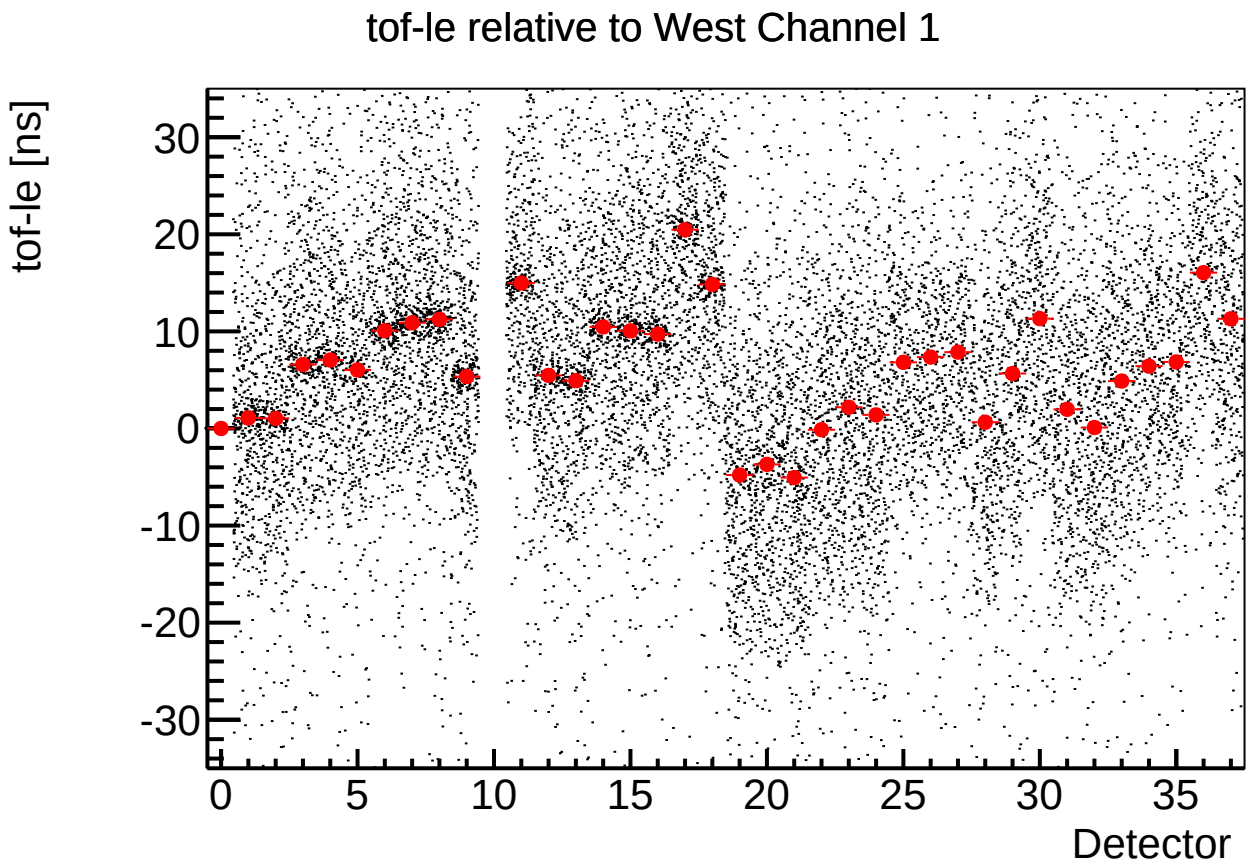
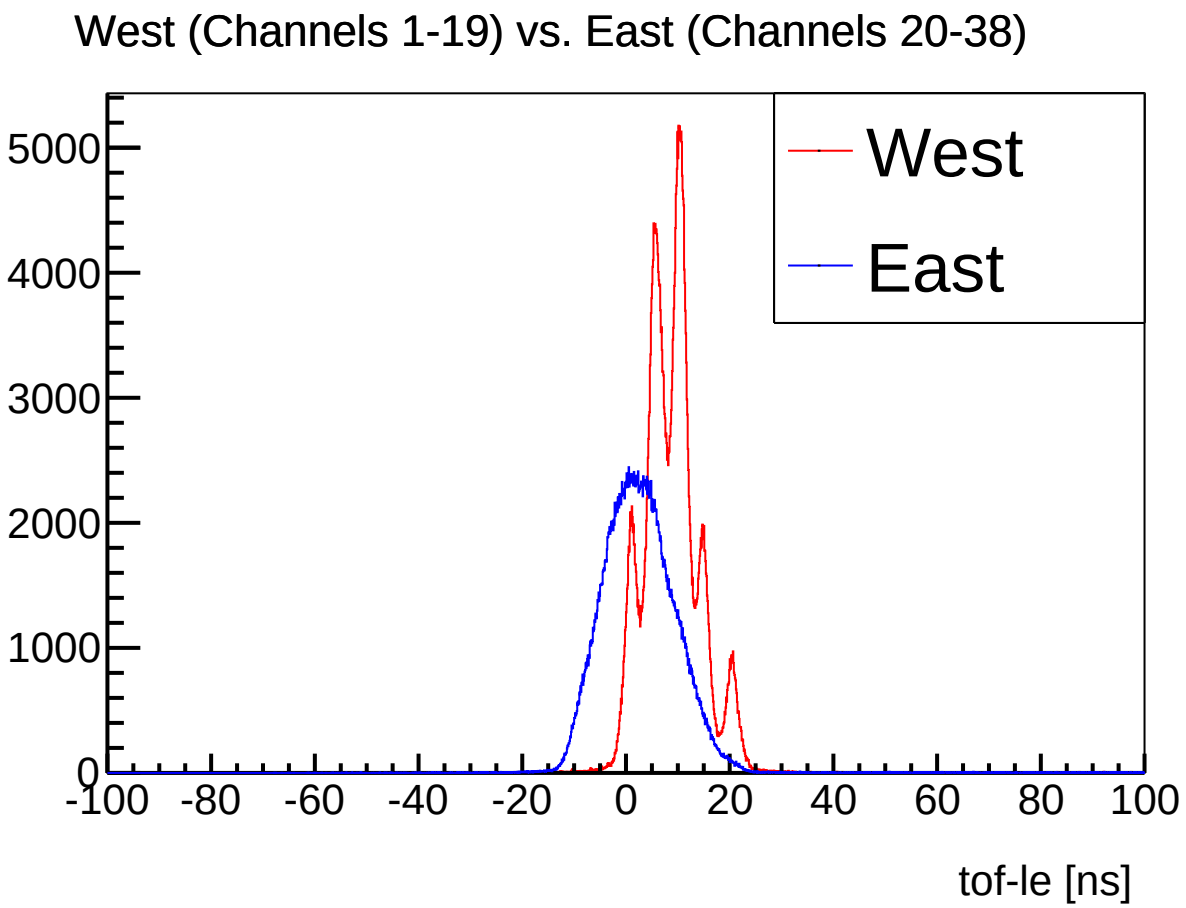
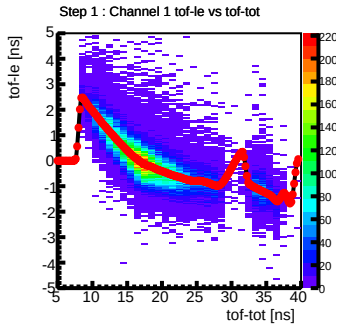
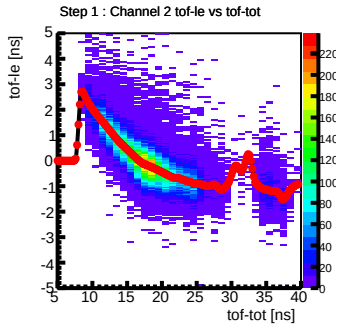
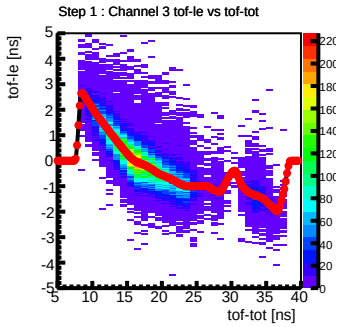
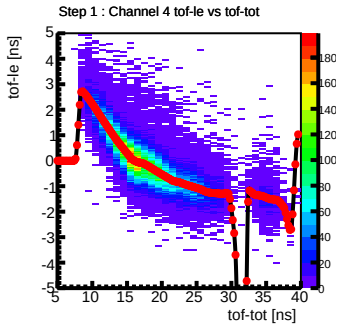

tof-le relative to West Channel 1
tof-le [ns]
30
20
10
0
-10
-20
-30
0
5
10
15
20
25
30
35
Detector

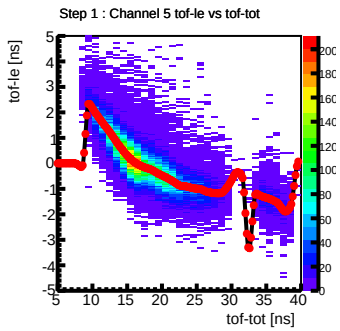

West (Channels 1-19) vs. East (Channels 20-38)
West
East
5000
4000
3000
2000
1000
0
-100
-80
-60
-40
-20
0
20
40
60
80
100
tof-le [ns]

