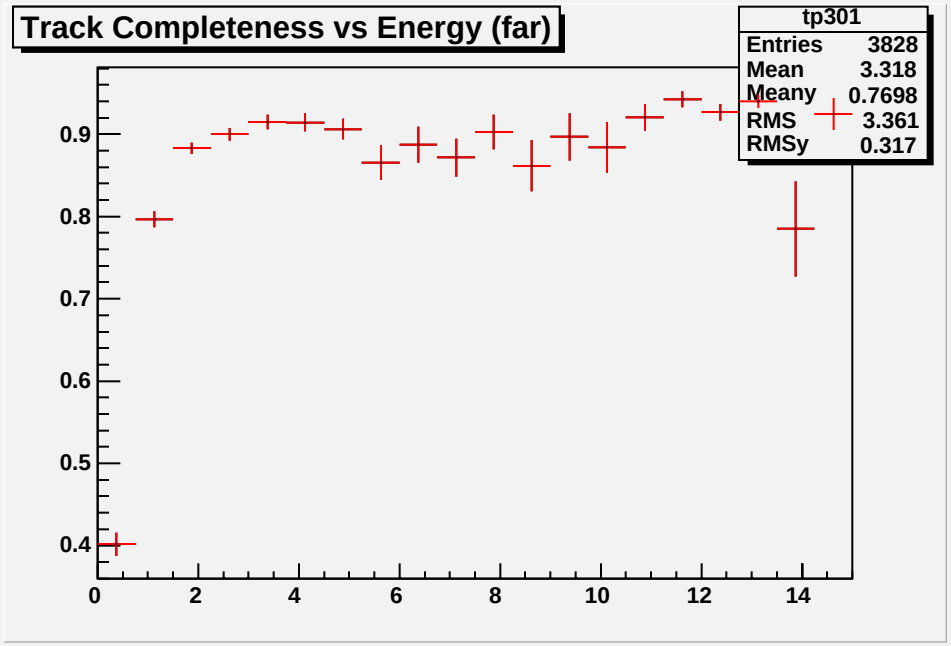
RMS 0.019015 / 0.019015

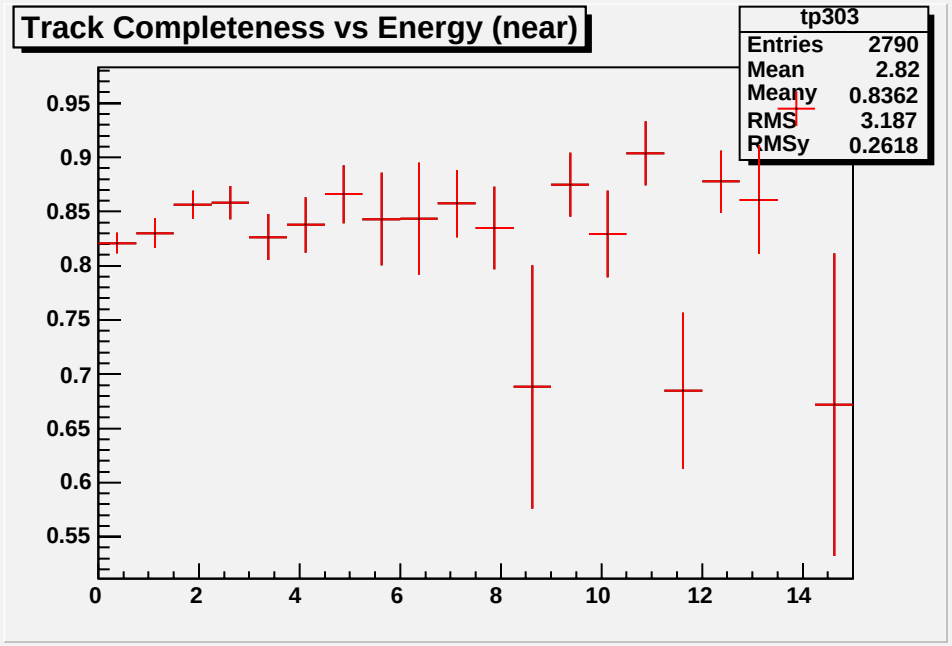
Track Compl Diff(Slice-Snarl) (Near Detector)

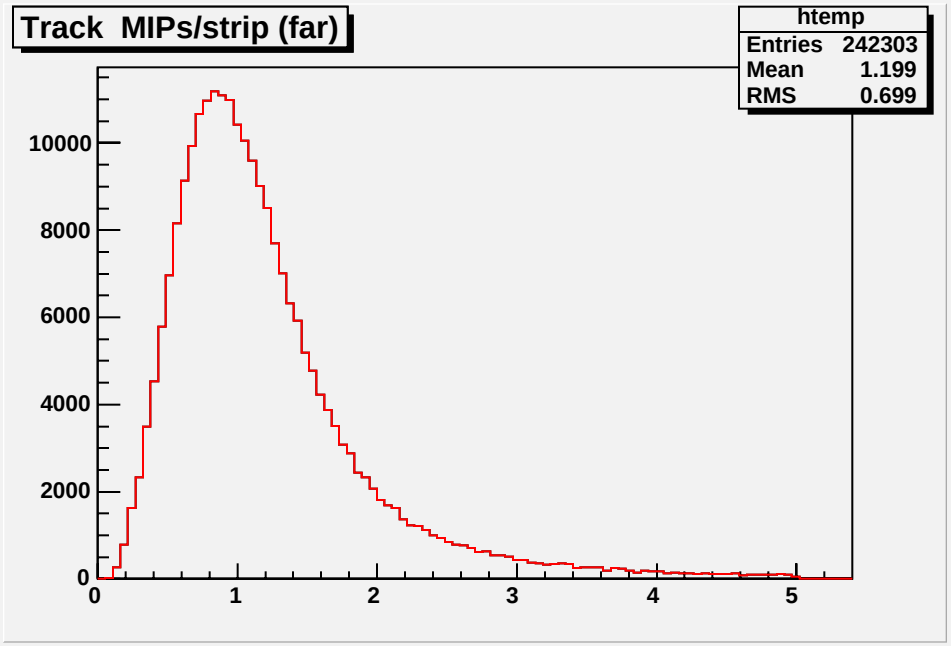
 # Entries 2786 / 2790

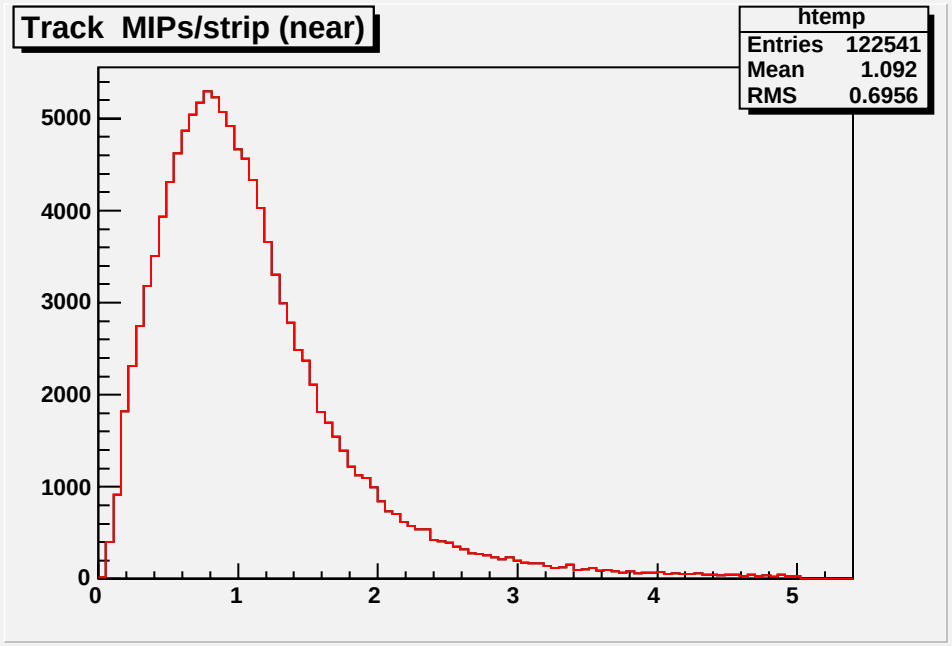
Mean 0.001753 / 0.001837

RMS 0.010386 / 0.011358


Track Completeness vs Energy (far)
tp301
Entries 3828
Mean 3.318
Meany 0.7698
RMS 3.361
RMSy 0.317
0.9
0.8
0.7
0.6
0.5
0.4
0
2
4
6
8
10
12
14


Track Completeness vs Energy (near)
tp303
Entries 2790
Mean 2.82
Meany 0.8362
RMS 3.187
RMSy 0.2618
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0
2
4
6
8
10
12
14





Track MIPS/strip (Far Detector)

 # Entries 242303 / 242303

Mean 1.198760 / 1.198760

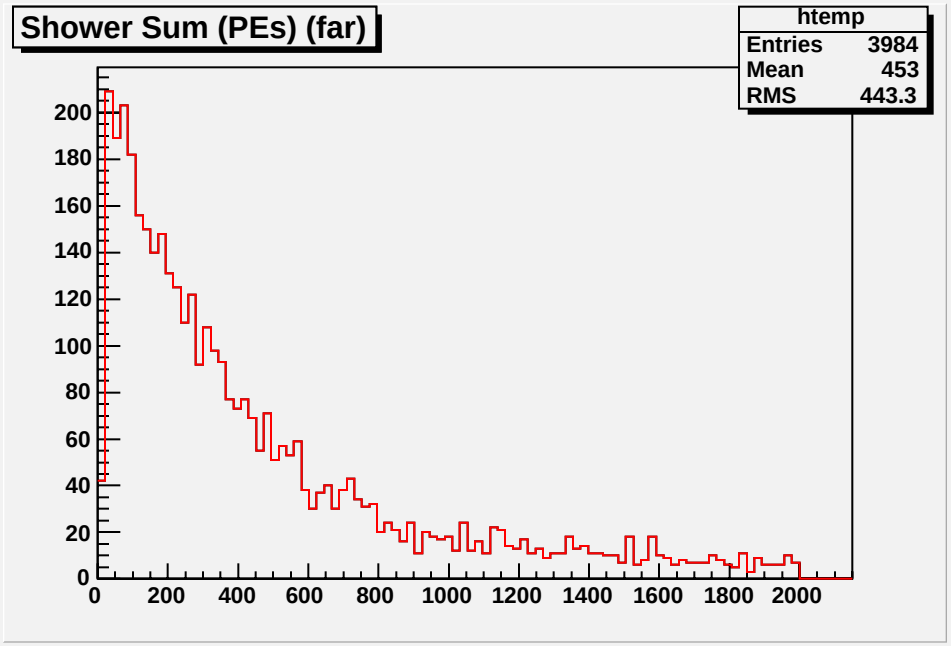
RMS 0.699026 / 0.699026

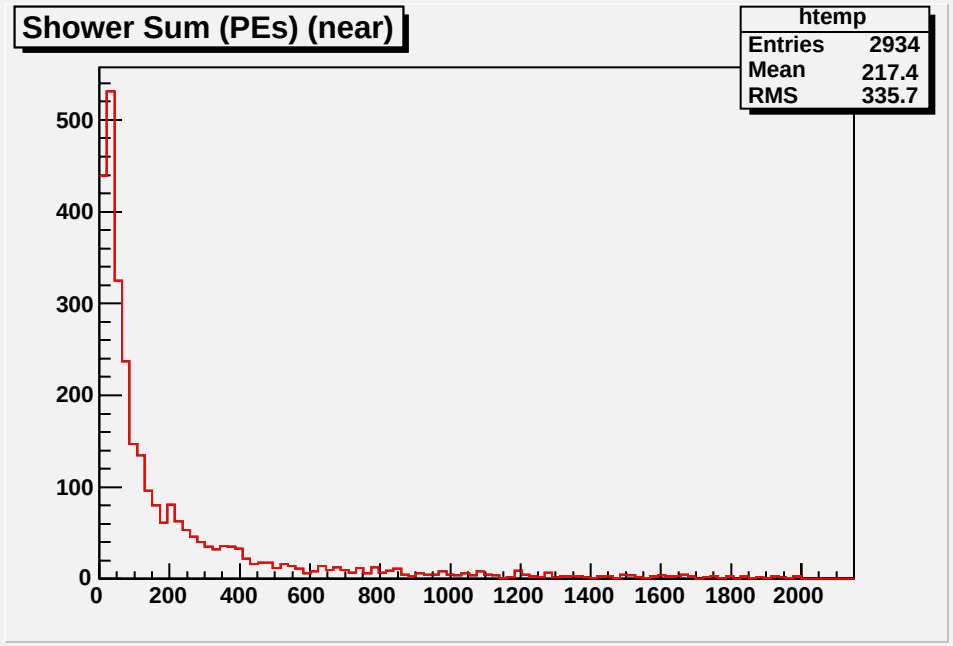
Track MIPs/Strip (Near Detector)

 # Entries 122541 / 122541

Mean 1.092118 / 1.092118

RMS 0.695628 / 0.695628





Shower Sum (PEs) (Far Detector)

 # Entries 3984 / 3984

Mean 452.973608 / 452.973608

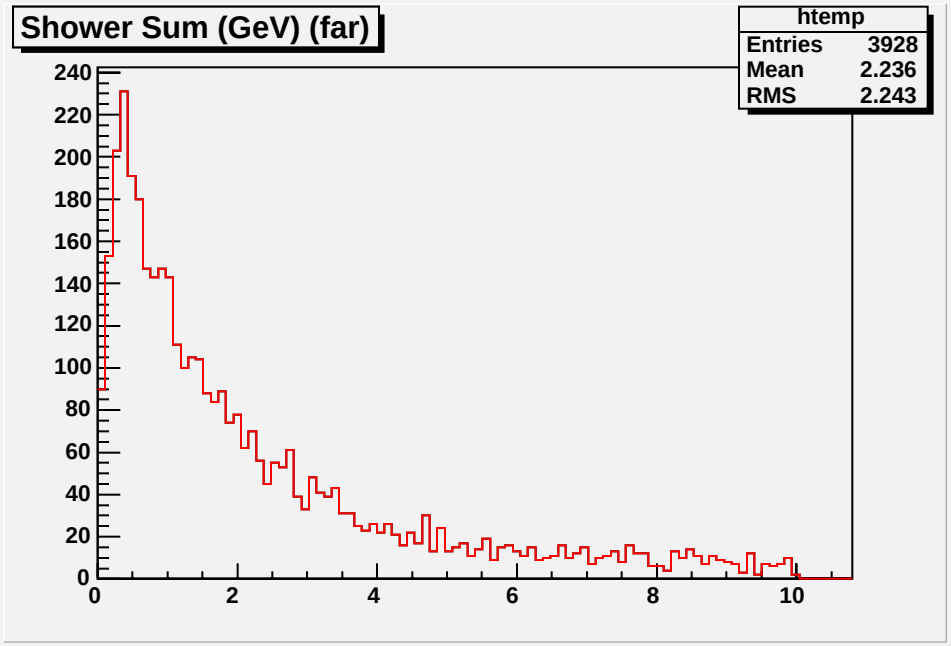
RMS 443.273626 / 443.273626

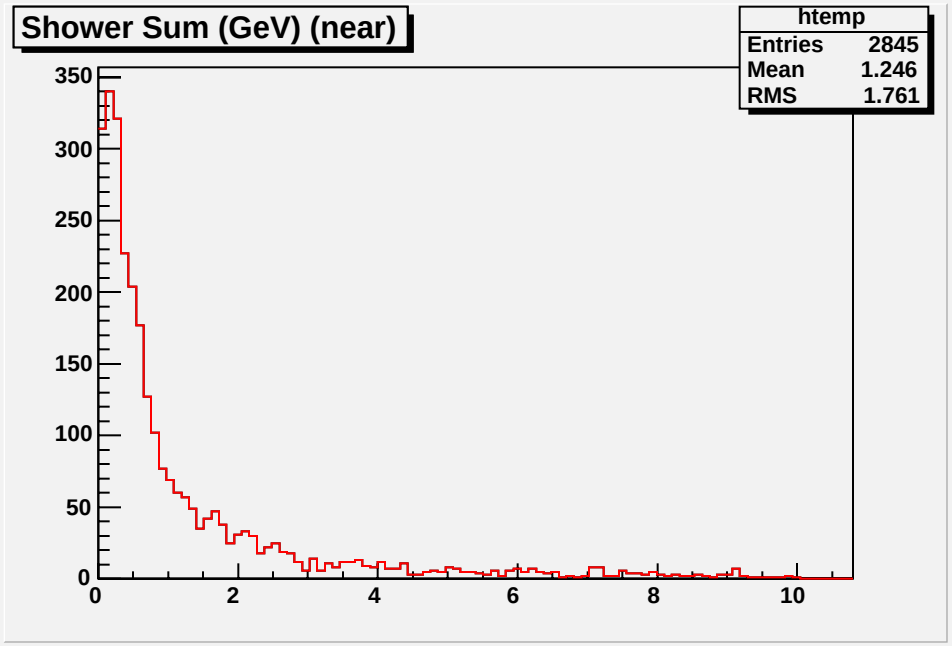
Shower Sum (PEs) (Near Detector)

 # Entries 2934 / 2934

Mean 217.433123 / 217.433123

RMS 335.724055 / 335.724055





Shower Sum GeV (Far Detector)