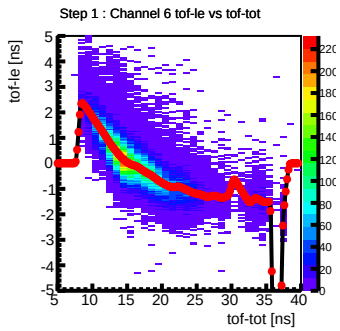

Step 1 : Channel 1 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

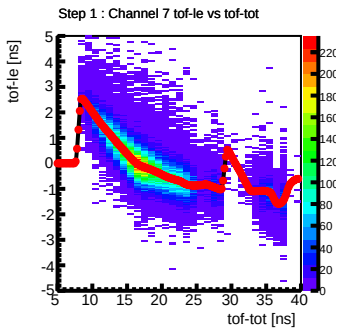

Step 1 : Channel 2 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

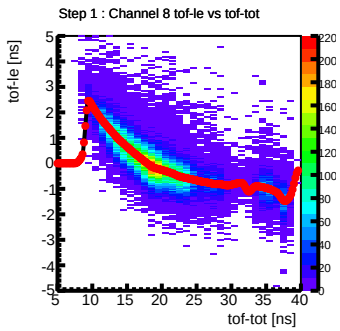

Step 1 : Channel 3 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

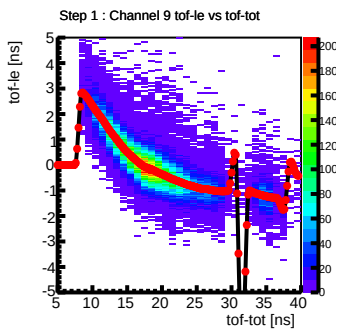

Step 1 : Channel 4 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

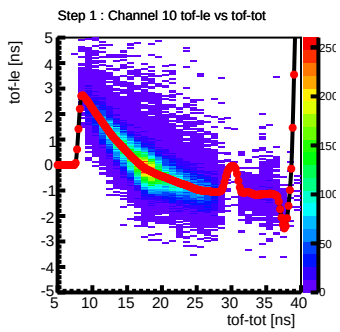

Step 1 : Channel 5 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

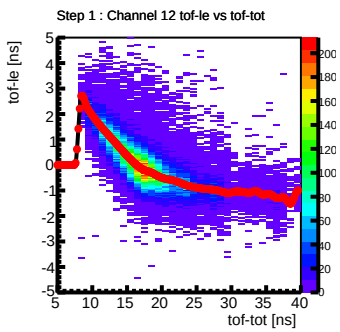

Step 1 : Channel 6 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

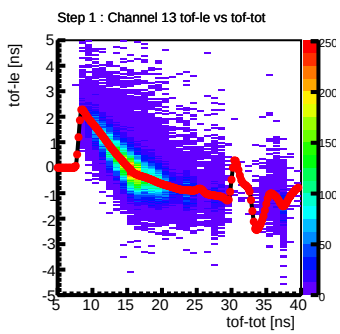

Step 1 : Channel 7 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

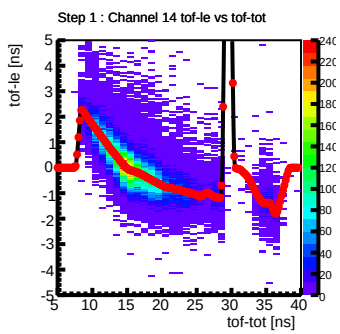

Step 1 : Channel 8 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

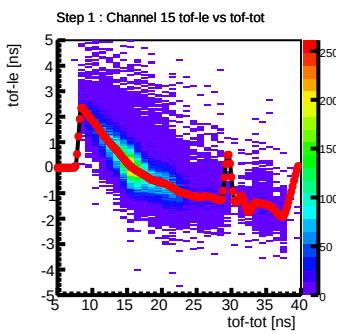

Step 1 : Channel 9 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

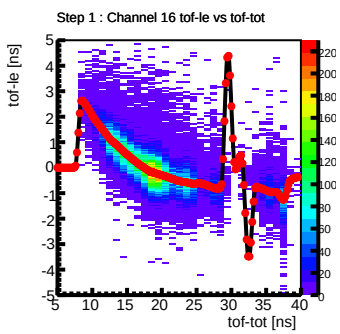

Step 1 : Channel 10 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

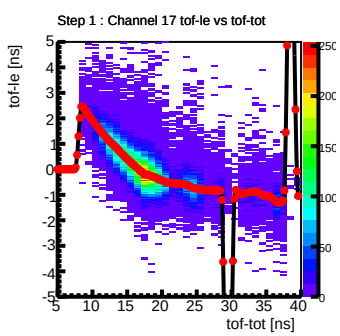

Step 1 : Channel 12 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

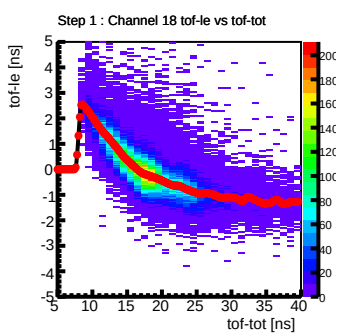

Step 1 : Channel 13 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

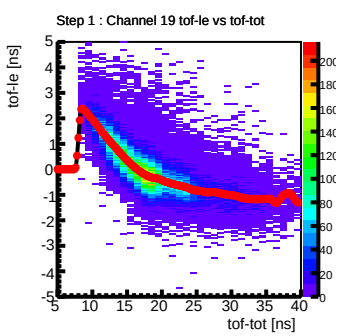

Step 1 : Channel 14 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

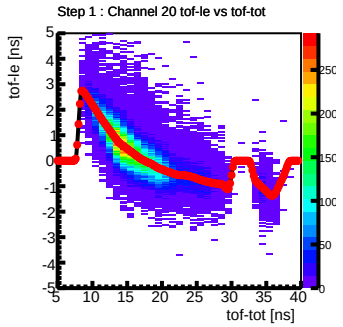

Step 1 : Channel 15 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