 # Entries 3928 / 3928

Mean 2.235849 / 2.235849

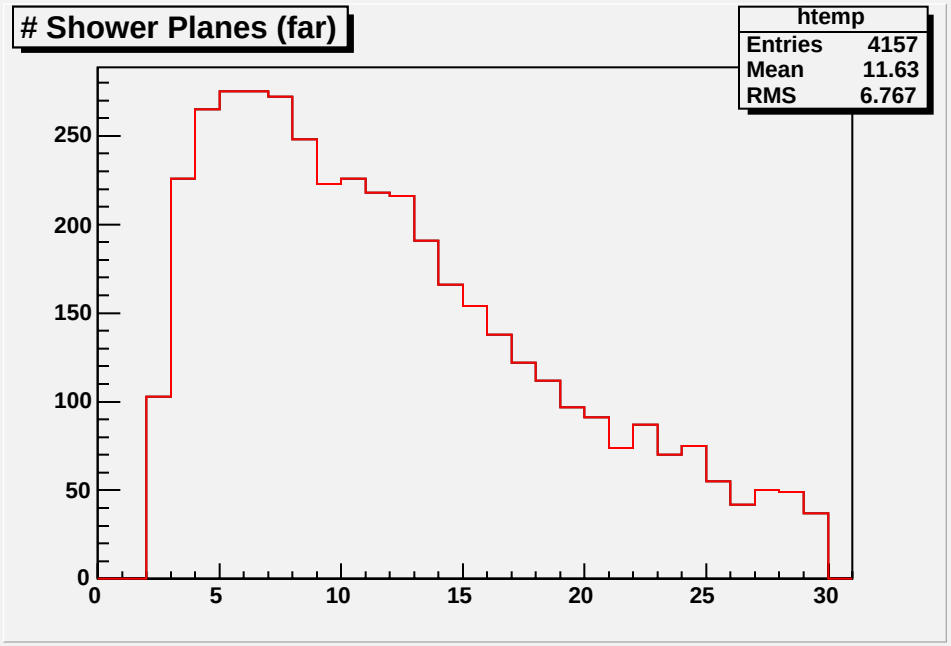
RMS 2.242781 / 2.242781

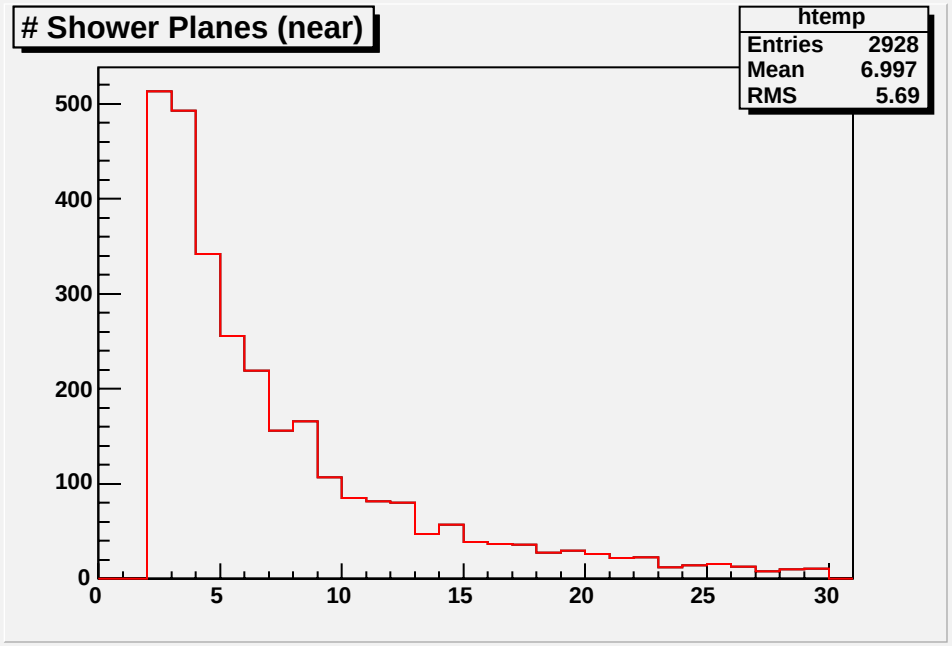
Shower Sum (GeV) (Near Detector)

 # Entries 2845 / 2845

Mean 1.245510 / 1.245510

RMS 1.761416 / 1.761416





 # Planes/Shower (Far Detector)

 # Entries 4157 / 4157

Mean 11.626654 / 11.626654

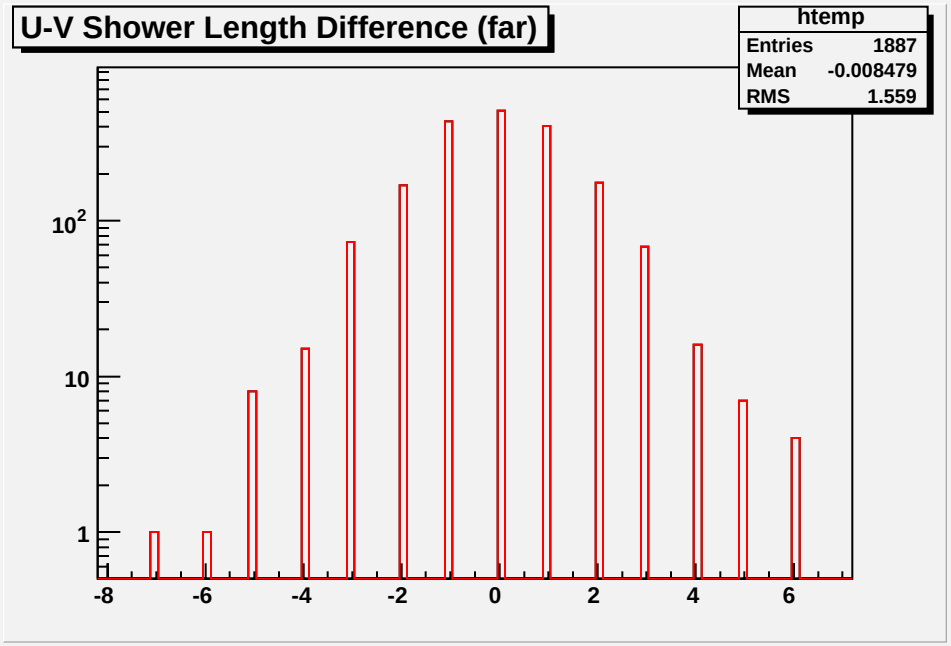
RMS 6.766752 / 6.766752

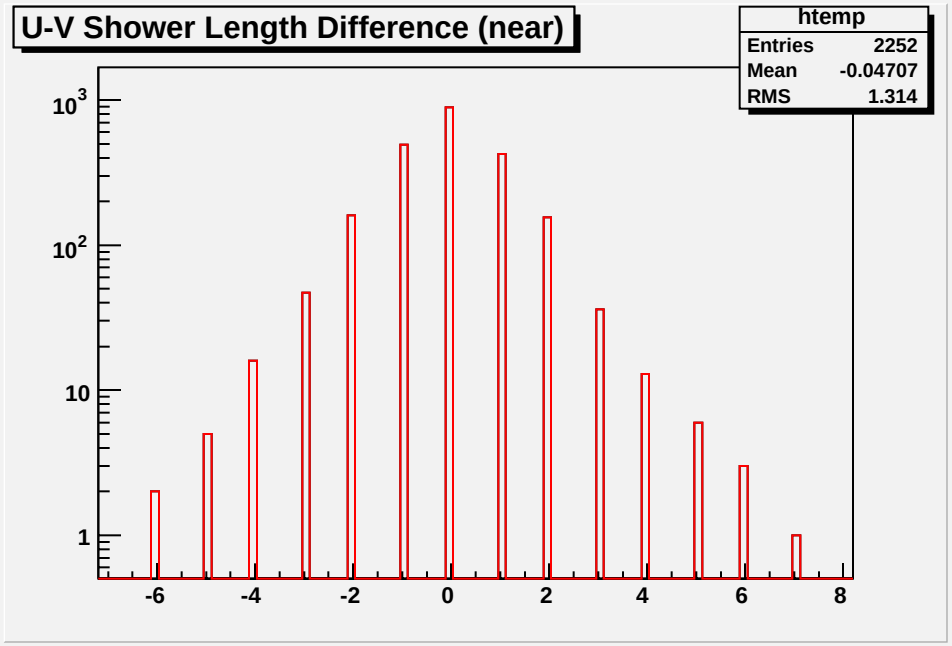
 # Shower Planes (Near Detector)

 # Entries 2928 / 2928

Mean 6.996926 / 6.996926

RMS 5.690113 / 5.690113





U-V Shower Length Diff. (Far Detector)

 # Entries 1887 / 1887

Mean -0.008479 / -0.008479

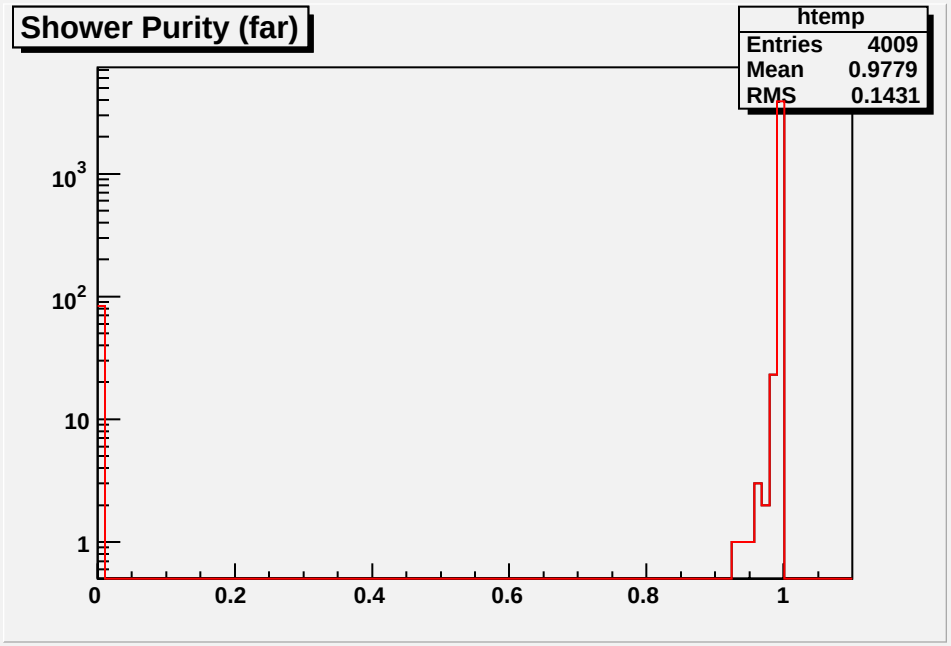
RMS 1.558583 / 1.558583

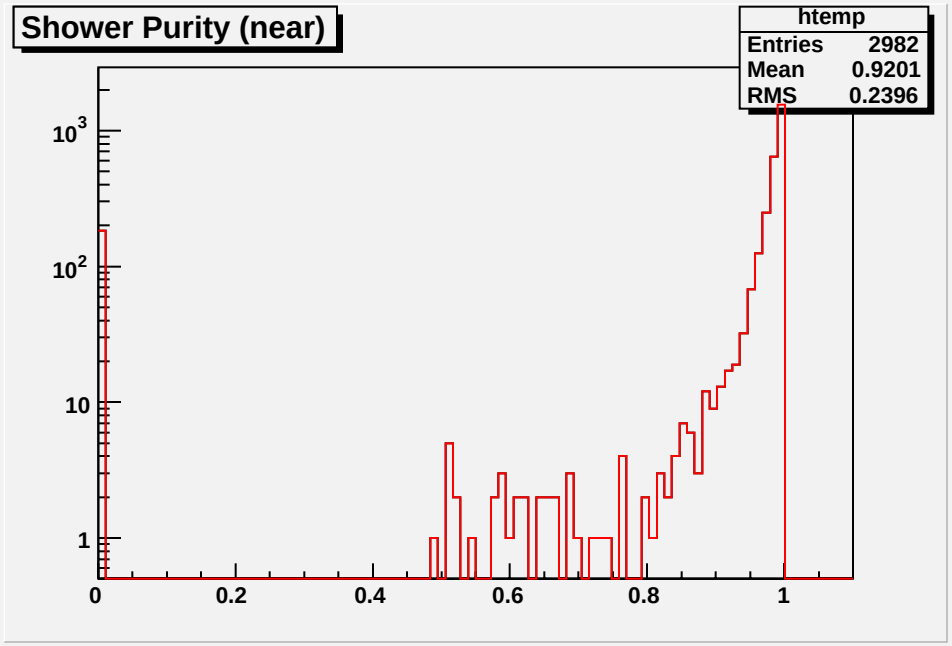
U-V Shower Length Diff (Near Detector)

 # Entries 2252 / 2252

Mean -0.047069 / -0.047069

RMS 1.314459 / 1.314459





Shower Purity (Far Detector)

 # Entries 4009 / 4009

Mean 0.977947 / 0.977947

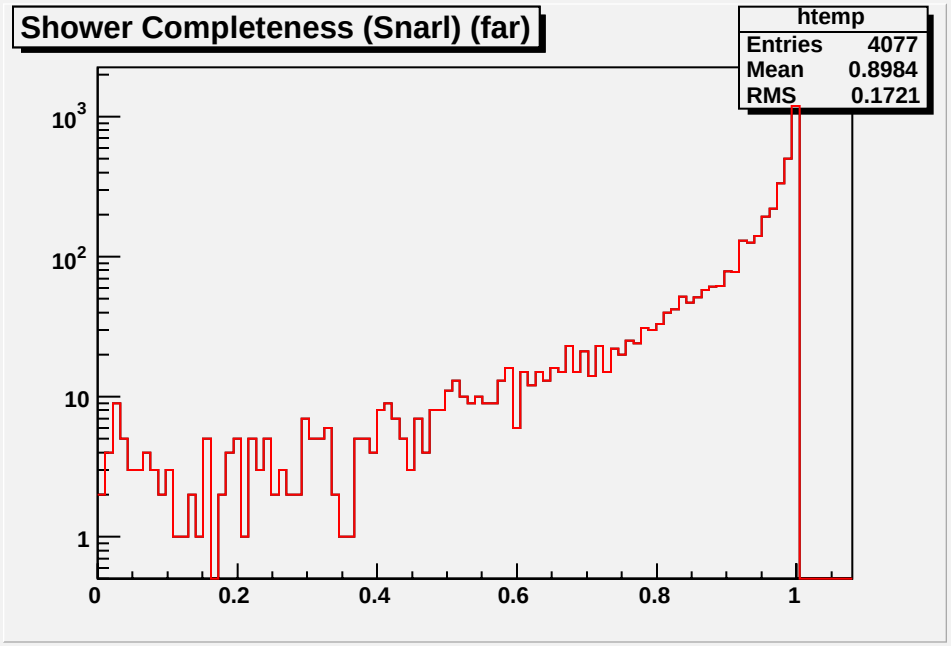
RMS 0.143089 / 0.143089

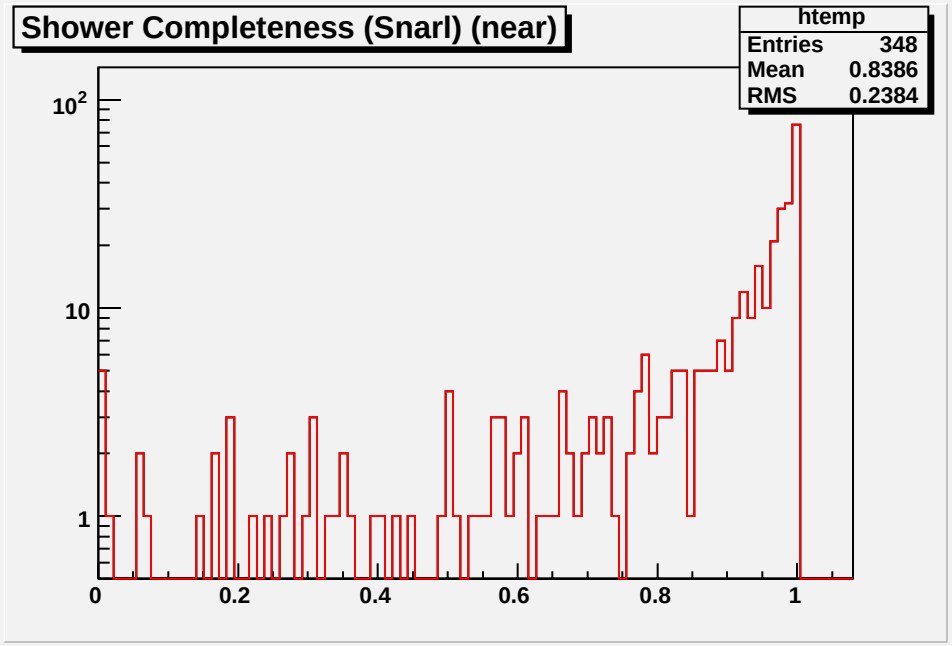
Shower Purity (Near Detector)

 # Entries 2982 / 2252

Mean 0.920073 / -0.047069

RMS 0.239649 / 1.314459





Shower Completeness (Far Detector)

 # Entries 4077 / 4209

Mean 0.898429 / 0.870253

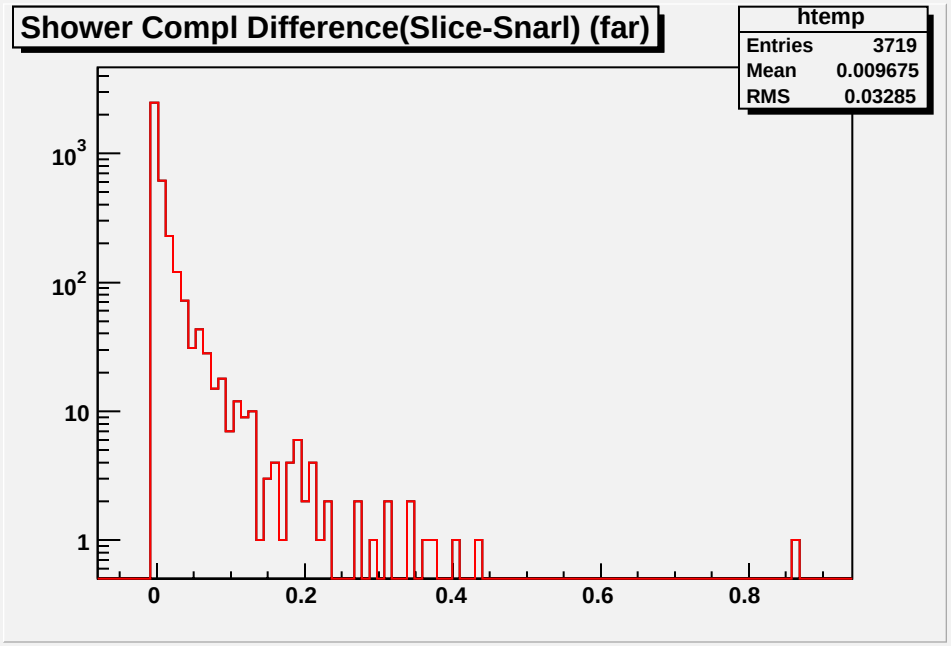
RMS 0.172141 / 0.230702

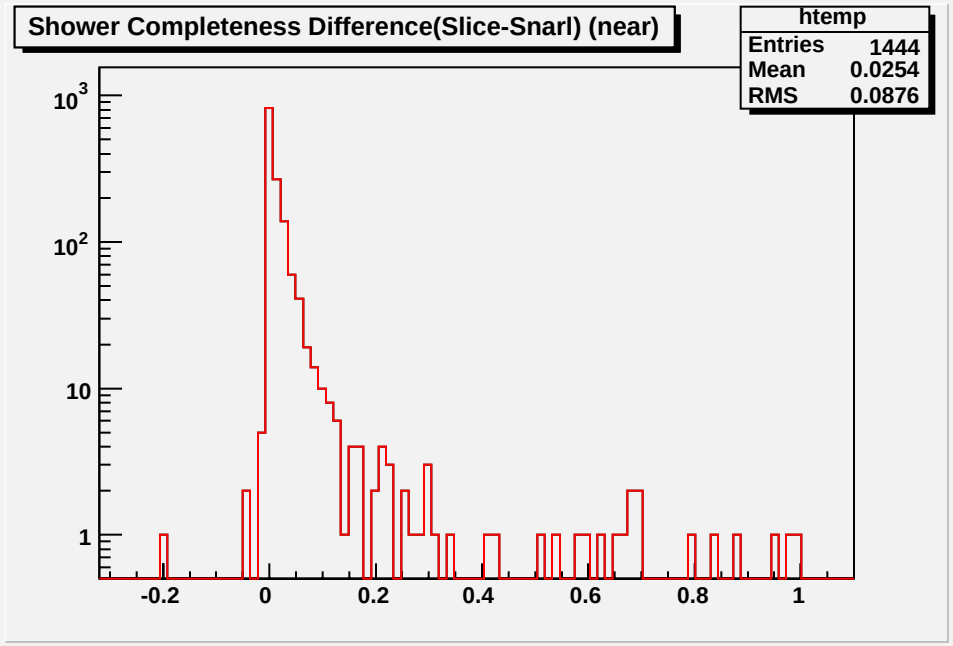
Shower Completeness (Near Detector)

 # Entries 348 / 348

Mean 0.838600 / 0.838600

RMS 0.238389 / 0.238389





Shower Compl. (Slice-Snarl) (Far Detector)

 # Entries 3719 / 3719

Mean 0.009675 / 0.009675

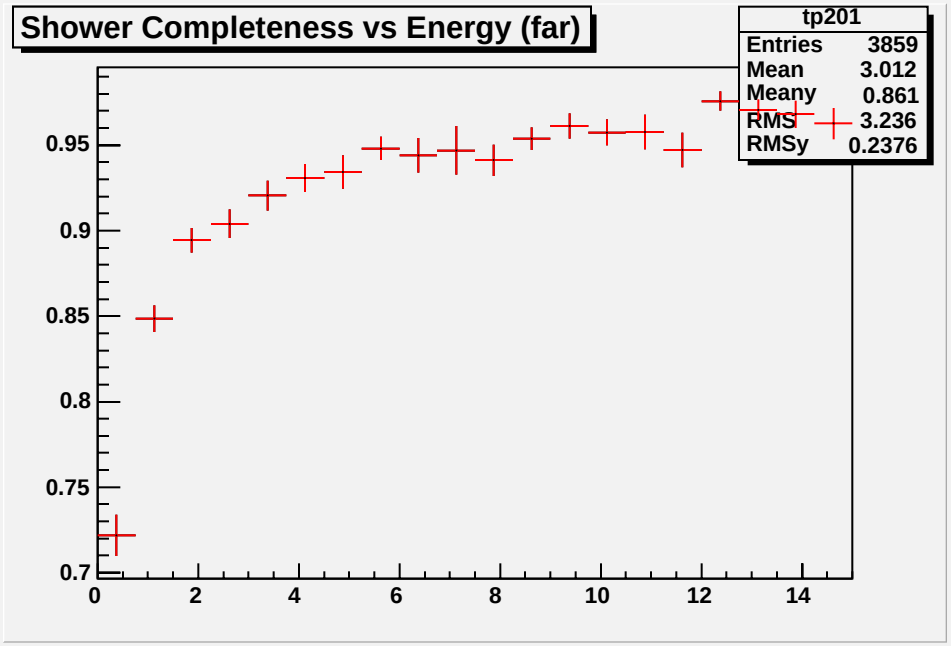
RMS 0.032847 / 0.032847

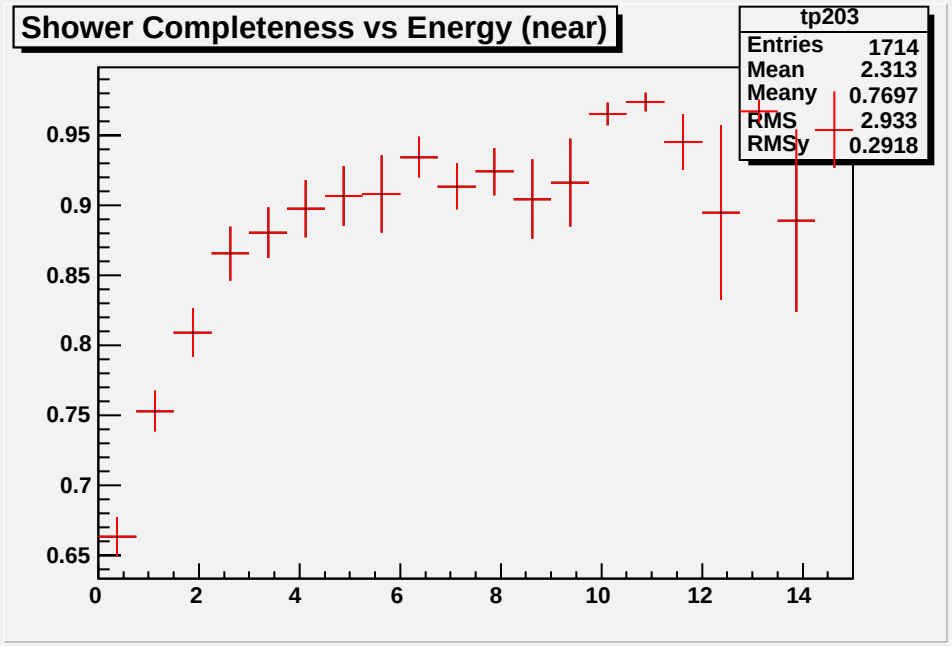
Shower Compl Diff (Slice-Snarl)(Near)

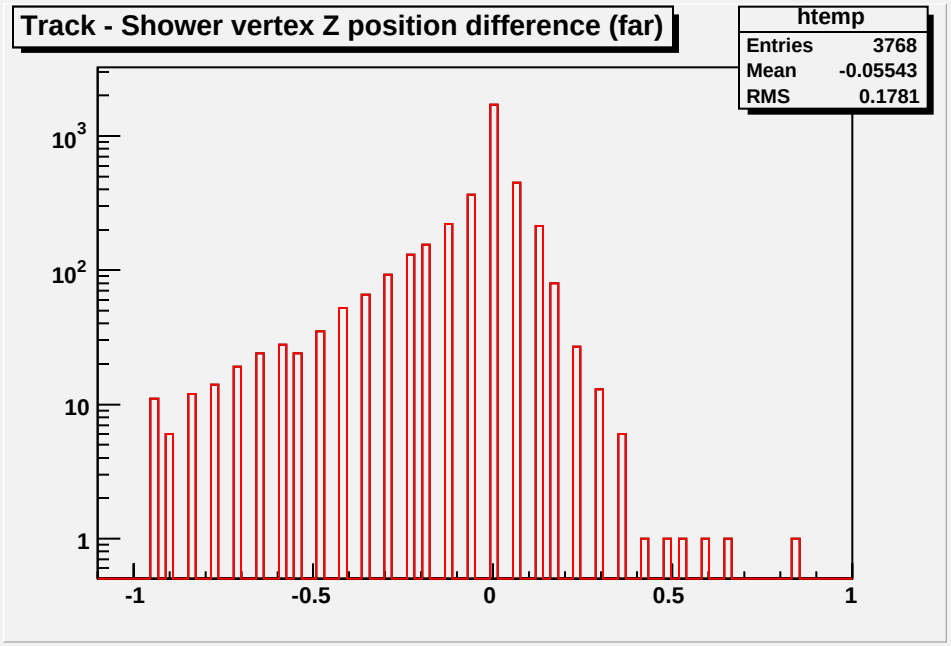
 # Entries 3719 / 1444

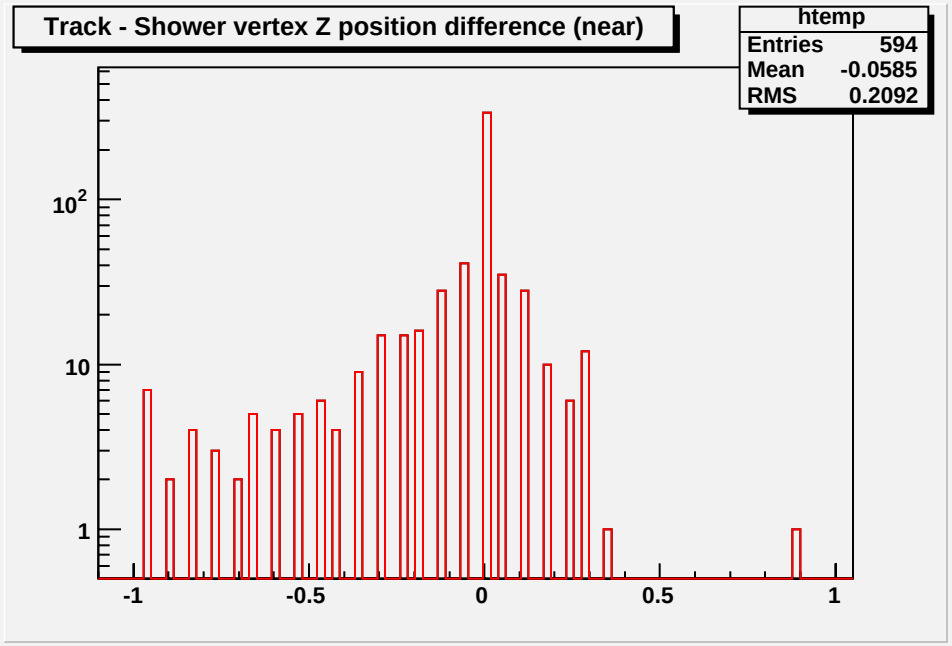
Mean 0.009675 / 0.025396

RMS 0.032847 / 0.087596


Shower Completeness vs Energy (far)
tp201
Entries 3859
Mean 3.012
Meany 0.861
RMS 3.236
RMSy 0.2376
0.95
0.9
0.85
0.8
0.75
0.7
0
2
4
6
8
10
12
14


Shower Completeness vs Energy (near)
tp203
Entries 1714
Mean 2.313
Meany 0.7697
RMS 2.933
RMSy 0.2918
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0
2
4
6
8
10
12
14





Track-Shower vertex Z diff. (Far Detector)

 # Entries 3768 / 3768

Mean -0.055435 / -0.055435

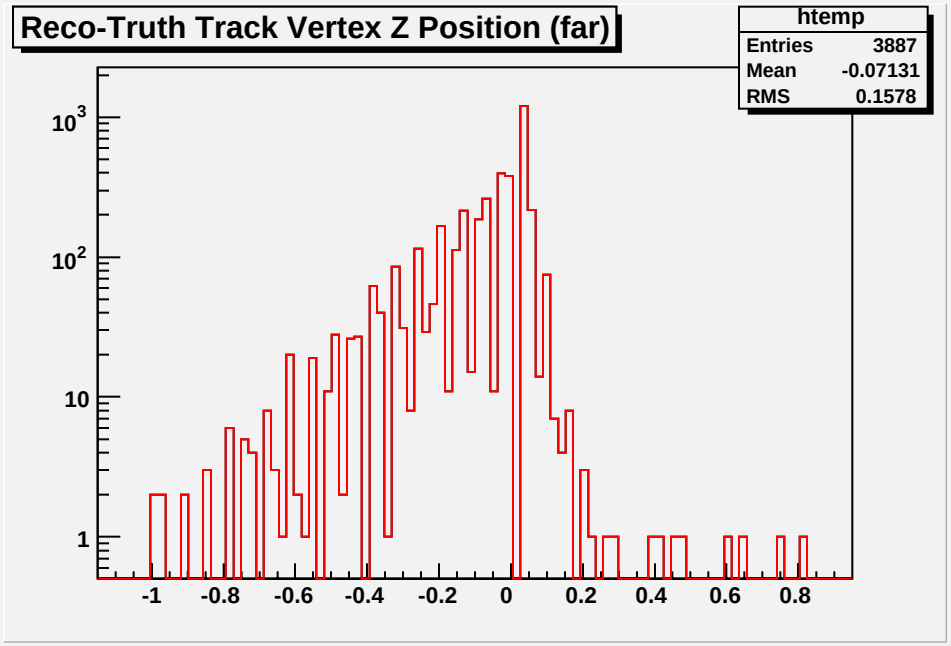
RMS 0.178143 / 0.178143

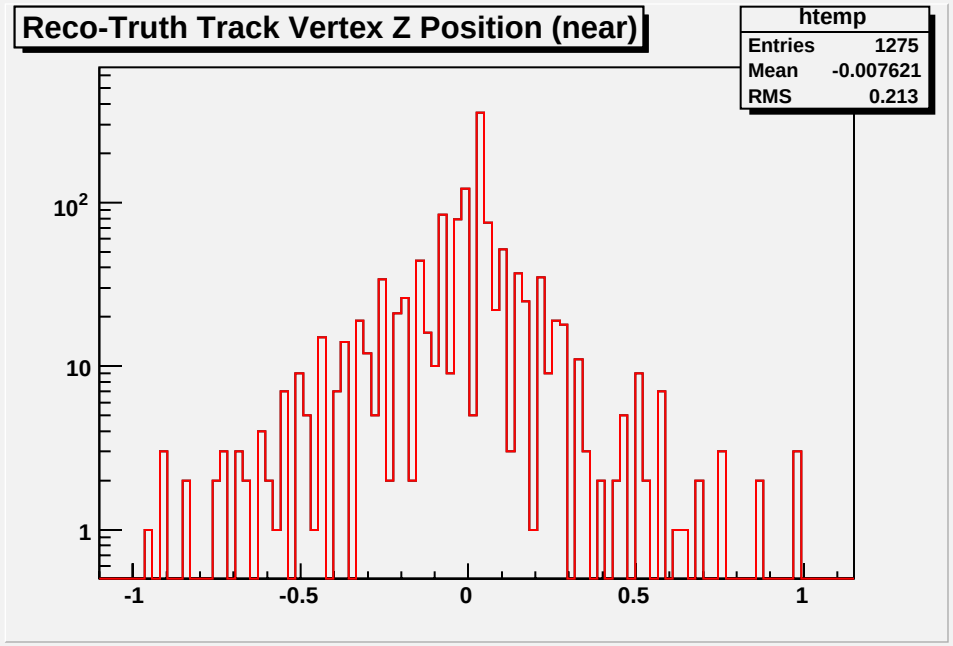
Track - Shower Vertex Z diff. (Near Detector)

 # Entries 594 / 594

Mean -0.058500 / -0.058500

RMS 0.209158 / 0.209158





Reco-Truth Track Vertex Z diff (Far Detector)