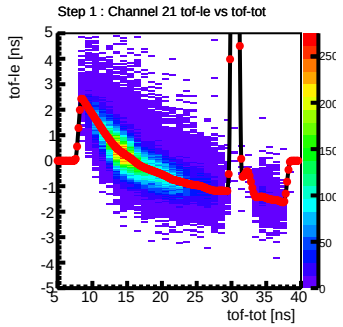

Step 1 : Channel 16 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

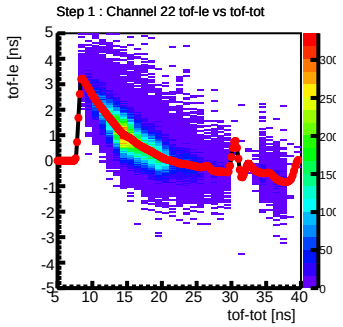

Step 1 : Channel 17 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

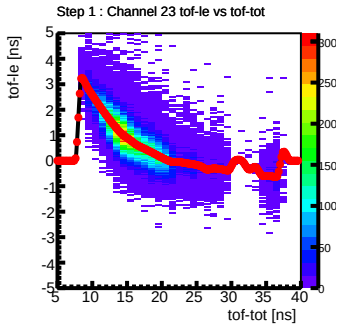

Step 1 : Channel 18 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

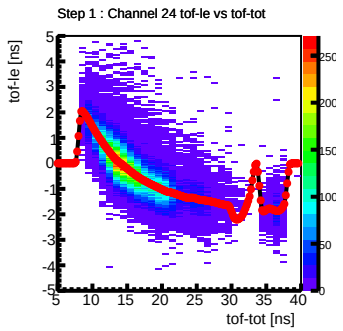

Step 1 : Channel 19 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

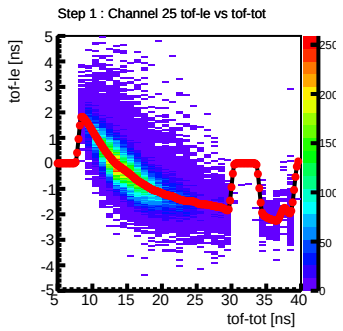

Step 1 : Channel 20 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

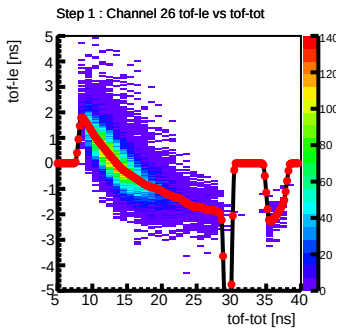

Step 1 : Channel 21 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

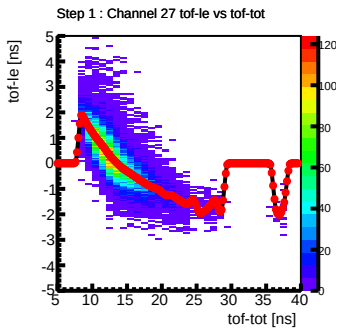

Step 1 : Channel 22 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

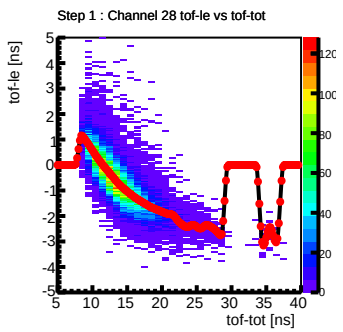

Step 1 : Channel 23 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

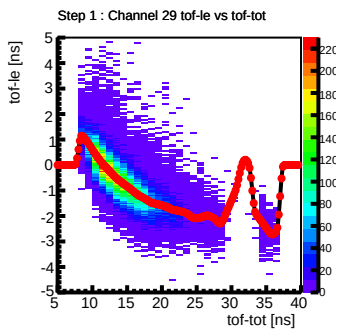

Step 1 : Channel 24 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

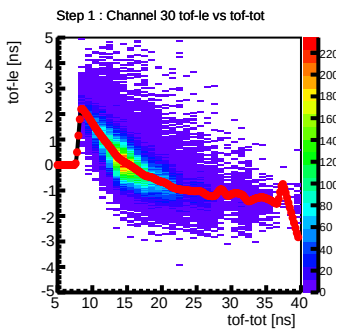

Step 1 : Channel 25 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

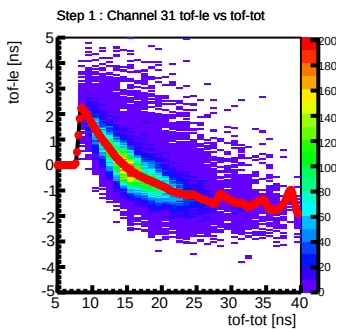

Step 1 : Channel 26 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

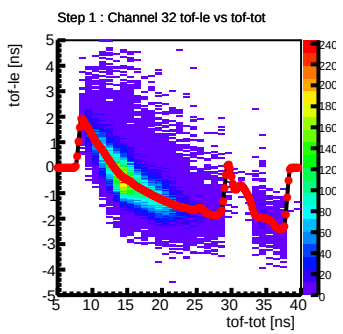

Step 1 : Channel 27 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

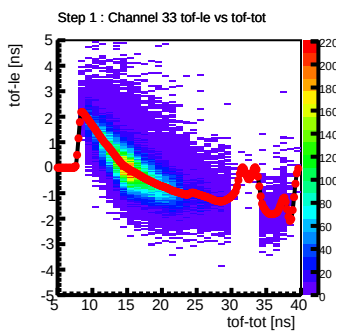

Step 1 : Channel 28 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

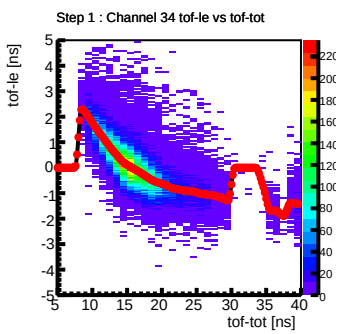