 # Entries 3887 / 3887

Mean -0.071309 / -0.071309

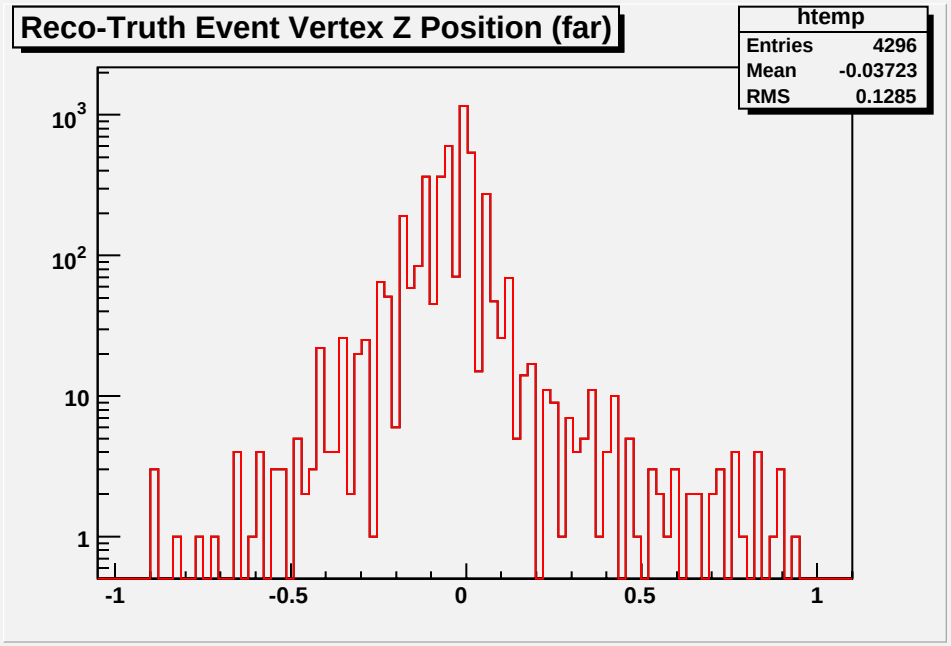
RMS 0.157819 / 0.157819

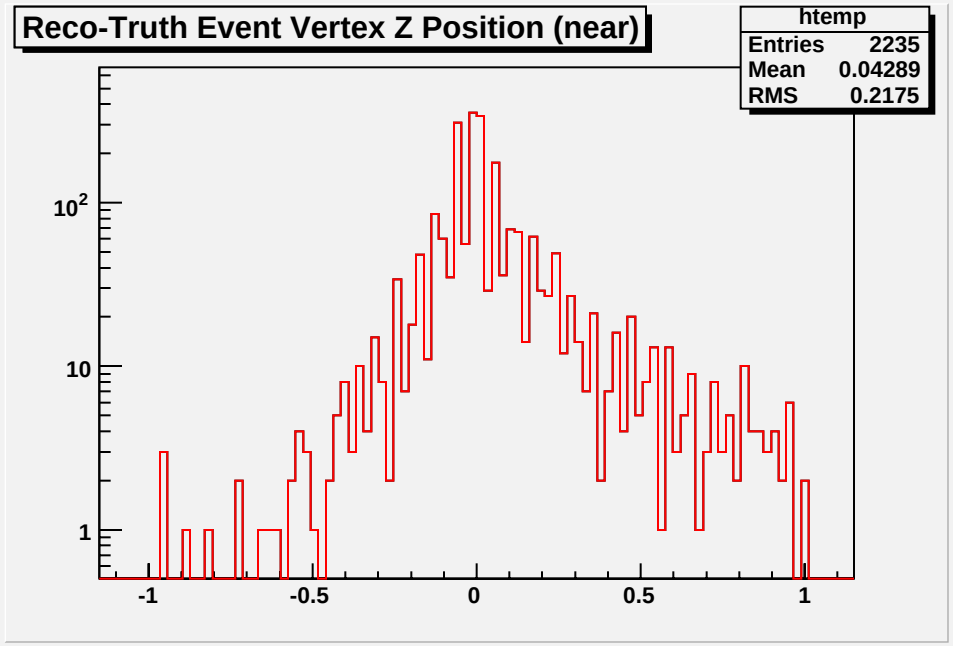
Reco-Truth Track Vtx Z (Near Detector)

 # Entries 3887 / 1275

Mean -0.071309 / -0.007621

RMS 0.157819 / 0.212979





Reco-Truth Event Vertex Z diff (Far Detector)

 # Entries 4296 / 4296

Mean -0.037229 / -0.037229

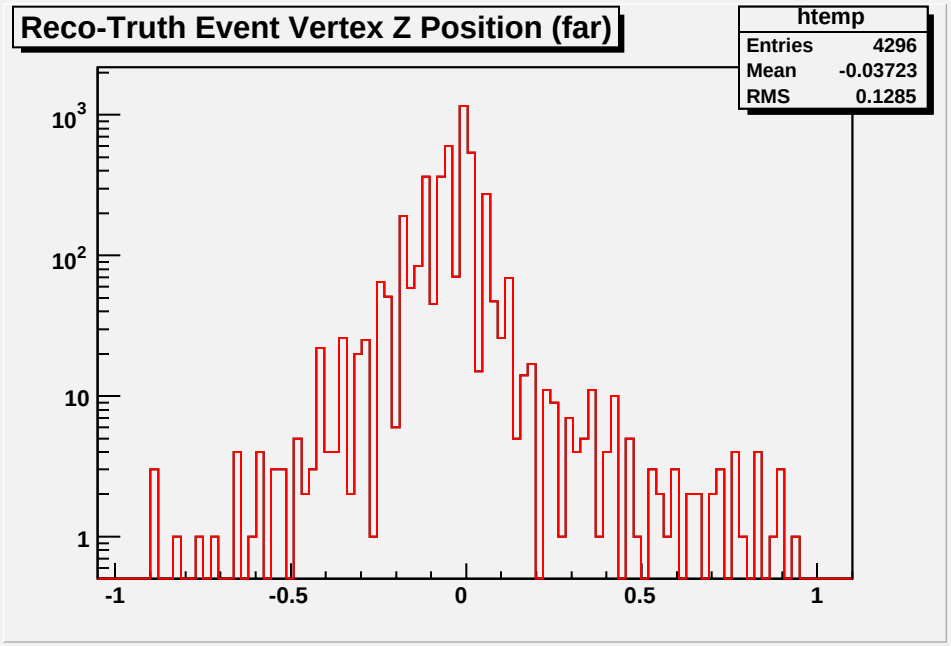
RMS 0.128525 / 0.128525

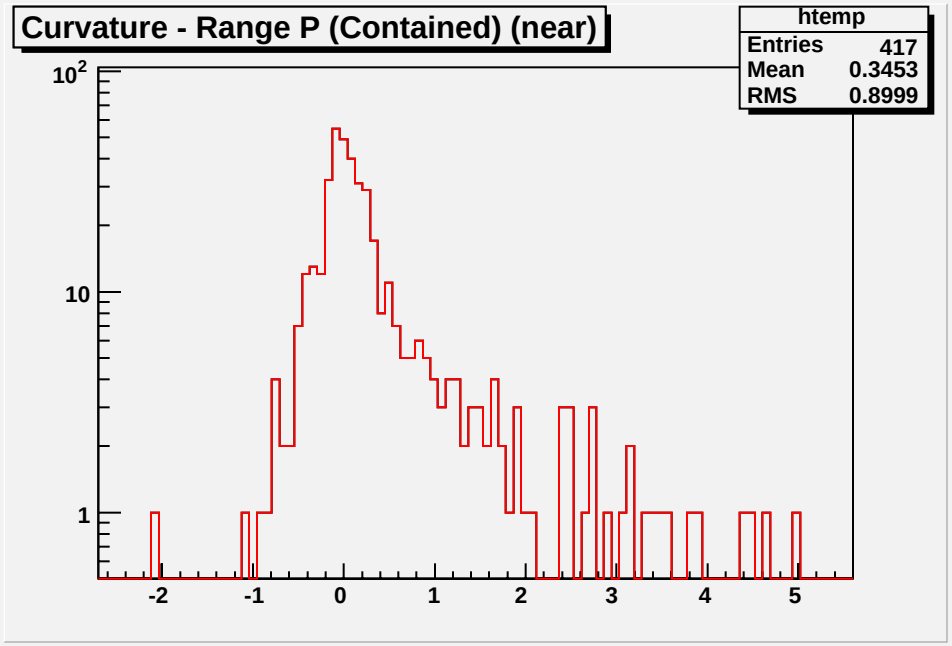
Reco-Truth Ev Vtx Z (Near Detector)

 # Entries 2235 / 2235

Mean 0.042886 / 0.042886

RMS 0.217486 / 0.217486





Reco-Truth Event Vertex Z diff (Far Detector)

 # Entries 4296 / 4296

Mean -0.037229 / -0.037229

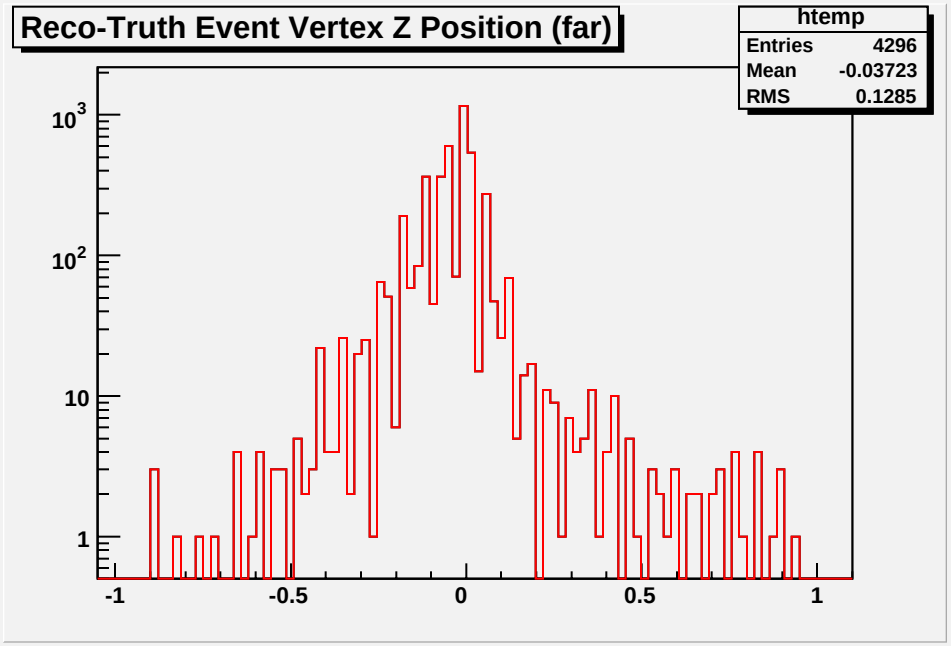
RMS 0.128525 / 0.128525

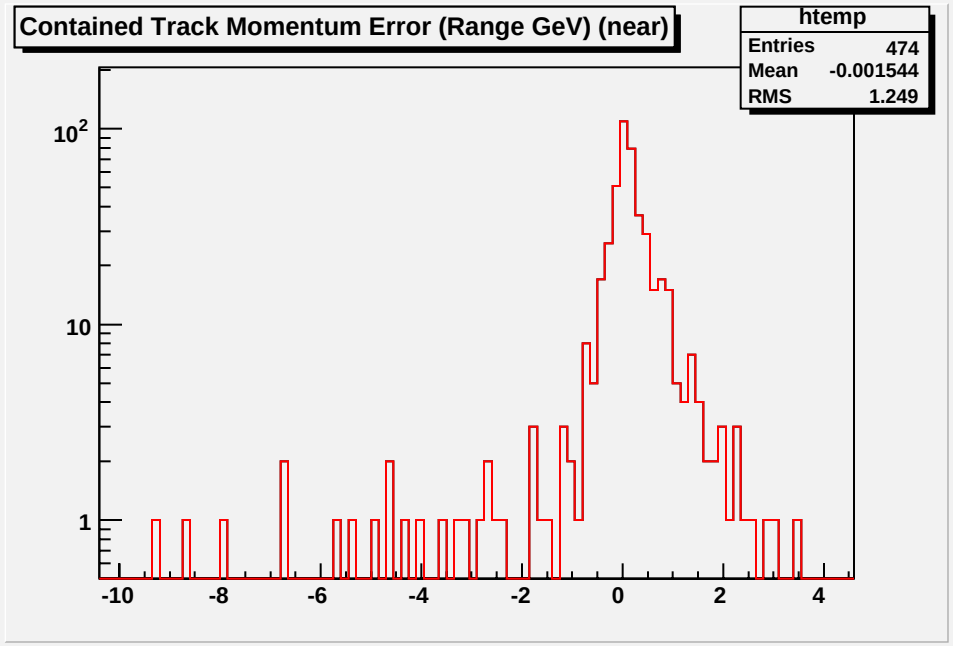
Curvature - Range P (Near Detector)

 # Entries 417 / 417

Mean 0.345345 / 0.345345

RMS 0.899876 / 0.899876





Reco-Truth Event Vertex Z diff (Far Detector)

 # Entries 4296 / 4296

Mean -0.037229 / -0.037229

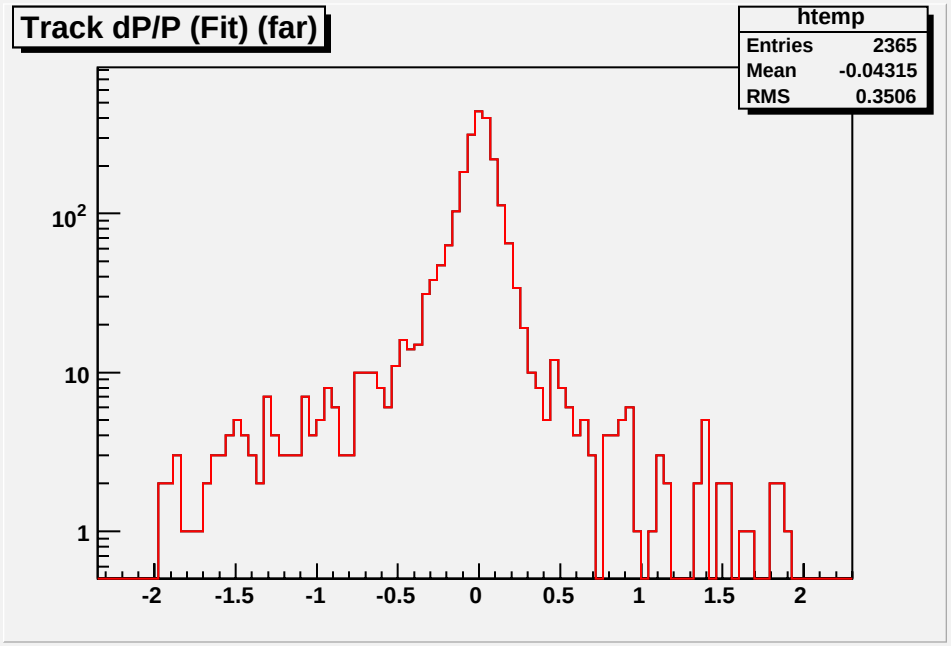
RMS 0.128525 / 0.128525

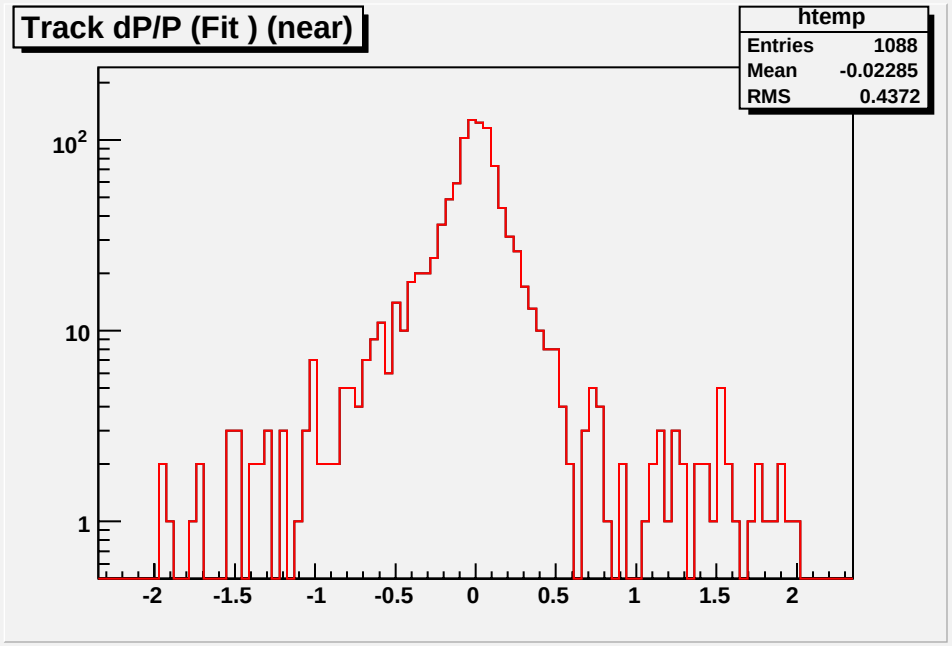
Track Momentum Error (GeV) (Near Detector)

 # Entries 474 / 474

Mean -0.001544 / -0.001544

RMS 1.248642 / 1.248642





Track dP/P (Fit) (Far Detector)

 # Entries 2365 / 2365

Mean -0.043154 / -0.043154

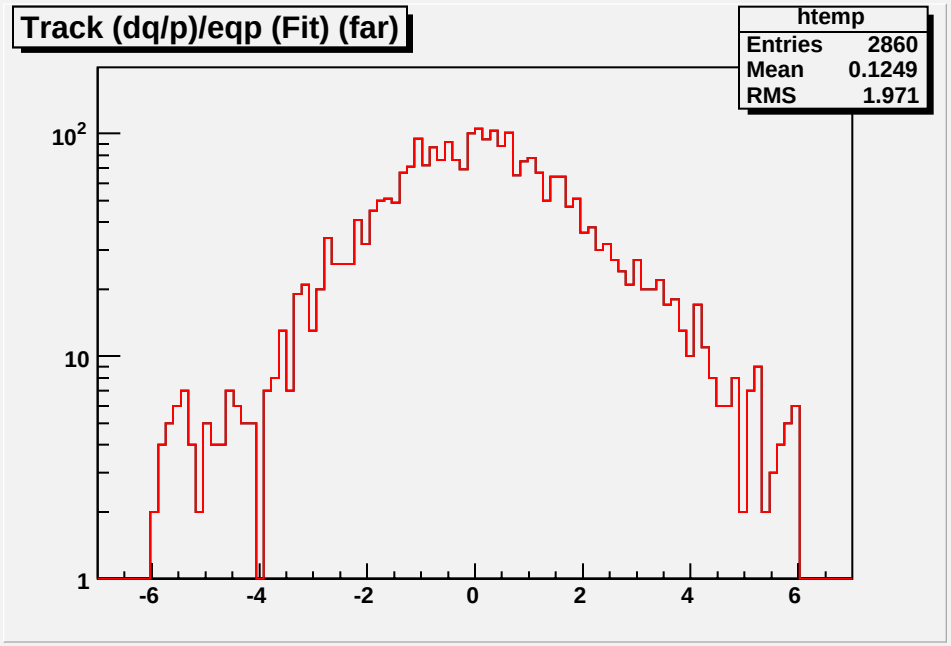
RMS 0.350627 / 0.350627

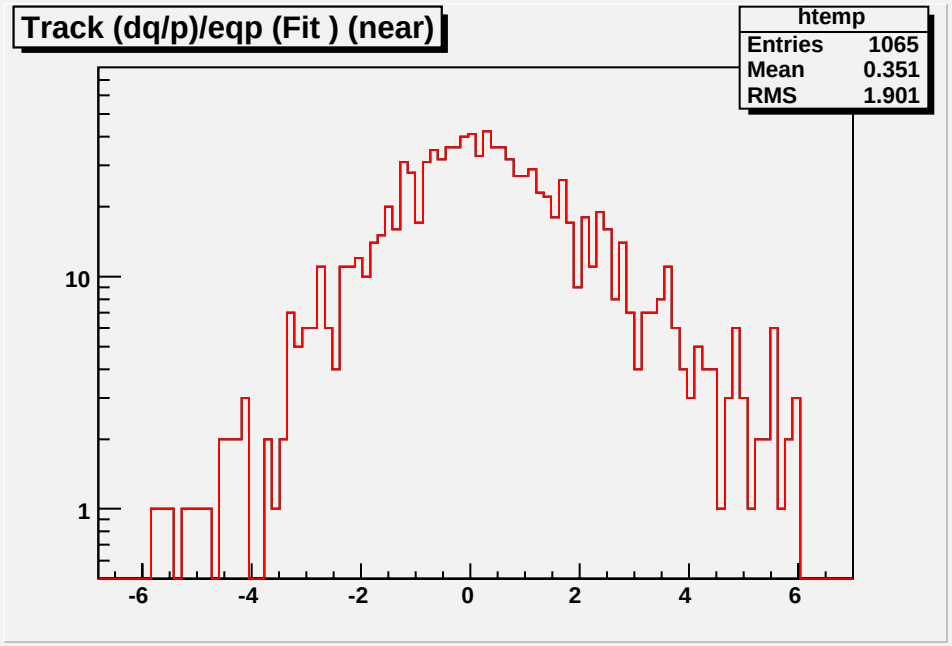
Track dP/P (fit) (Near Detector)

 # Entries 1088 / 1088

Mean -0.022848 / -0.022848

RMS 0.437195 / 0.437195





Track (Dp/p)/eqp (Far Detector)

 # Entries 2860 / 2860

Mean 0.124885 / 0.124885

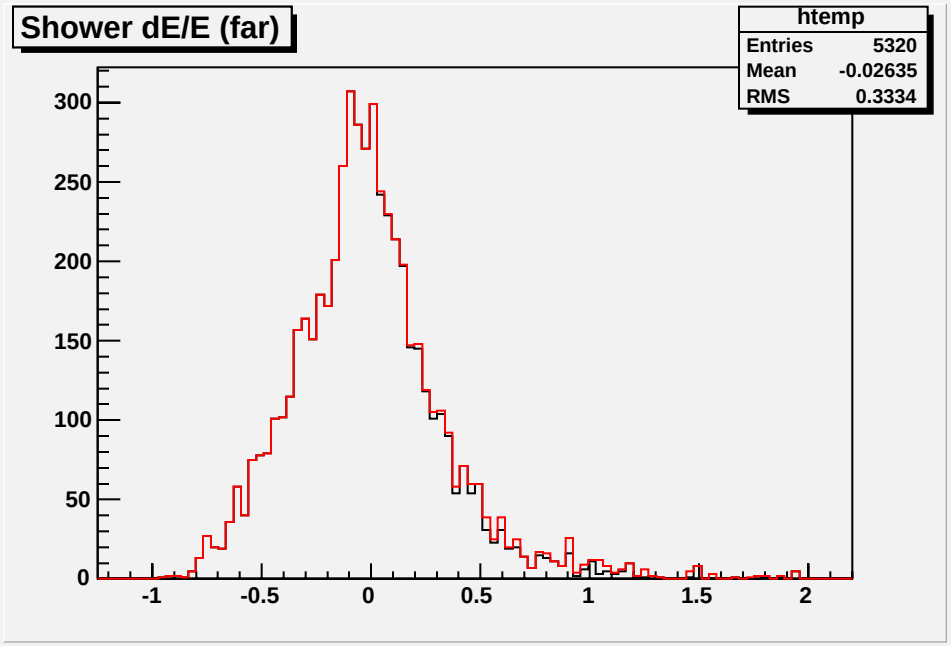
RMS 1.971057 / 1.971057

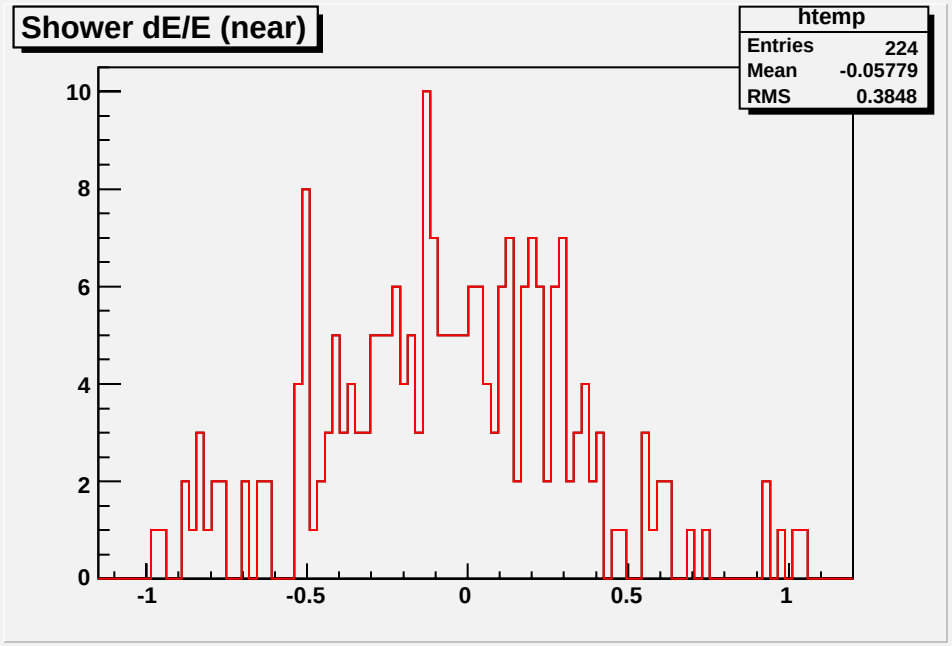
Track (dq/p)/eqp (Near Detector)

 # Entries 1065 / 1065

Mean 0.350978 / 0.350978

RMS 1.901273 / 1.901273





Shower dE/E (Far Detector)

 # Entries 5320 / 5425

Mean -0.026350 / -0.010344

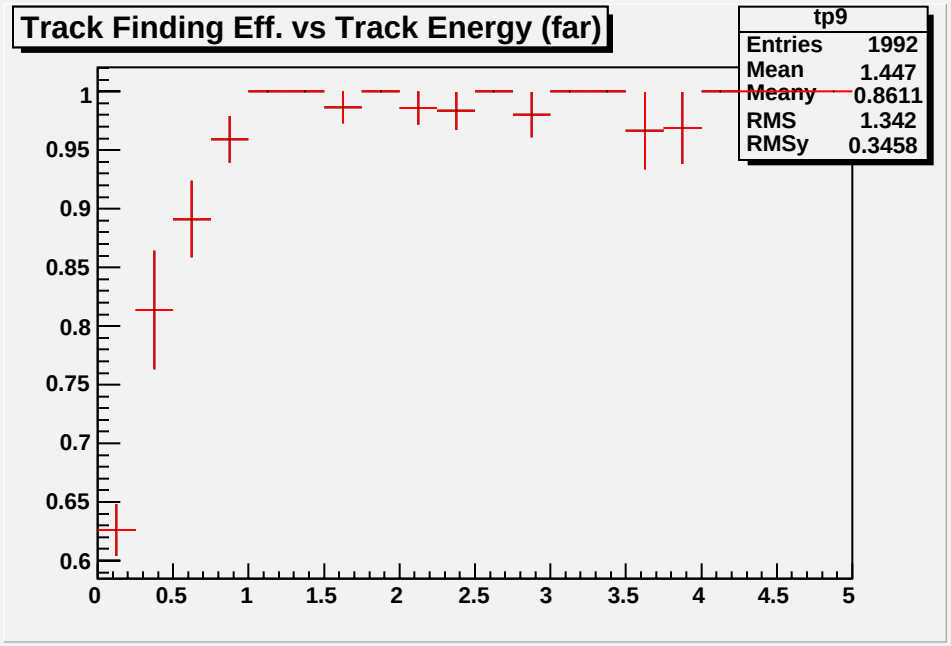
RMS 0.333370 / 0.354393

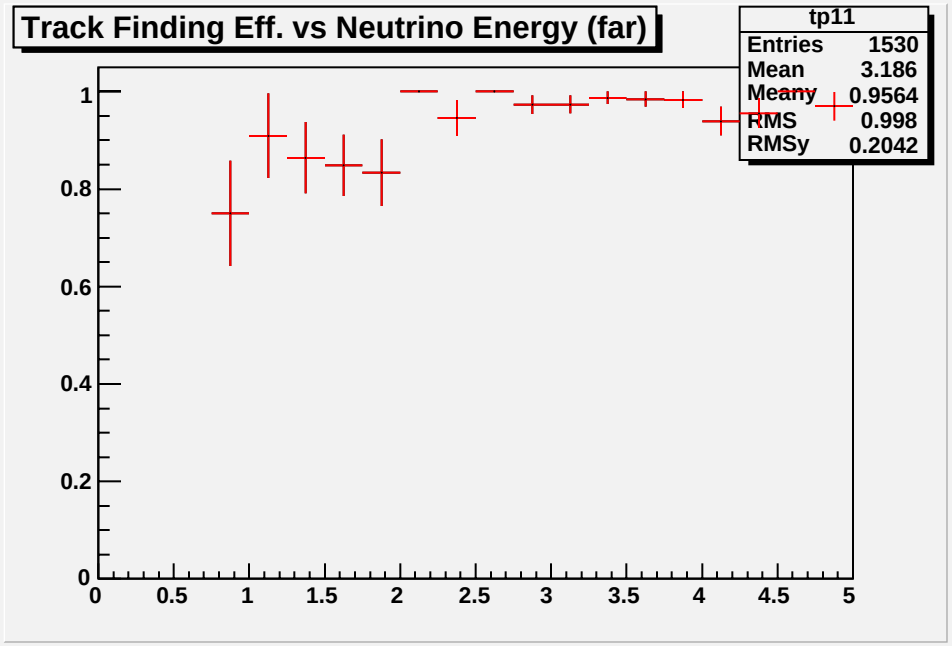
Shower dE/E (Near Detector)