Step 1 : Channel 29 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

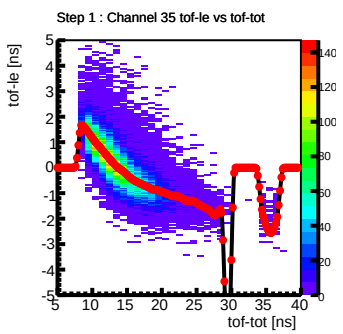

Step 1 : Channel 30 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

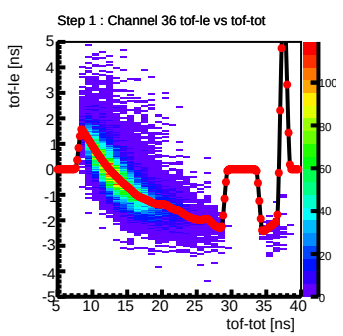

Step 1 : Channel 31 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

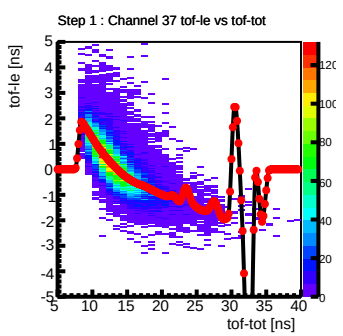

Step 1 : Channel 32 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

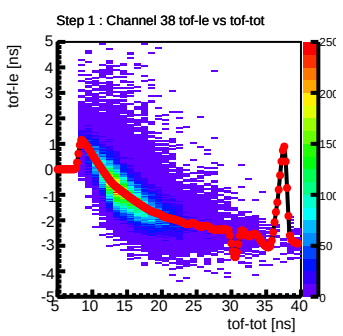

Step 1 : Channel 33 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

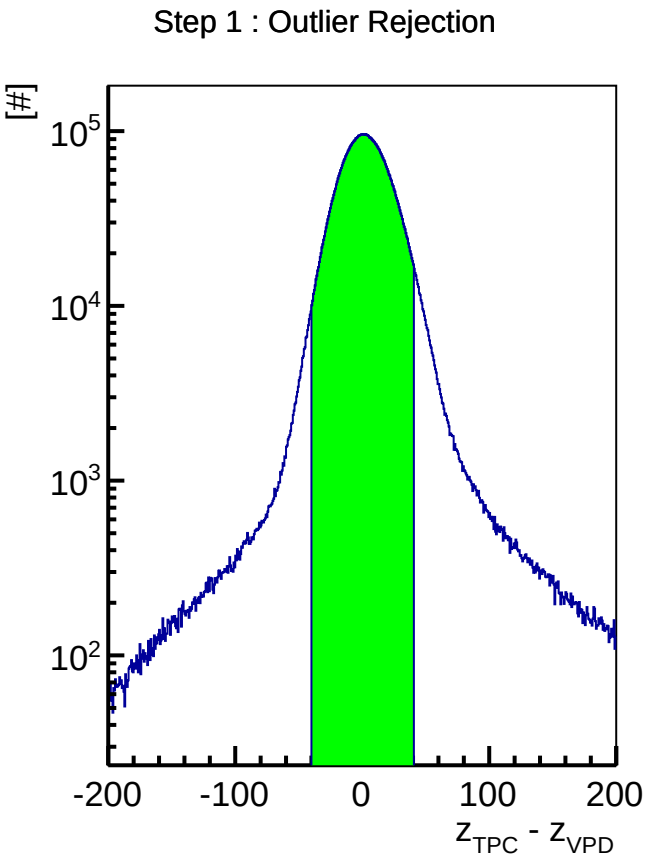

Step 1 : Channel 34 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

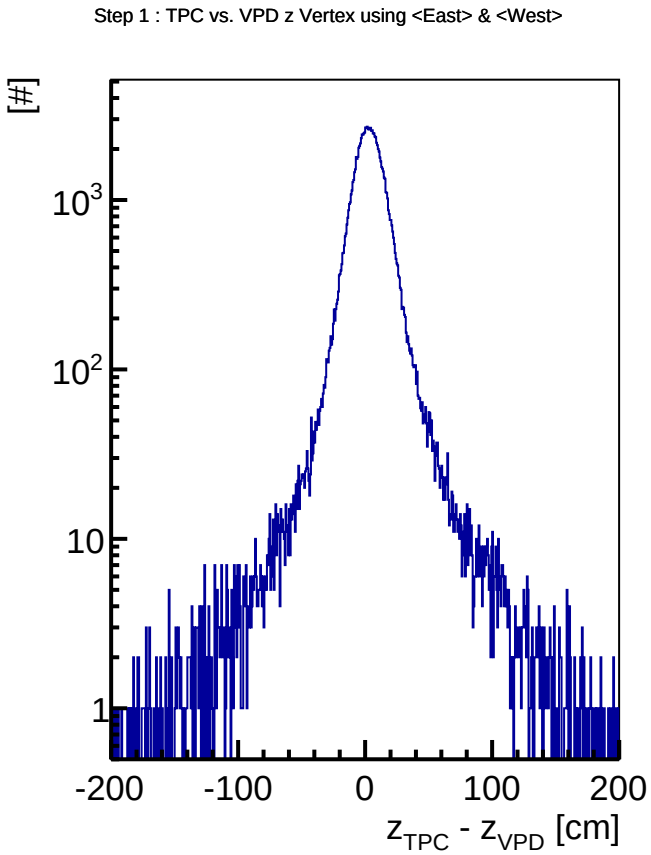

Step 1 : Channel 35 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

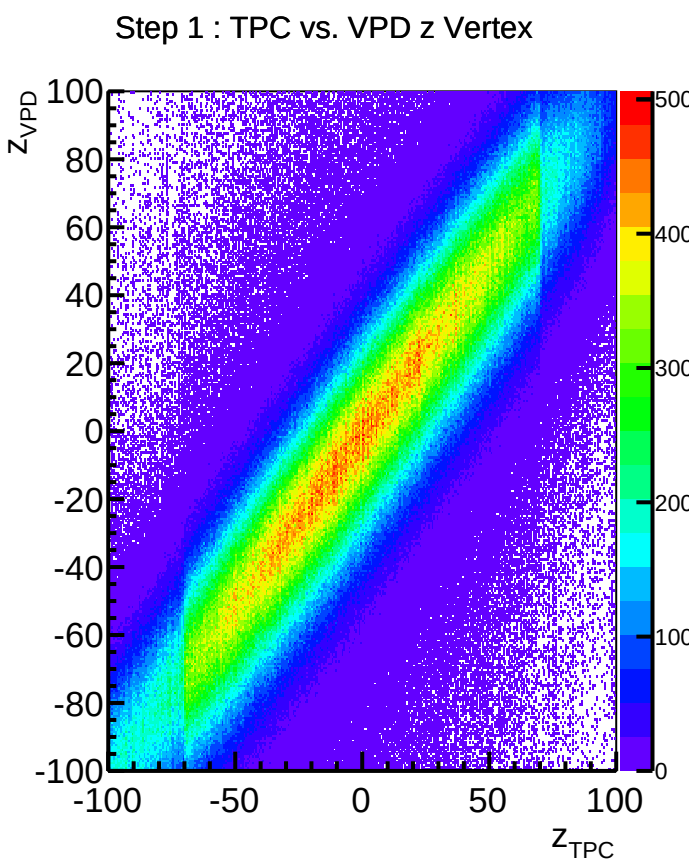

Step 1 : Channel 36 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

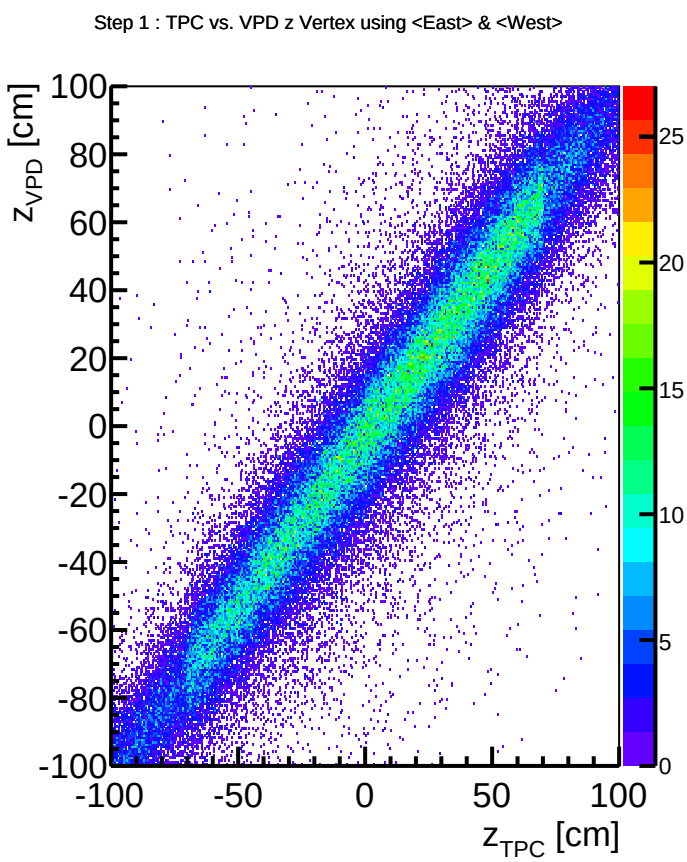

Step 1 : Channel 37 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

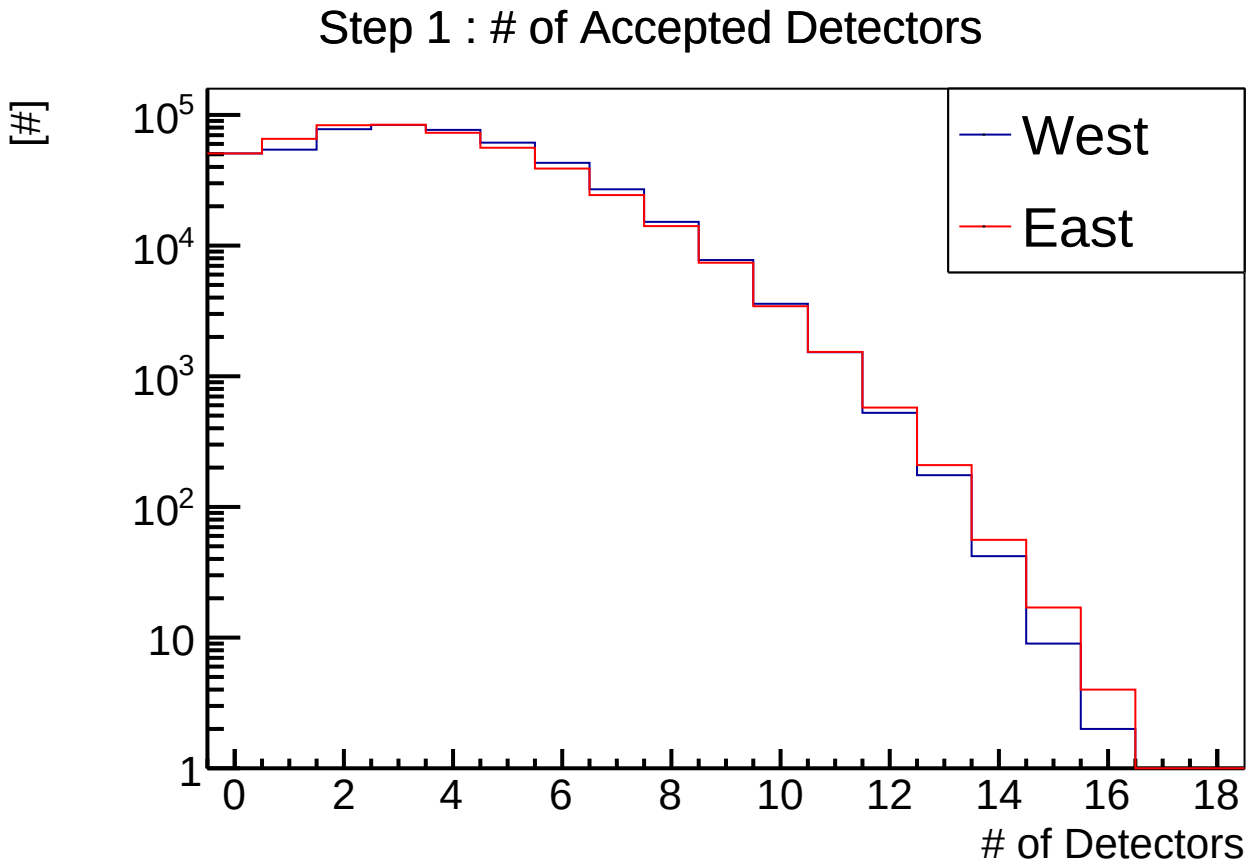

Step 1 : Channel 38 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

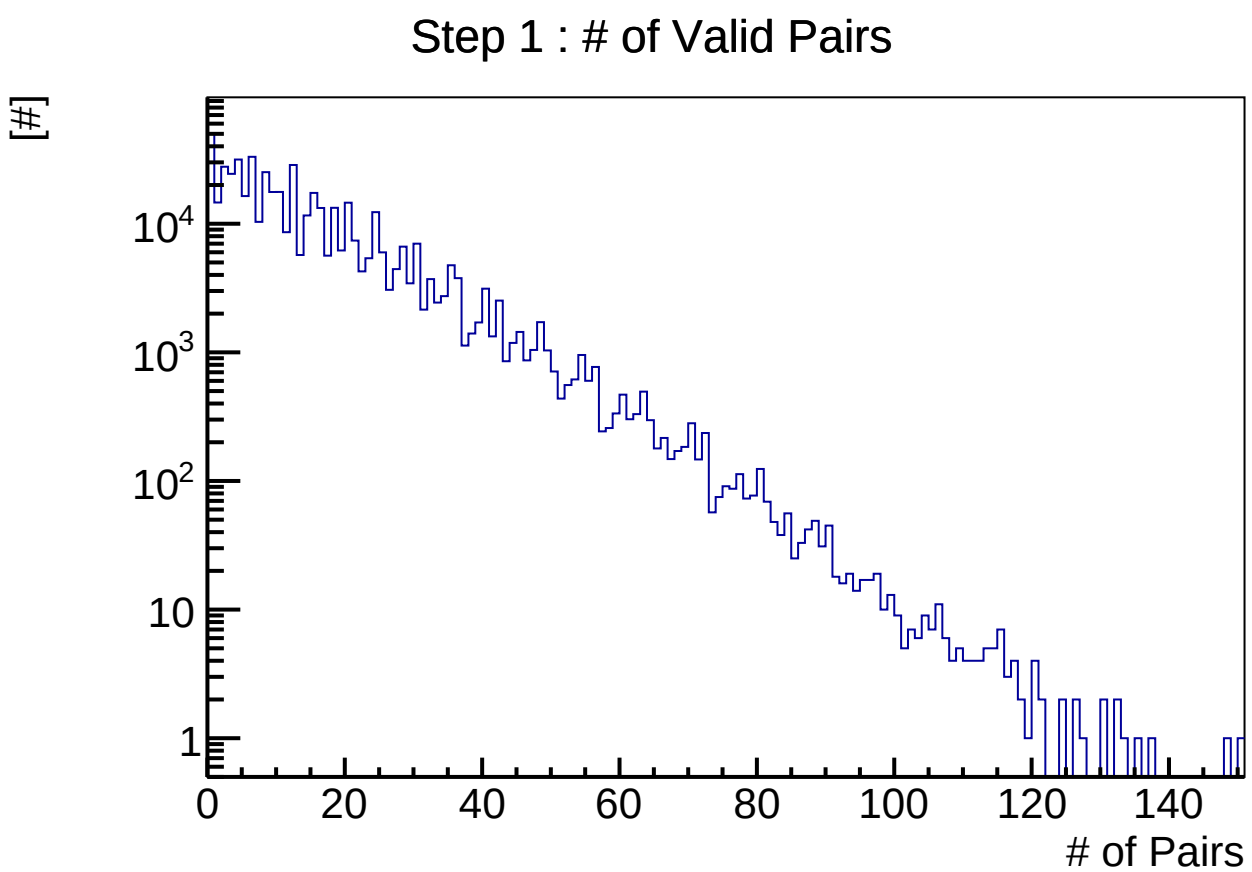

Step 1 : Outlier Rejection
[#]
10^5
10^4
10^3
10^2
-200
-100
0
100
200
z_{TPC} - z_{VPD}

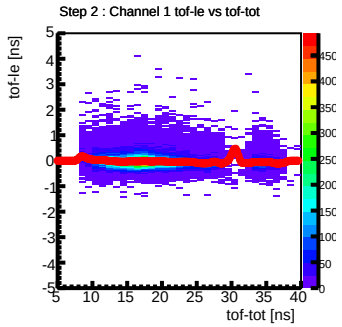

Step 1 : TPC vs. VPD z Vertex using <East> & <West>
[#]
10^3
10^2
10
1
-200
-100
0
100
200
z_{TPC} - z_{VPD} [cm]

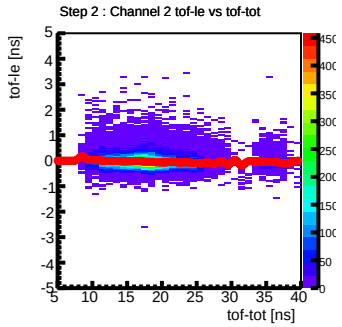

Step 1 : TPC vs. VPD z Vertex
z_{VPD}
100
80
60
40
20
0
-20
-40
-60
-80
-100
-100
-50
0
50
100
z_{TPC}
500
400
300
200
100
0

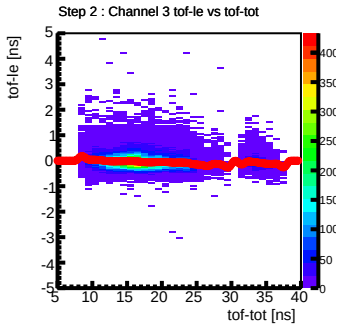

Step 1 : TPC vs. VPD z Vertex using <East> & <West>
z_{VPD} [cm]
100
80
60
40
20
0
-20
-40
-60
-80
-100
-100
-50
0
50
100
z_{TPC} [cm]
25
20
15
10
5
0

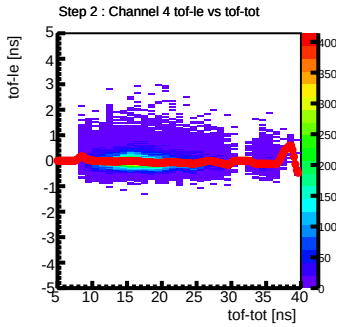

Step 1 : # of Accepted Detectors
[#]
West
East
# of Detectors

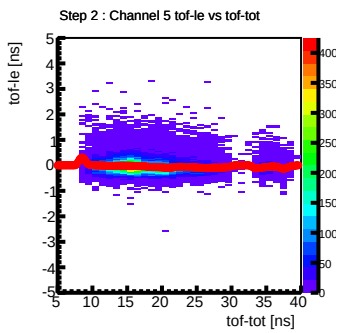

Step 1 : # of Valid Pairs
[#]
# of Pairs

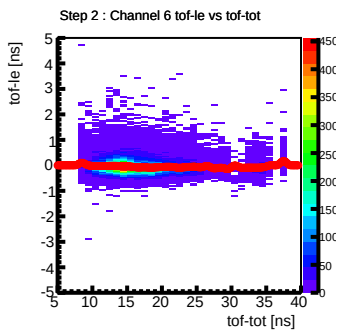

Step 2 : Channel 1 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

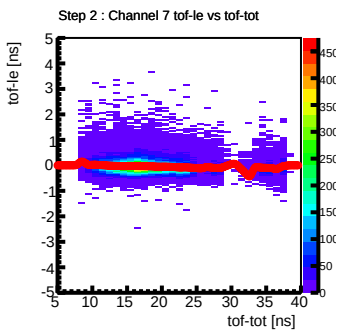

Step 2 : Channel 2 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

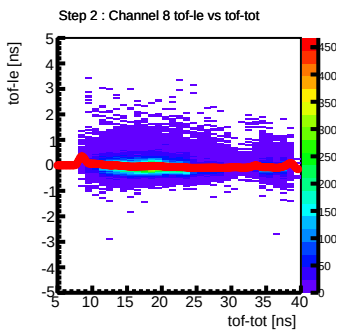

Step 2 : Channel 3 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

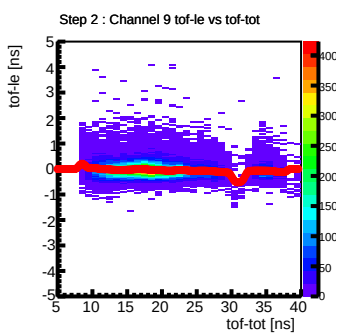

Step 2 : Channel 4 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

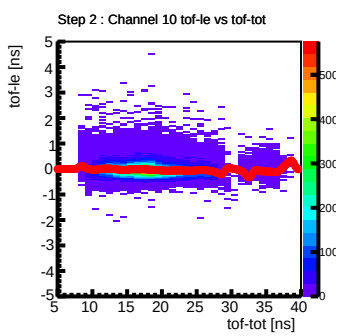

Step 2 : Channel 5 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

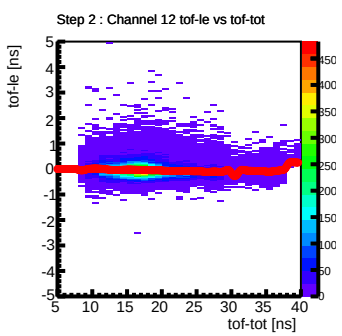

Step 2 : Channel 6 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

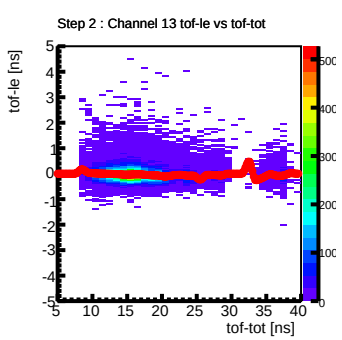

Step 2 : Channel 7 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

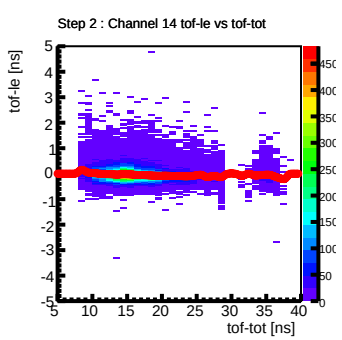

Step 2 : Channel 8 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

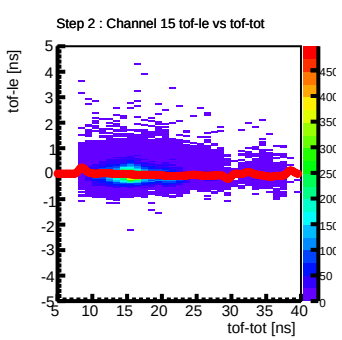

Step 2 : Channel 9 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

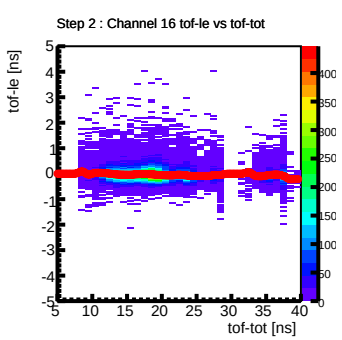

Step 2 : Channel 10 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

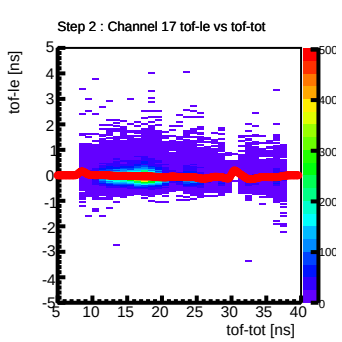