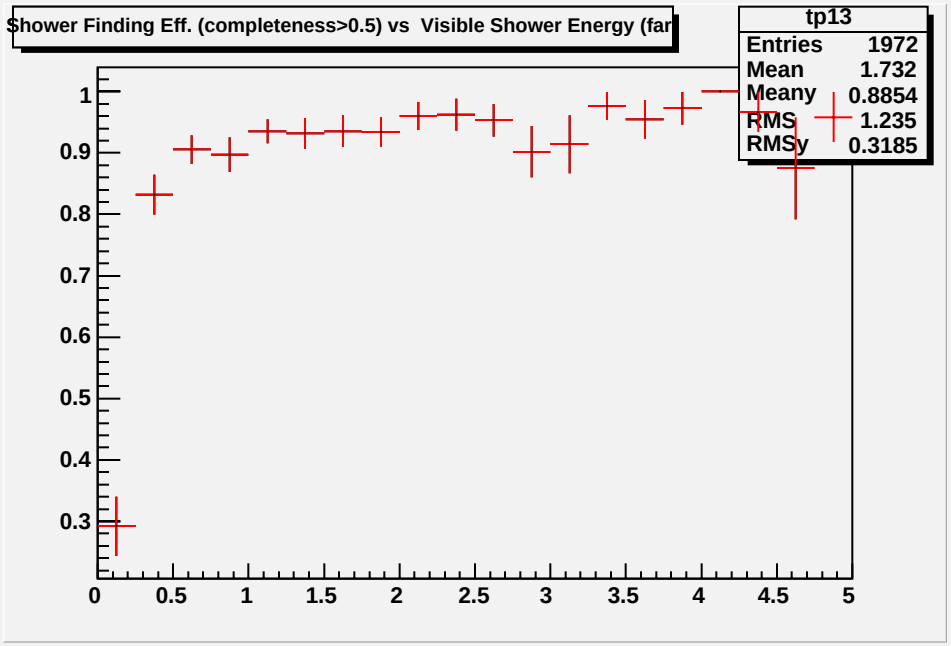
 # Entries 224 / 224

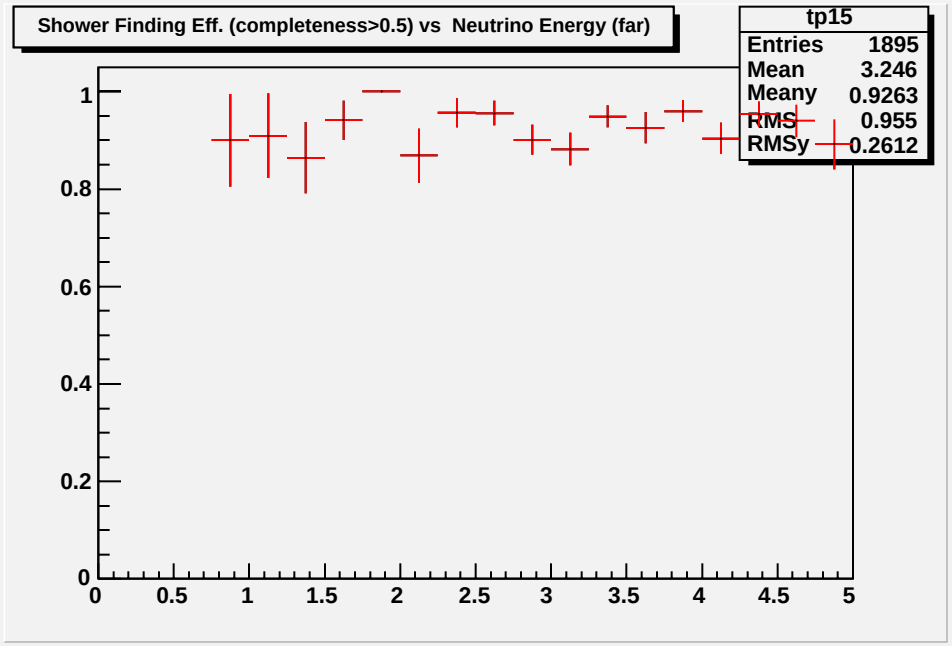
Mean -0.057789 / -0.057789

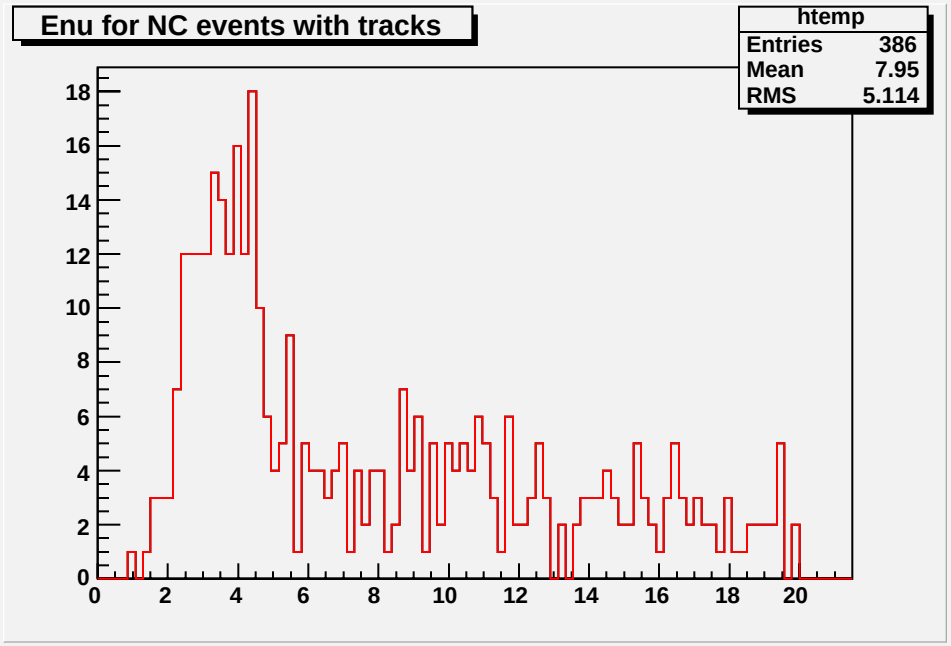
RMS 0.384820 / 0.384820

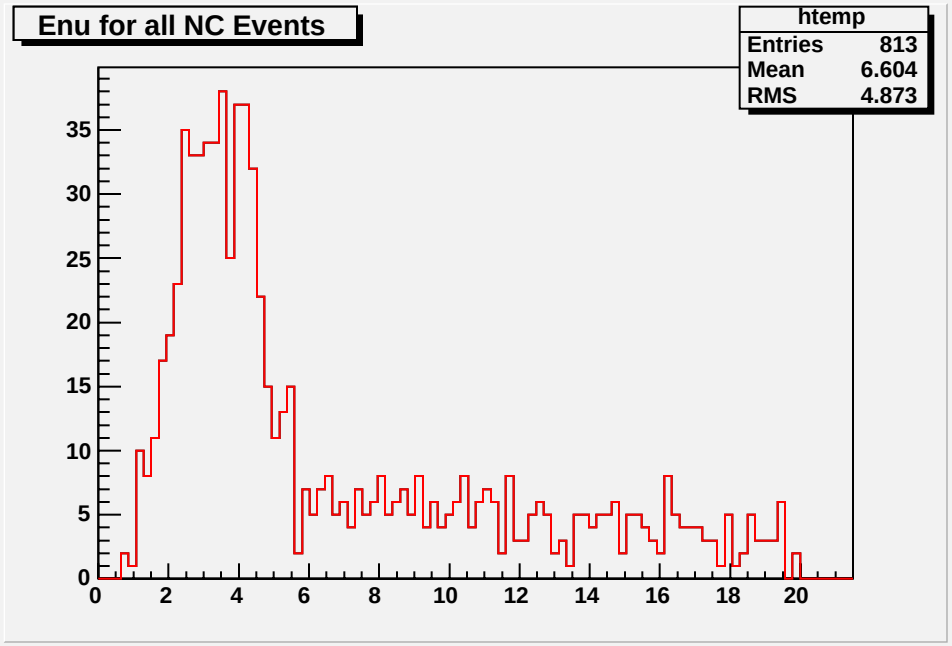

Track Finding Eff. vs Track Energy (far)
tp9
Entries 1992
Mean 1.447
Meany 0.8611
RMS 1.342
RMSy 0.3458
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5


Track Finding Eff. vs Neutrino Energy (far)
tp11
Entries 1530
Mean 3.186
Meany 0.9564
RMS 0.998
RMSy 0.2042
1
0.8
0.6
0.4
0.2
0
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5


Shower Finding Eff. (completeness>0.5) vs Visible Shower Energy (far
tp13
Entries 1972
Mean 1.732
Meany 0.8854
RMS 1.235
RMSy 0.3185
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5


Shower Finding Eff. (completeness>0.5) vs Neutrino Energy (far)
tp15
Entries 1895
Mean 3.246
Meany 0.9263
RMS 0.955
RMSy 0.2612
1
0.8
0.6
0.4
0.2
0
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5





Enu for NC events with tracks (Far Detector)

 # Entries 386 / 386

Mean 7.950246 / 7.950246

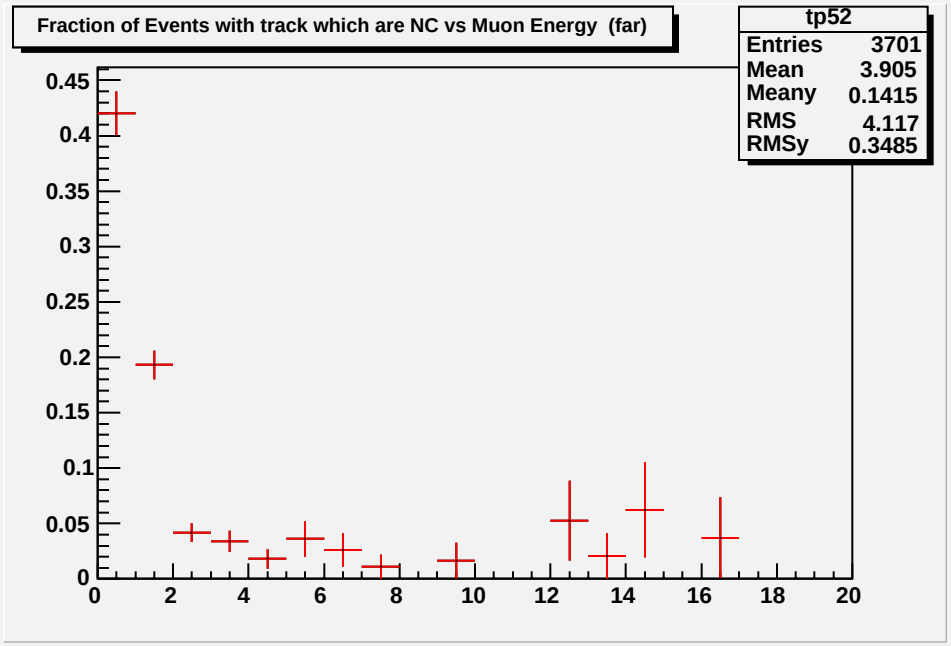
RMS 5.114452 / 5.114452

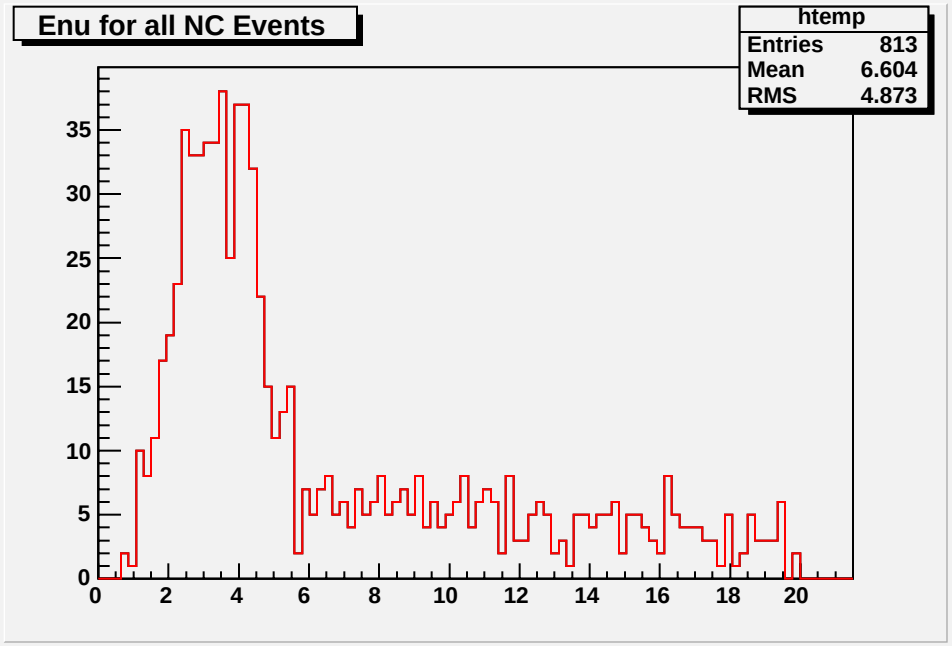
Enu for all NC Events (Far Detector)

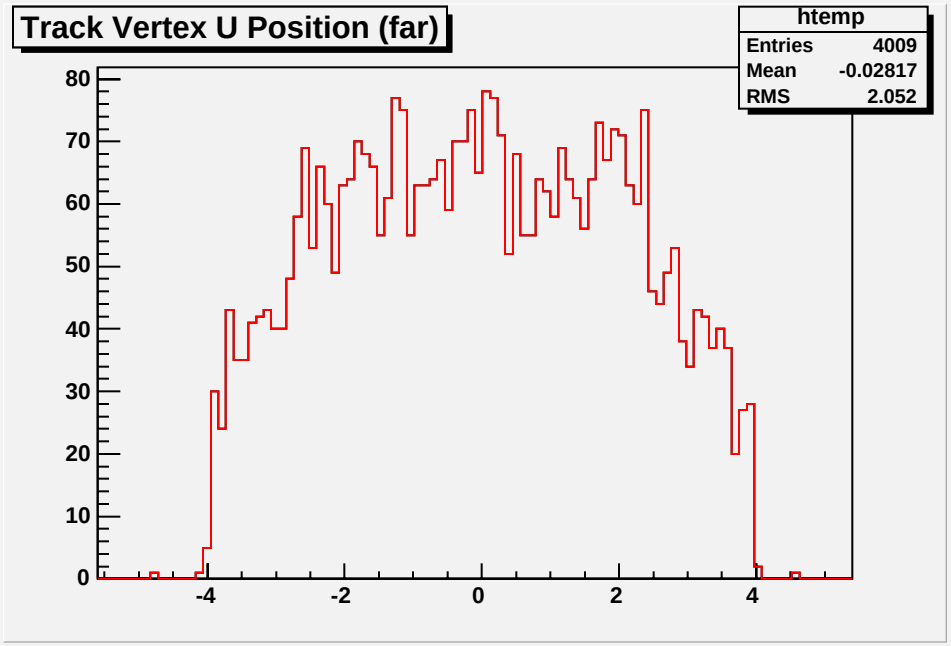
 # Entries 813 / 813

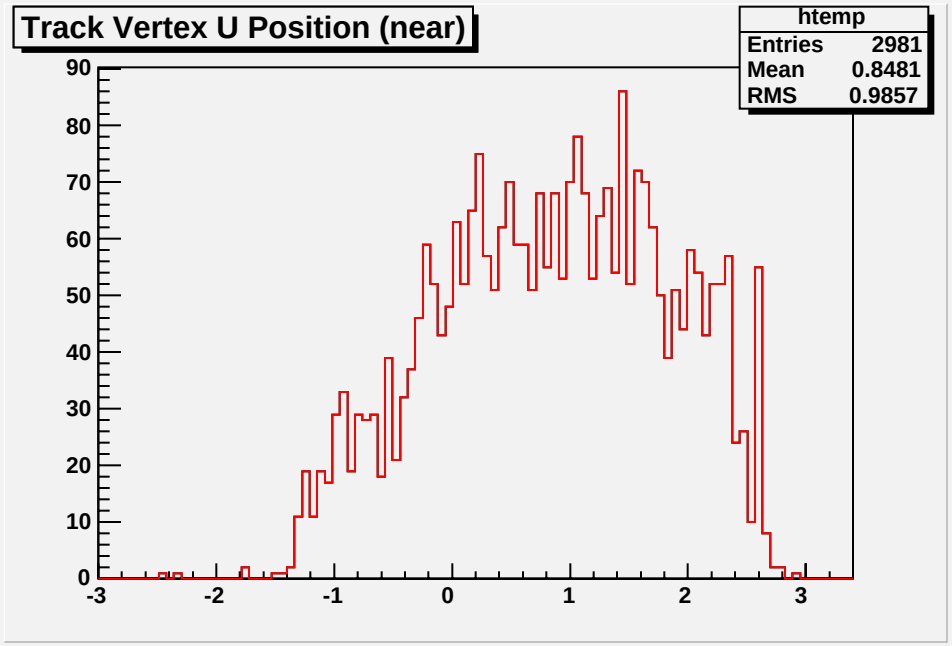
Mean 6.604336 / 6.604336

RMS 4.872687 / 4.872687


Fraction of Events with track which are NC vs Muon Energy (far)
tp52
Entries 3701
Mean 3.905
Meany 0.1415
RMS 4.117
RMSy 0.3485
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
0 2 4 6 8 10 12 14 16 18 20


Enu for all NC Events
htemp
Entries 813
Mean 6.604
RMS 4.873
35
30
25
20
15
10
5
0
0 2 4 6 8 10 12 14 16 18 20





Track Vertex U (Far Detector)

 # Entries 4009 / 4009

Mean -0.028167 / -0.028167

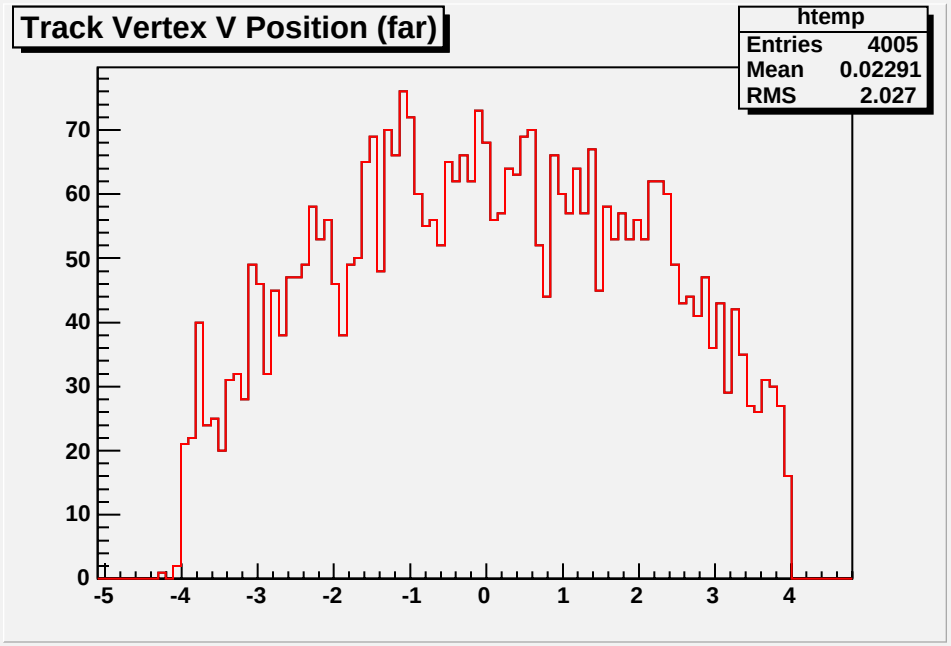
RMS 2.052329 / 2.052329

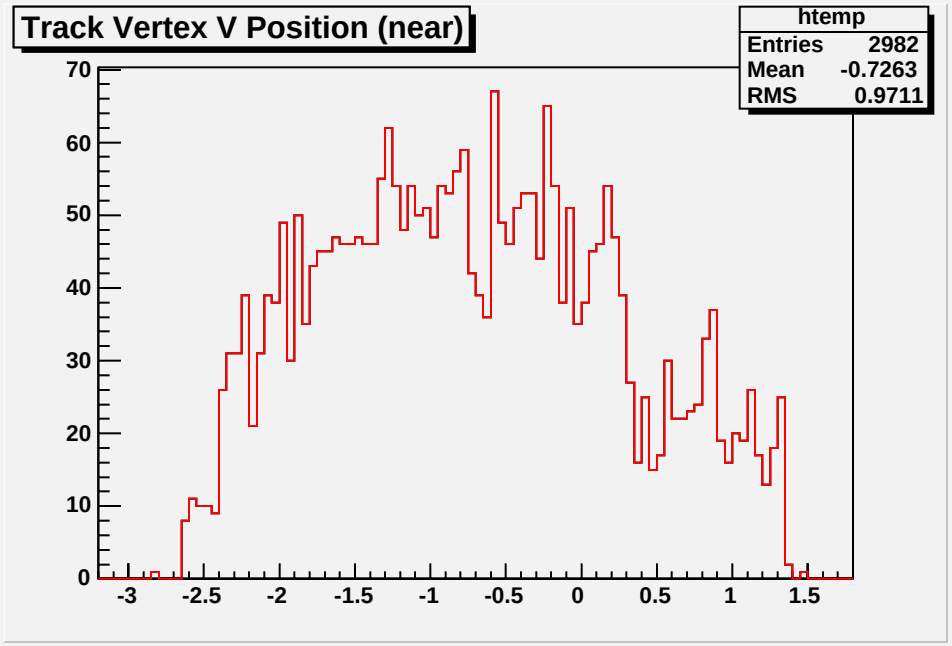
Track Vertex U (Near Detector)

 # Entries 2981 / 2981

Mean 0.848072 / 0.848072

RMS 0.985693 / 0.985693





Track Vertex V (Far Detector)