Step 2 : Channel 12 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

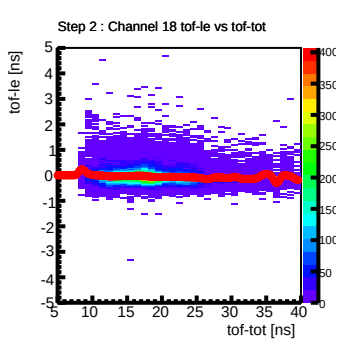

Step 2 : Channel 13 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

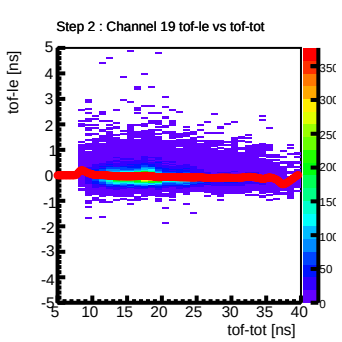

Step 2 : Channel 14 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

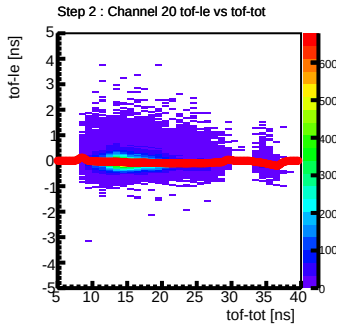

Step 2 : Channel 15 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

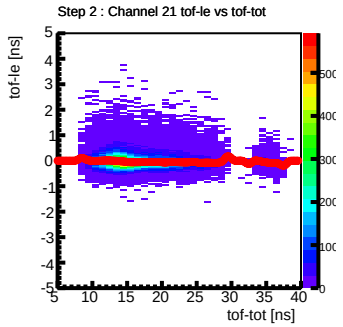

Step 2 : Channel 16 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

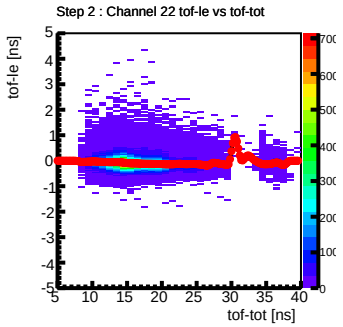

Step 2 : Channel 17 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

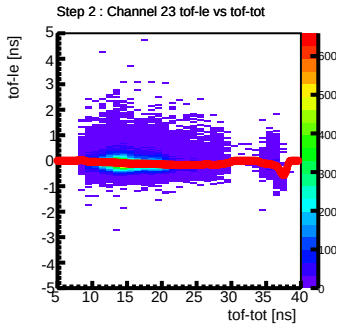

Step 2 : Channel 18 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

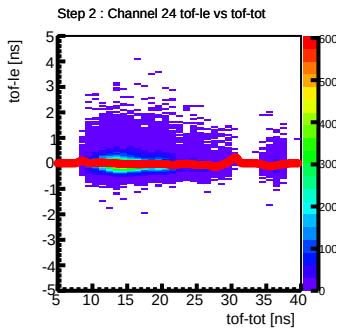

Step 2 : Channel 19 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

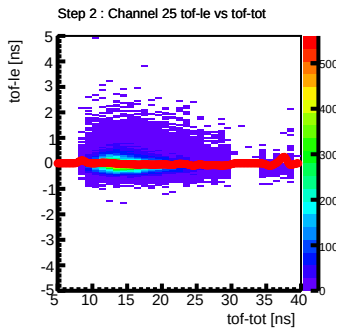

Step 2 : Channel 20 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

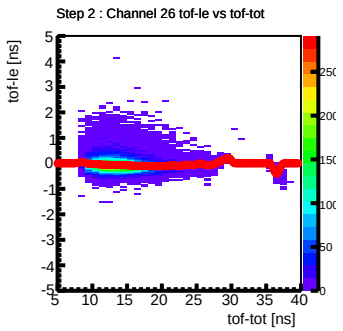

Step 2 : Channel 21 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

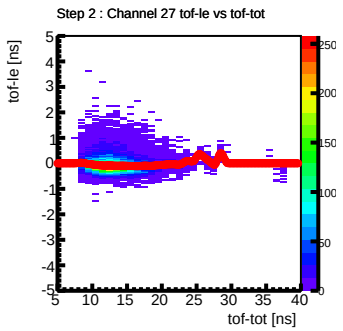

Step 2 : Channel 22 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

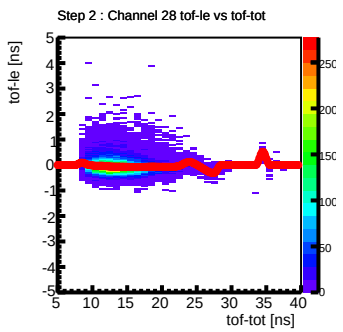

Step 2 : Channel 23 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

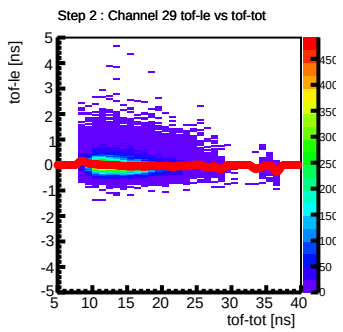

Step 2 : Channel 24 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

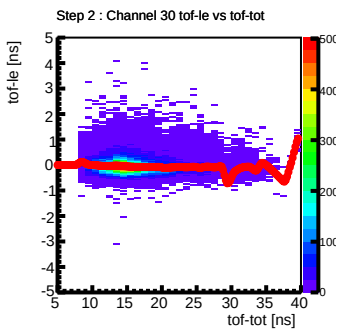

Step 2 : Channel 25 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

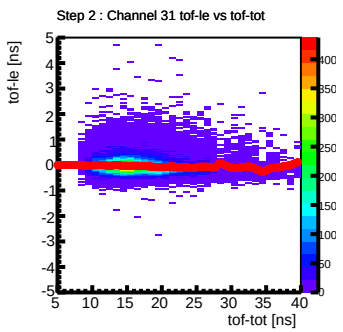

Step 2 : Channel 26 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

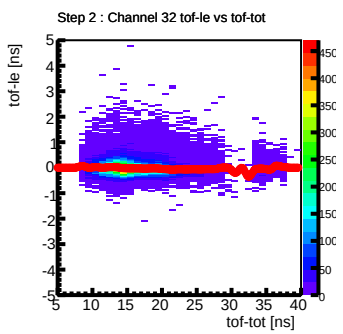

Step 2 : Channel 27 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

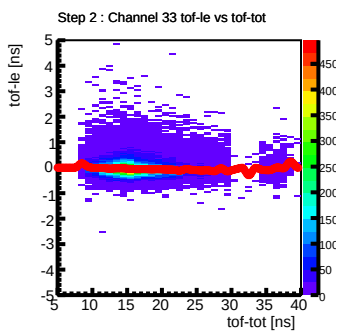

Step 2 : Channel 28 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

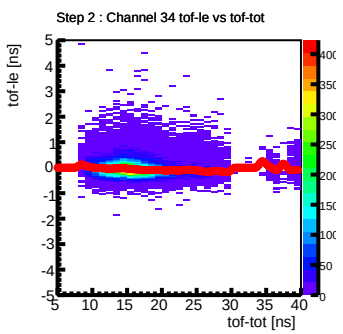

Step 2 : Channel 29 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

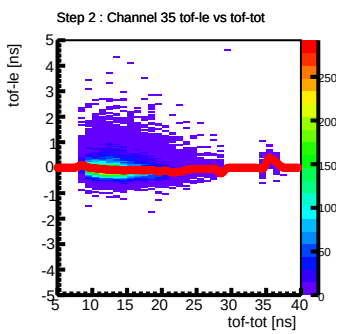

Step 2 : Channel 30 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

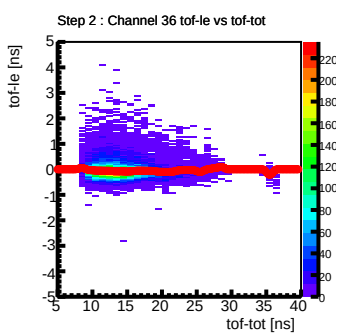

Step 2 : Channel 31 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

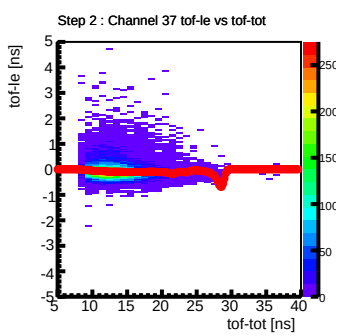

Step 2 : Channel 32 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

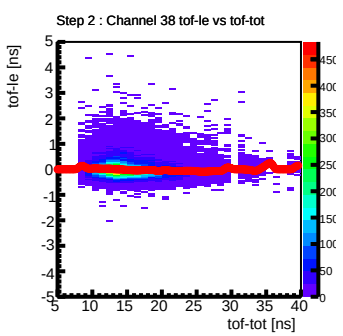

Step 2 : Channel 33 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

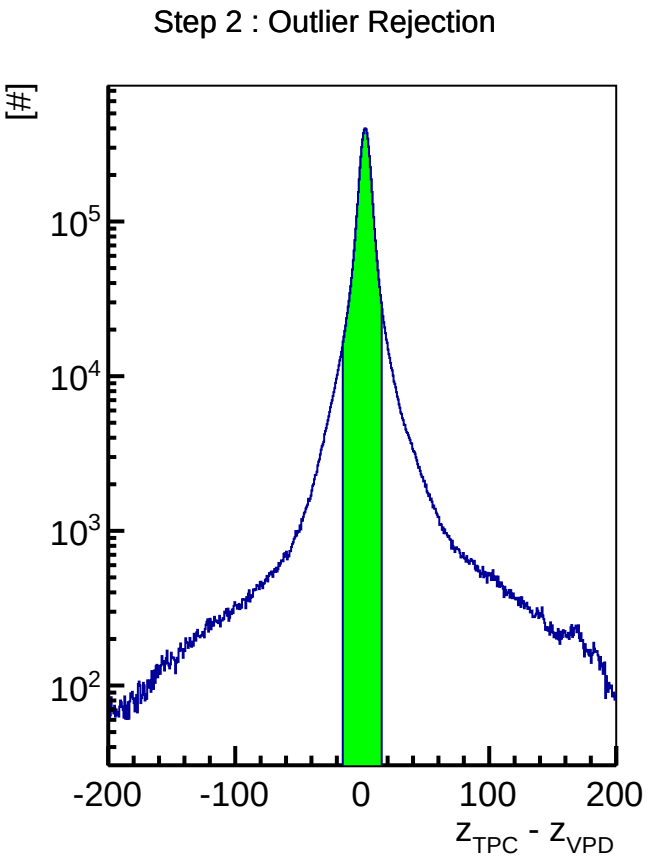

Step 2 : Channel 34 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

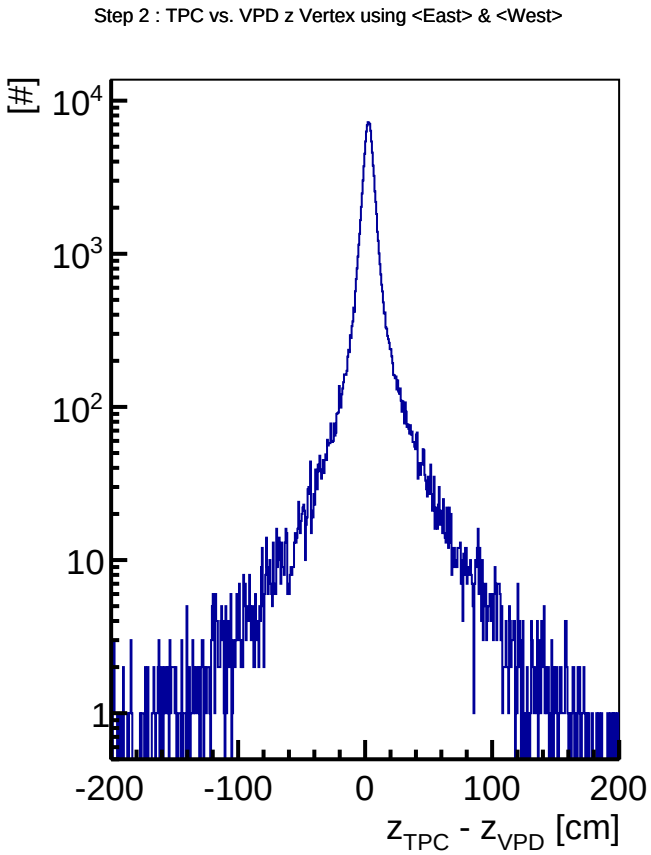

Step 2 : Channel 35 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

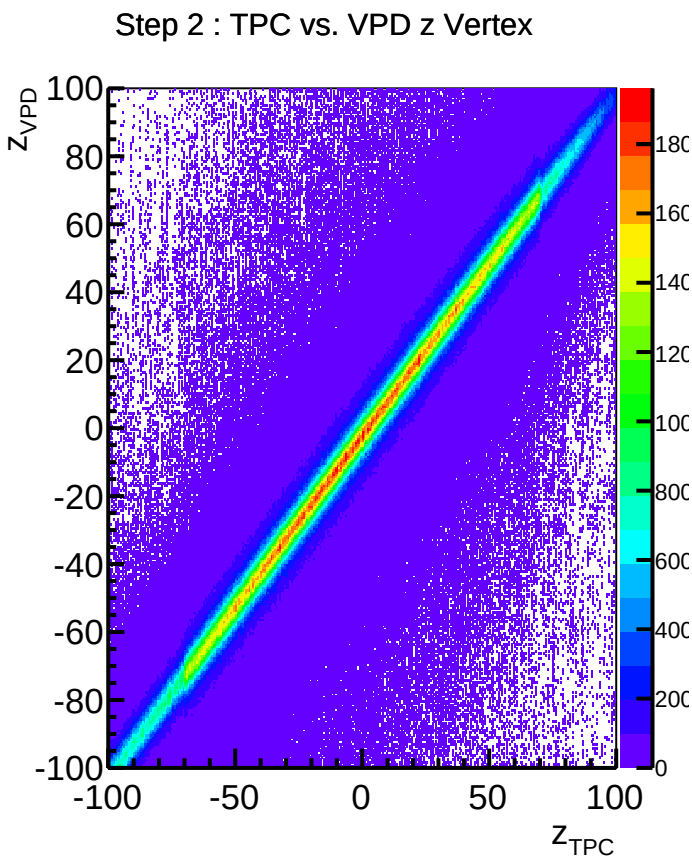

Step 2 : Channel 36 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

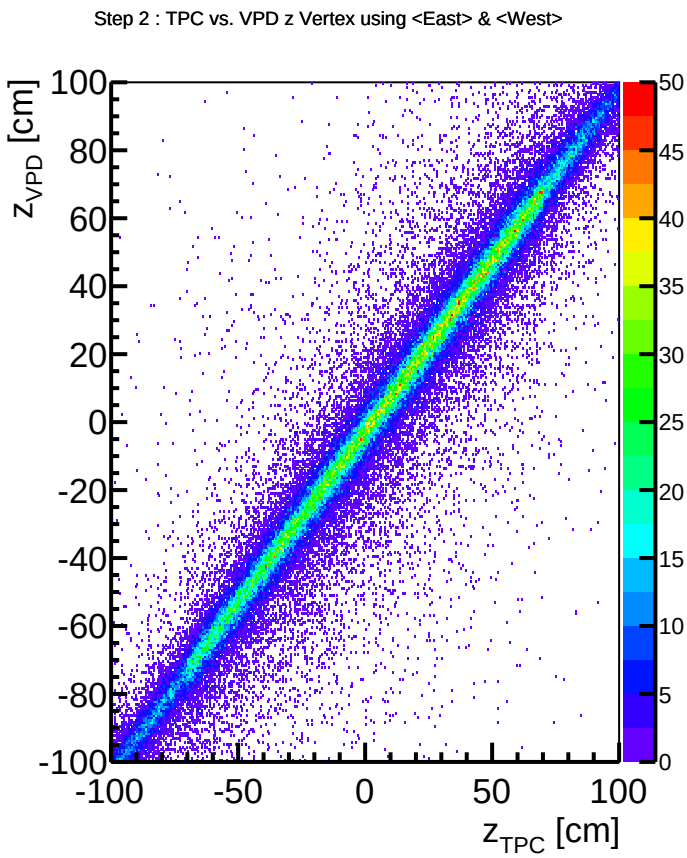

Step 2 : Channel 37 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

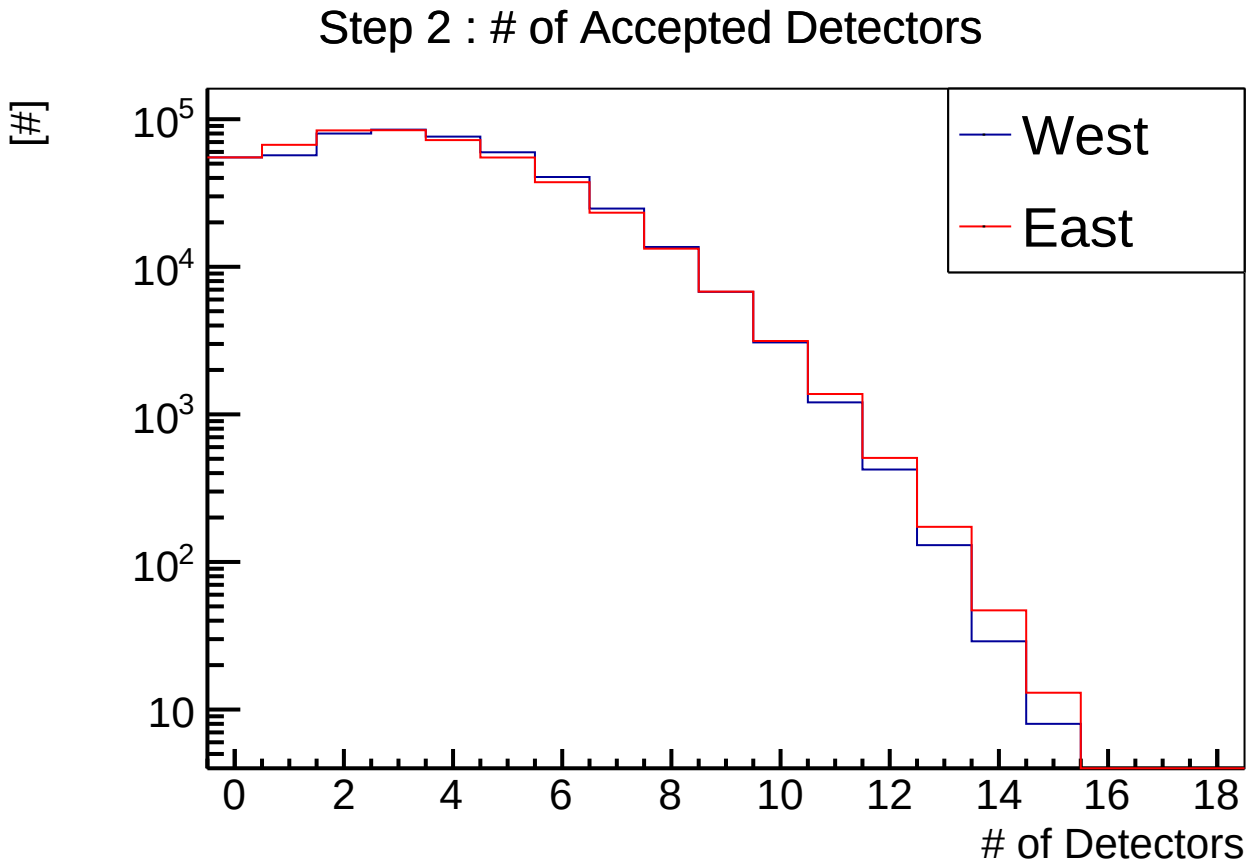

Step 2 : Channel 38 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

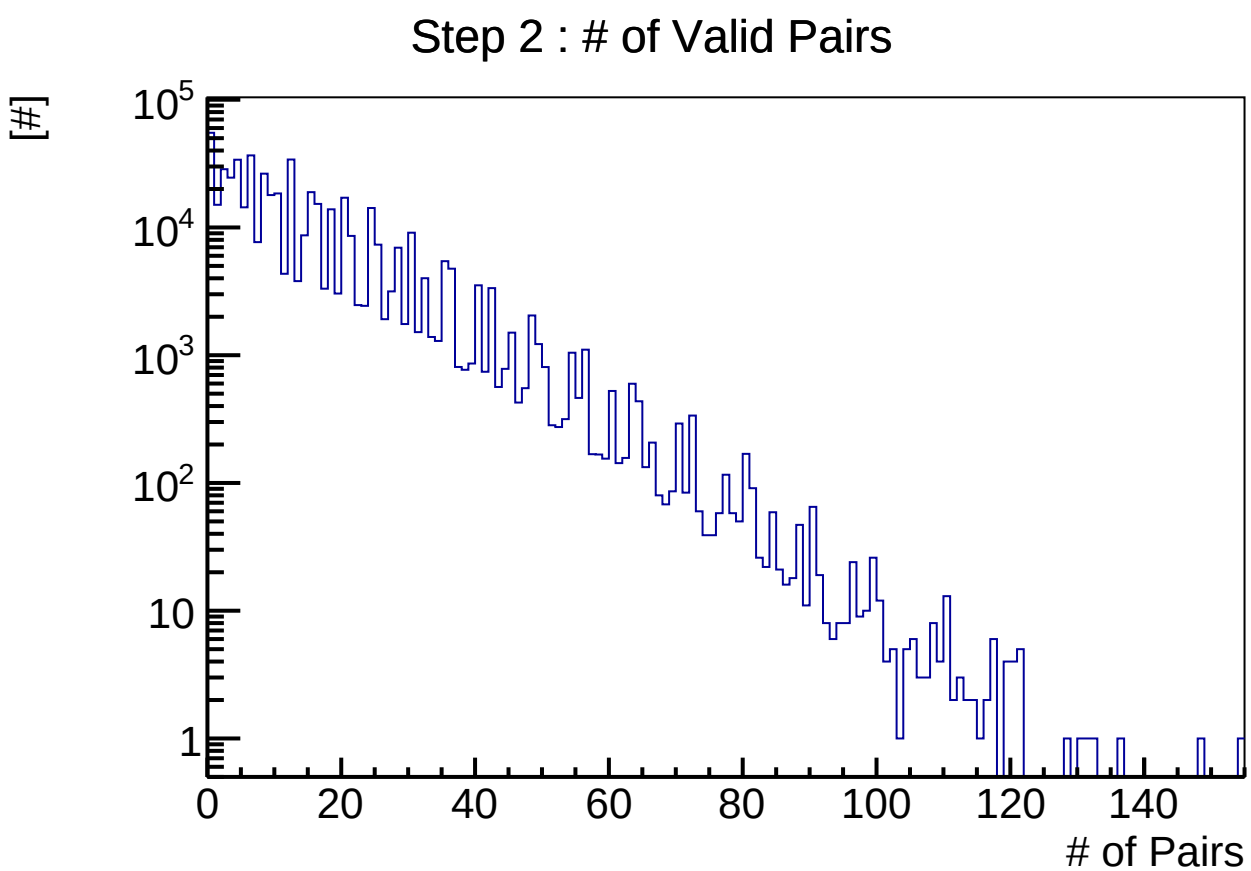

Step 2 : Outlier Rejection
[#]
10^5
10^4
10^3
10^2
-200
-100
0
100
200
z_{TPC} - z_{VPD}