 # Entries 4005 / 4005

Mean 0.022910 / 0.022910

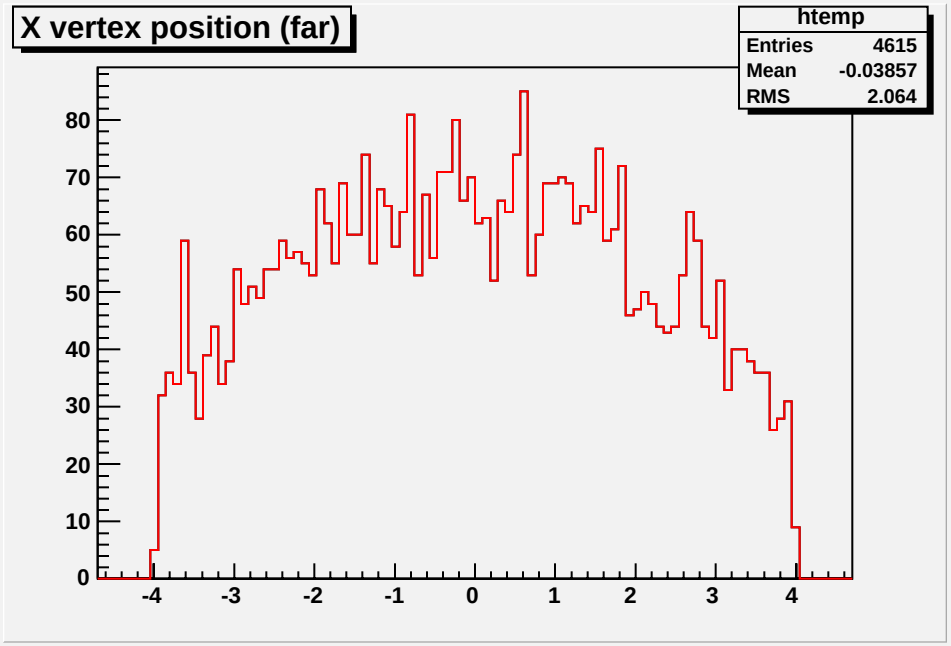
RMS 2.027454 / 2.027454

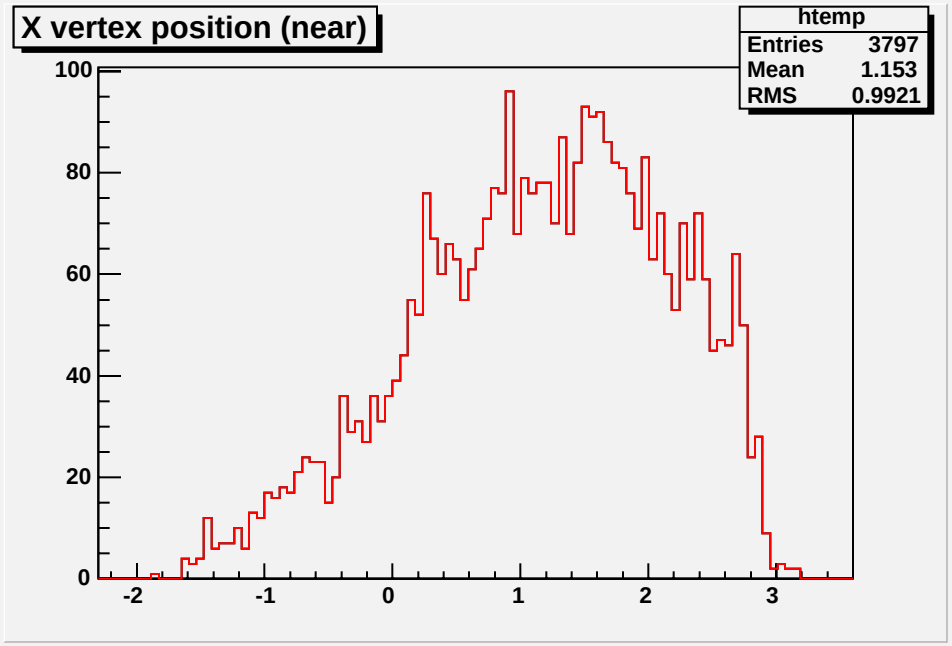
Track Vertex V (Near Detector)

 # Entries 2982 / 2982

Mean -0.726304 / -0.726304

RMS 0.971129 / 0.971129





Track Vertex X (Far Detector)

 # Entries 4615 / 4615

Mean -0.038566 / -0.038566

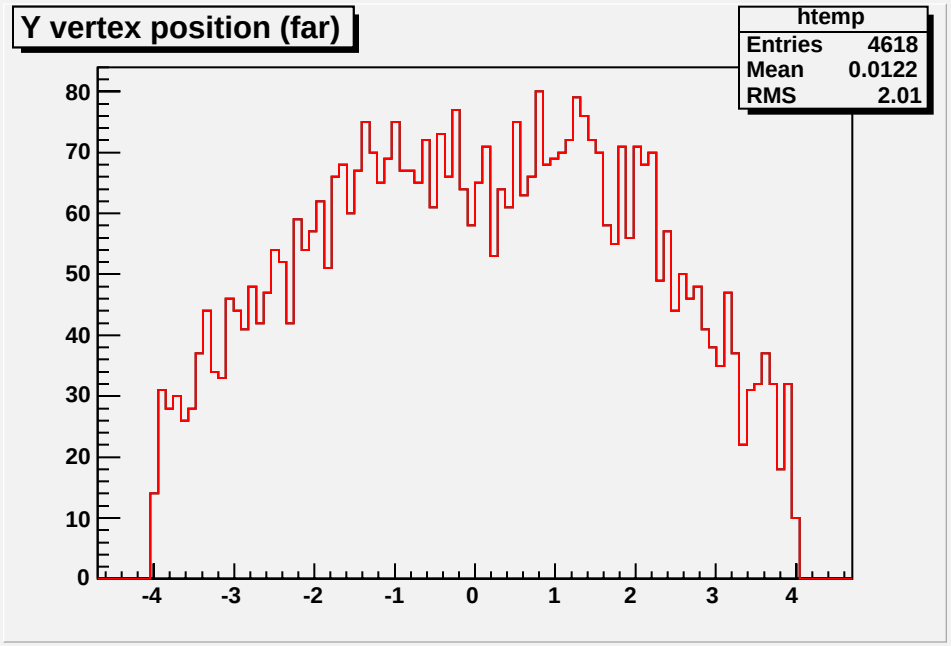
RMS 2.064045 / 2.064045

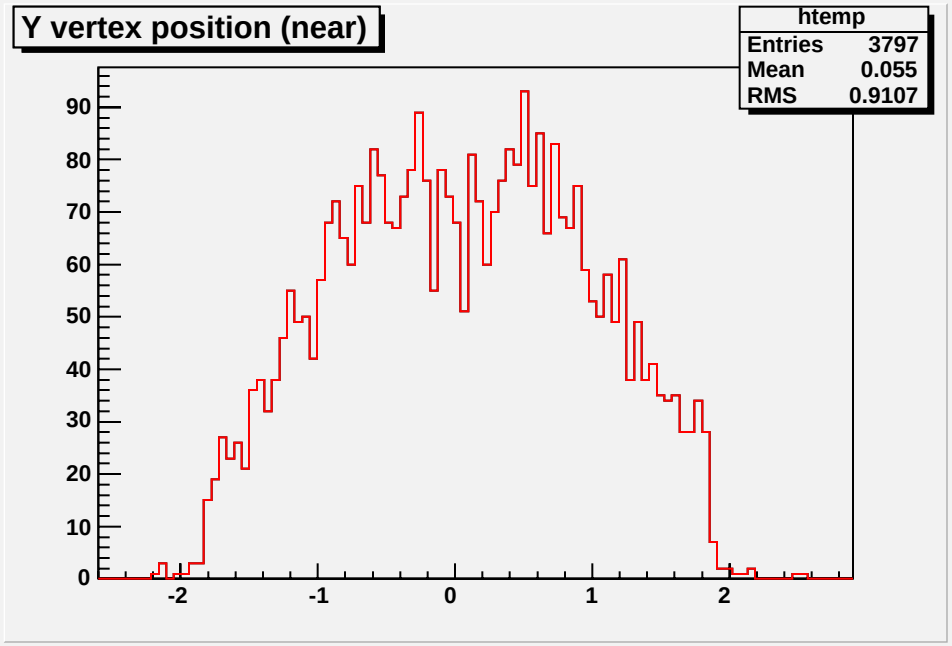
Tracks Vertex X (Near Detector)

 # Entries 3797 / 3797

Mean 1.153358 / 1.153358

RMS 0.992146 / 0.992146





Track Vertex Y (Far Detector)

 # Entries 4618 / 4618

Mean 0.012204 / 0.012204

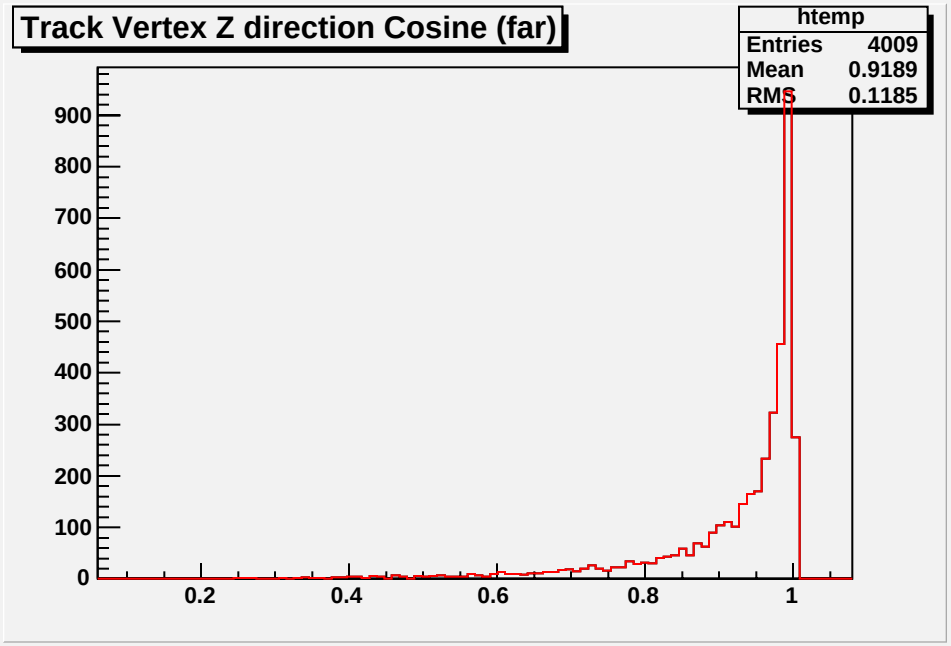
RMS 2.010104 / 2.010104

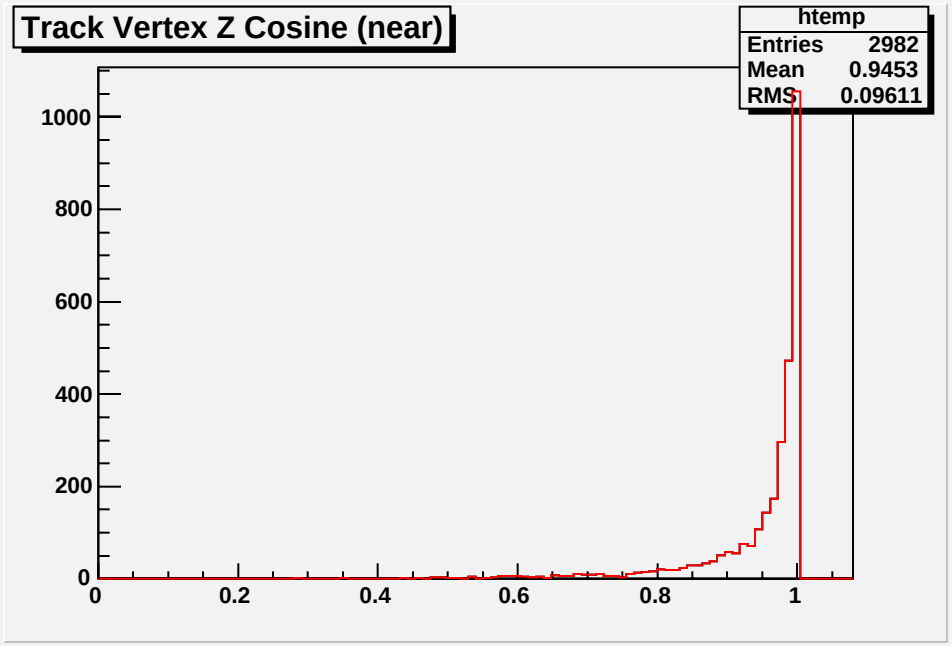
Track Vertex Y (Near Detector)

 # Entries 3797 / 3797

Mean 0.055003 / 0.055003

RMS 0.910677 / 0.910677





Track Vertex Z Cosine(Far Detector)

 # Entries 4009 / 4009

Mean 0.918938 / 0.918938

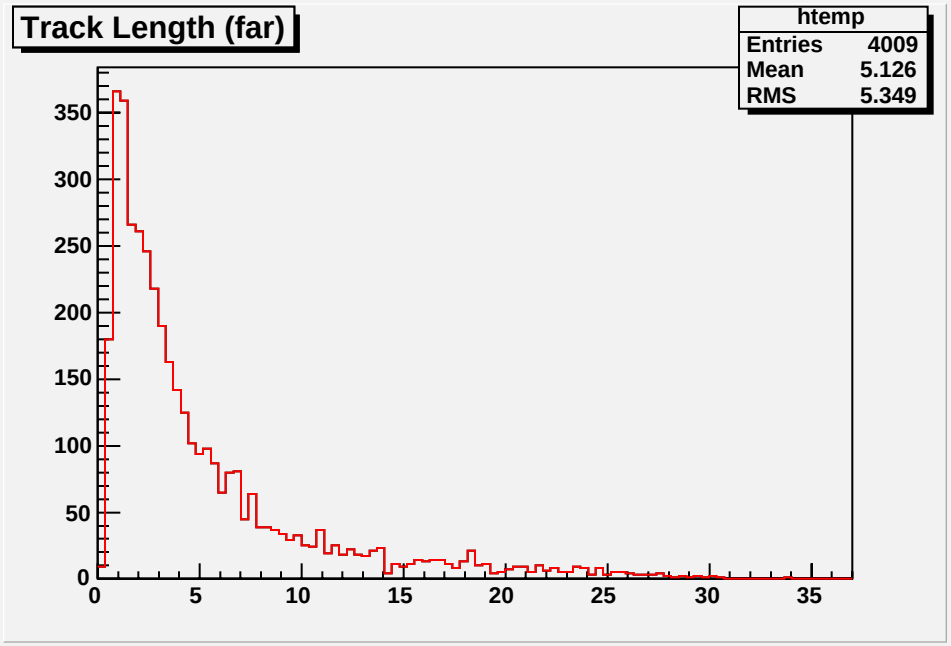
RMS 0.118492 / 0.118492

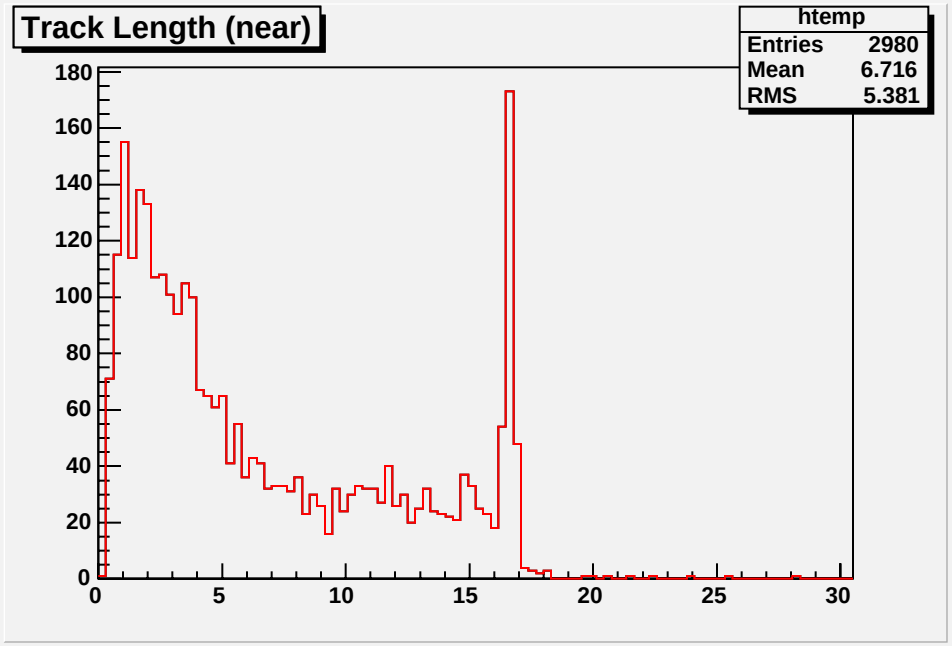
Track Vertex Z Cosine (Near)

 # Entries 2982 / 2982

Mean 0.945336 / 0.945336

RMS 0.096114 / 0.096114





Track Length (Far Detector)

 # Entries 4009 / 4009

Mean 5.125739 / 5.125739

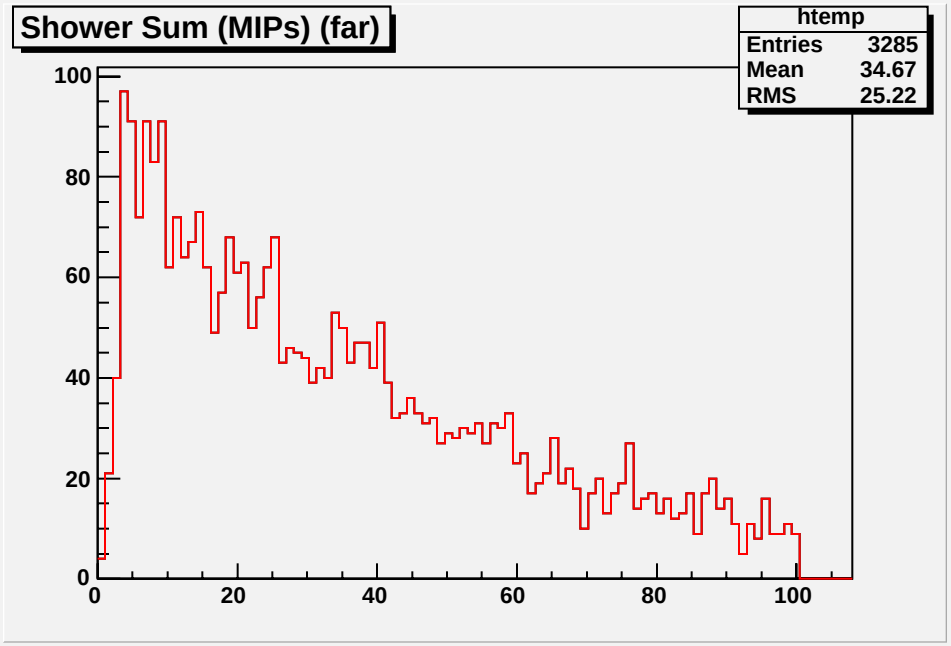
RMS 5.348662 / 5.348662

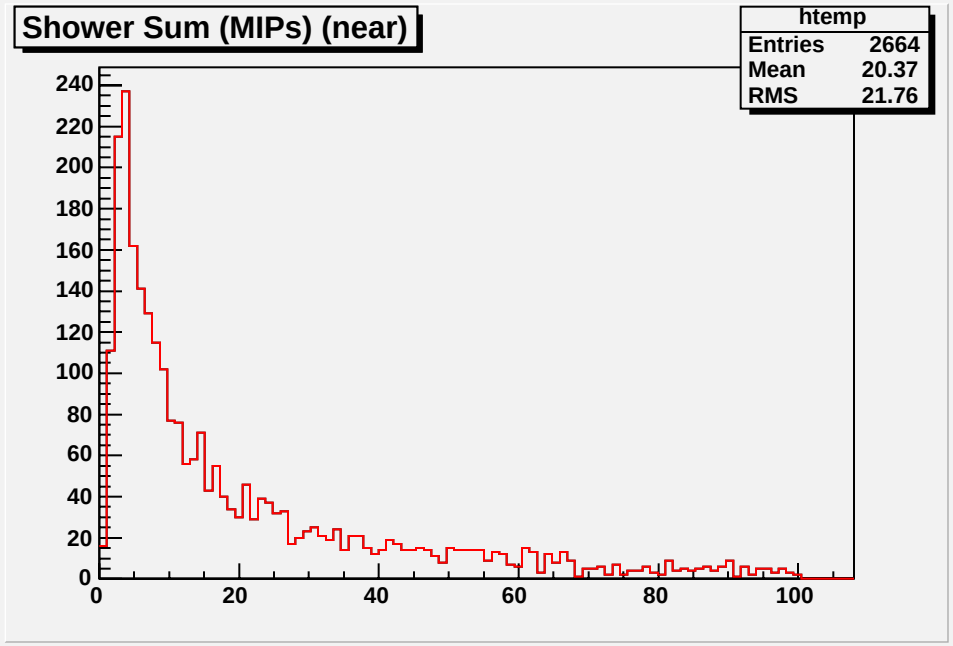
Track Length (Near Detector)

 # Entries 2980 / 2980

Mean 6.715608 / 6.715608

RMS 5.381053 / 5.381053





Shower Sum MIPs (Far)

 # Entries 3285 / 3285

Mean 34.666310 / 34.666310

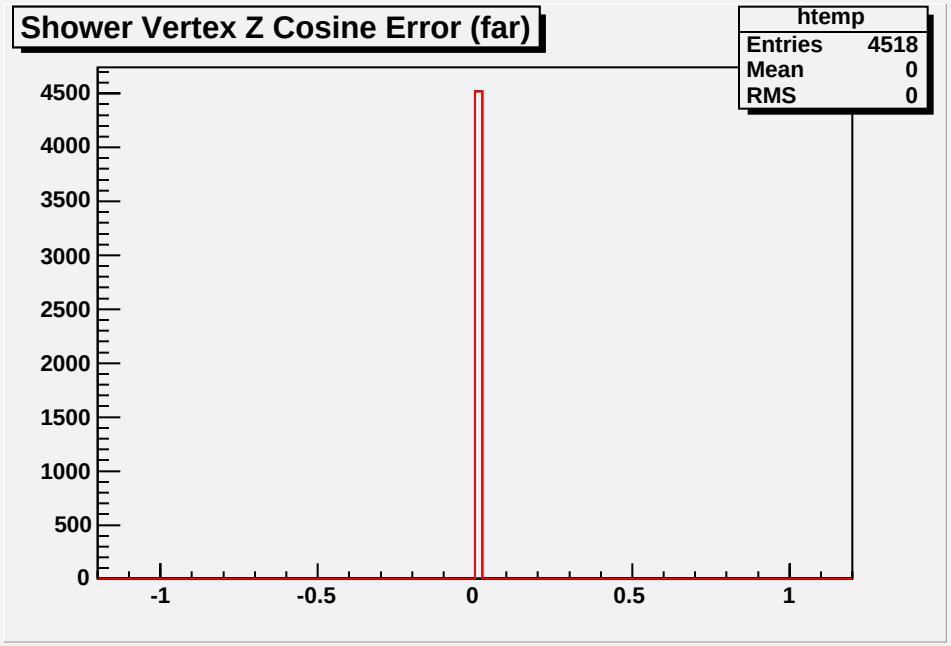
RMS 25.215659 / 25.215659

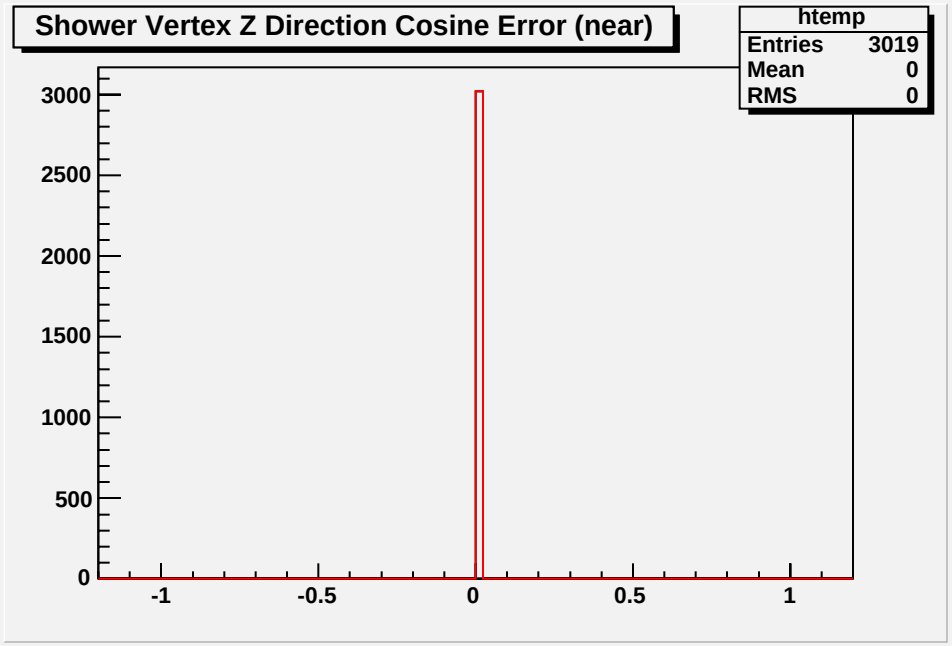
Shower Sum MIPs (Near)

 # Entries 2664 / 2664

Mean 20.374262 / 20.374262

RMS 21.760913 / 21.760913





Entries 4518 / 4518

Mean 0.000000 / 0.000000

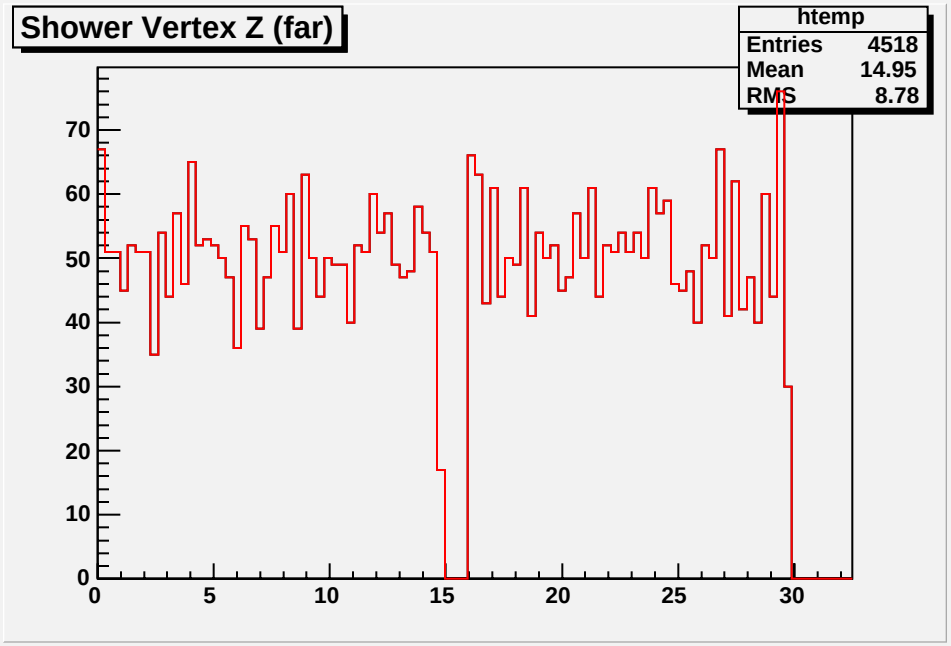
RMS 0.000000 / 0.000000

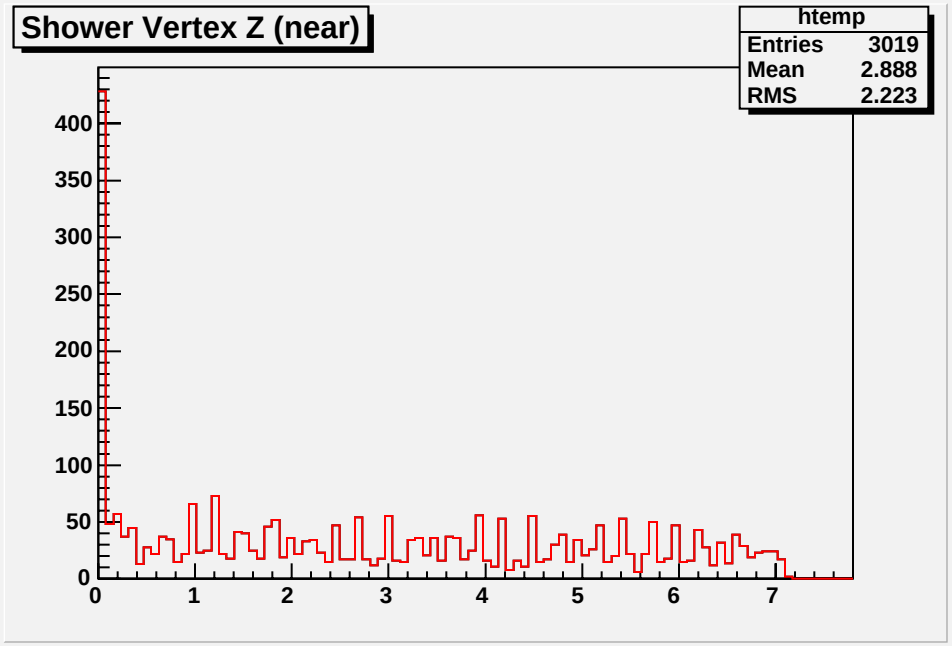
Shower Vertex Z Cosine Error (Near)

Entries 3019 / 3019

Mean 0.000000 / 0.000000

RMS 0.000000 / 0.000000





Shower Vertex Z (Far Detector)

 # Entries 4518 / 4518

Mean 14.953936 / 0.000000

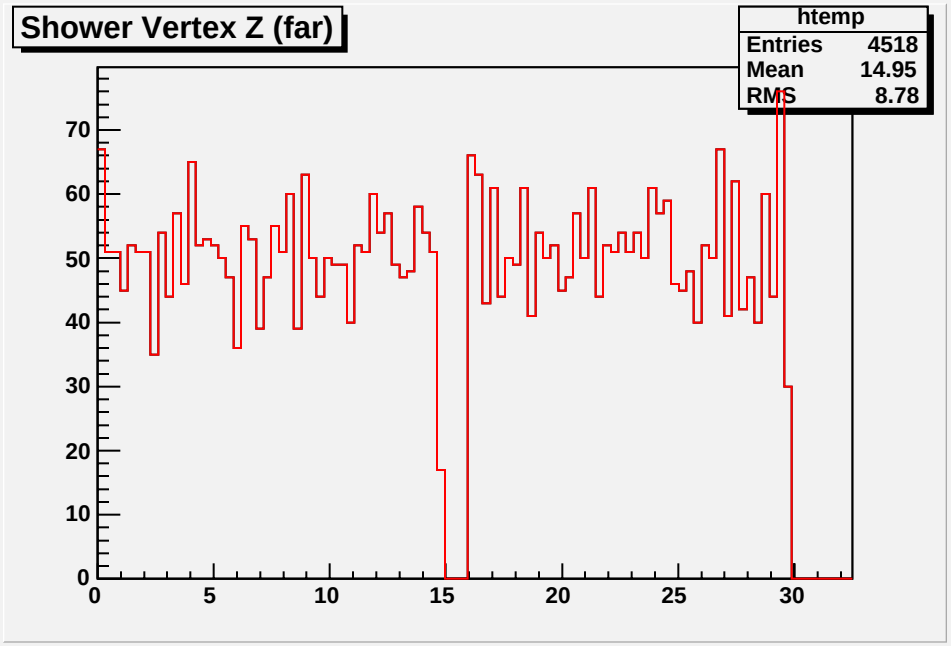
RMS 8.779815 / 0.000000

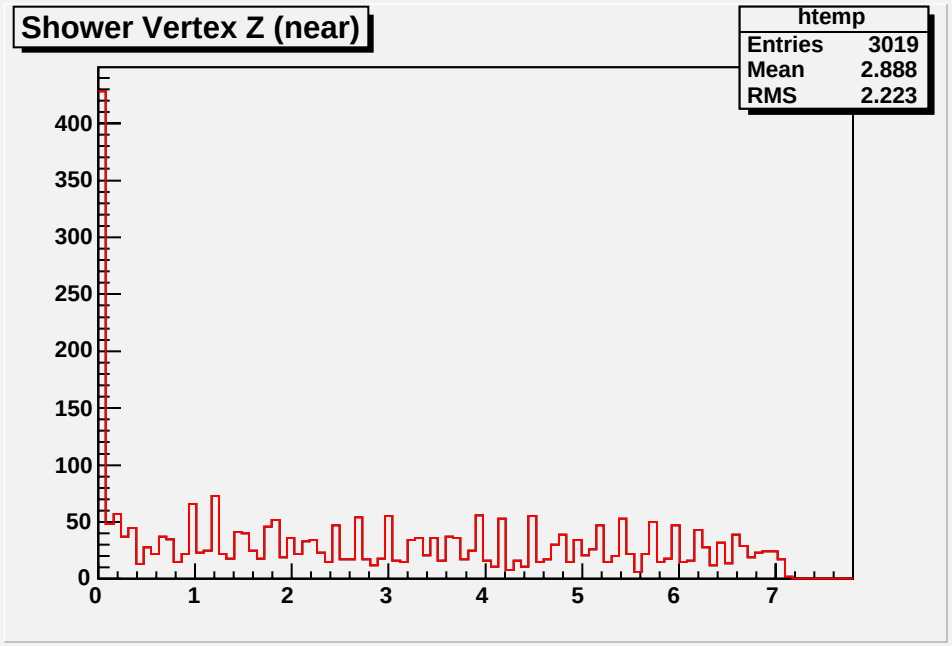
Shower Vertex Z(Near Detector)

 # Entries 4518 / 3019

Mean 14.953936 / 2.887663

RMS 8.779815 / 2.222668





Shower Vertex Z (Far Detector)

 # Entries 4518 / 4518

Mean 14.953936 / 0.000000

RMS 8.779815 / 0.000000

Shower Vertex Z(Near Detector)

 # Entries 4518 / 3019

Mean 14.953936 / 2.887663

RMS 8.779815 / 2.222668