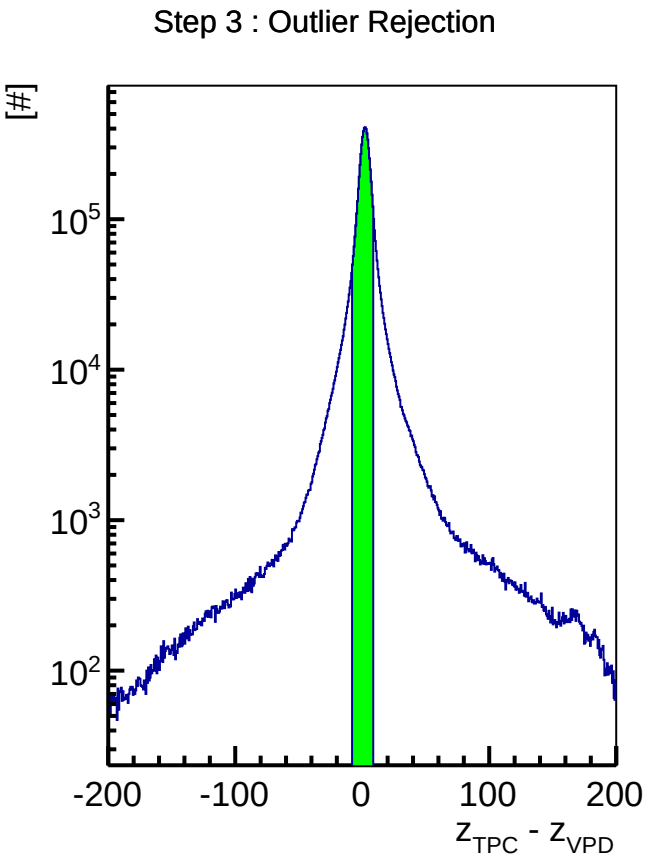

Step 2 : TPC vs. VPD z Vertex using <East> & <West>
[#]
10^4
10^3
10^2
10
1
-200
-100
0
100
200
z_{TPC} - z_{VPD} [cm]

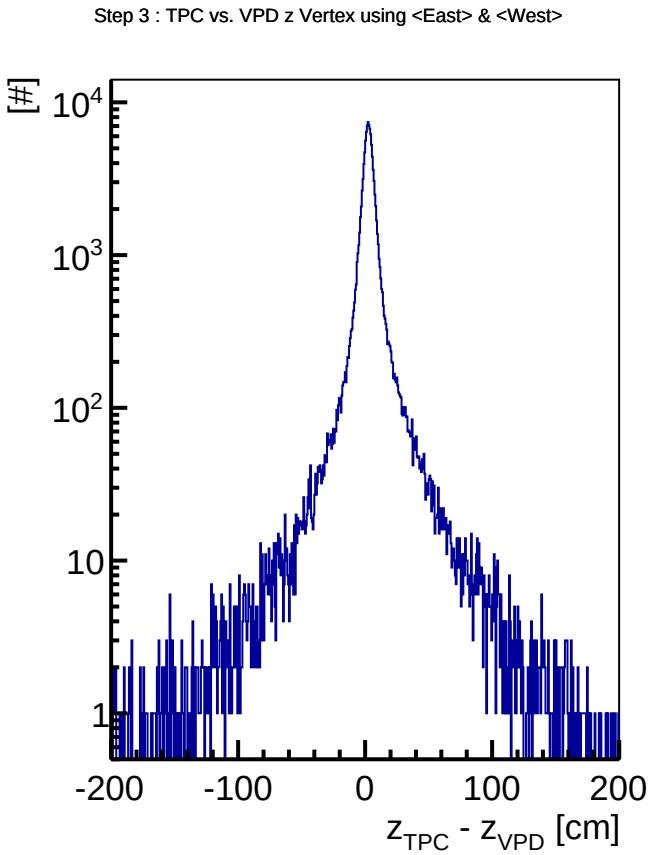

Step 2 : TPC vs. VPD z Vertex
z_{VPD}
100
80
60
40
20
0
-20
-40
-60
-80
-100
-100
-50
0
50
100
z_{TPC}
180
160
140
120
100
80
60
40
20
0

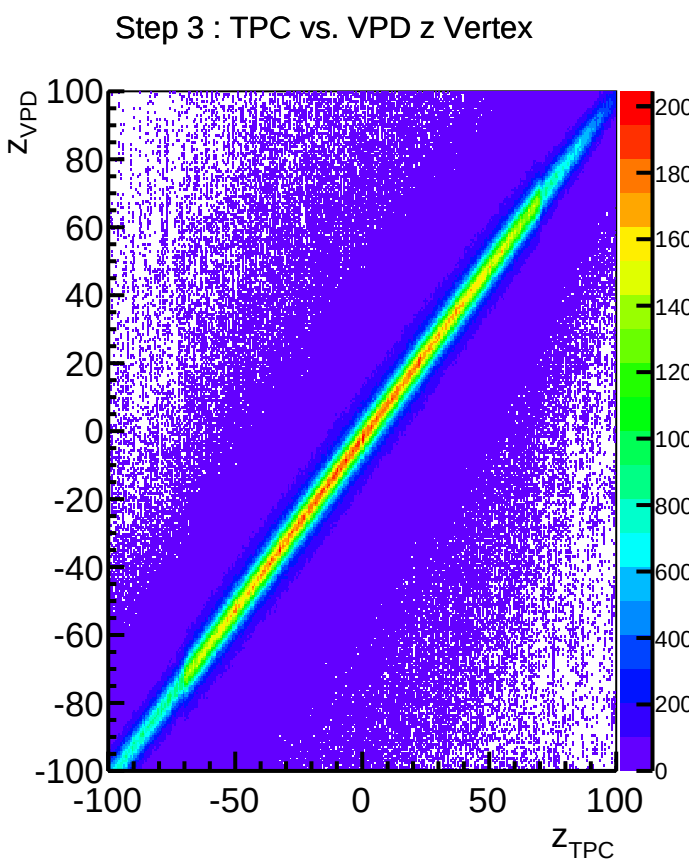

Step 2 : TPC vs. VPD z Vertex using <East> & <West>
z_{VPD} [cm]
100
80
60
40
20
0
-20
-40
-60
-80
-100
-100
-50
0
50
100
z_{TPC} [cm]
50
45
40
35
30
25
20
15
10
5
0

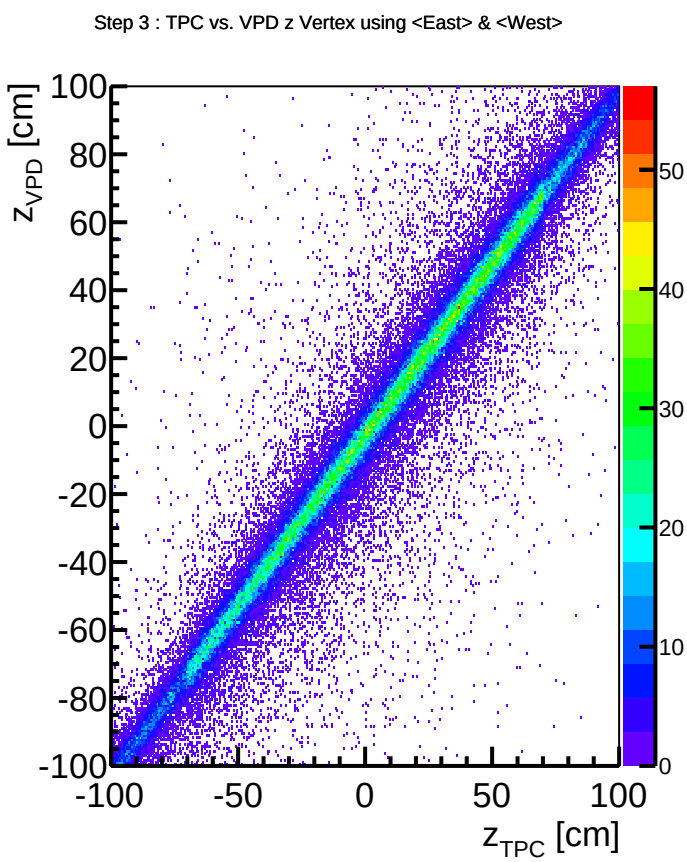

Step 2 : # of Accepted Detectors
[#]
West
East
# of Detectors

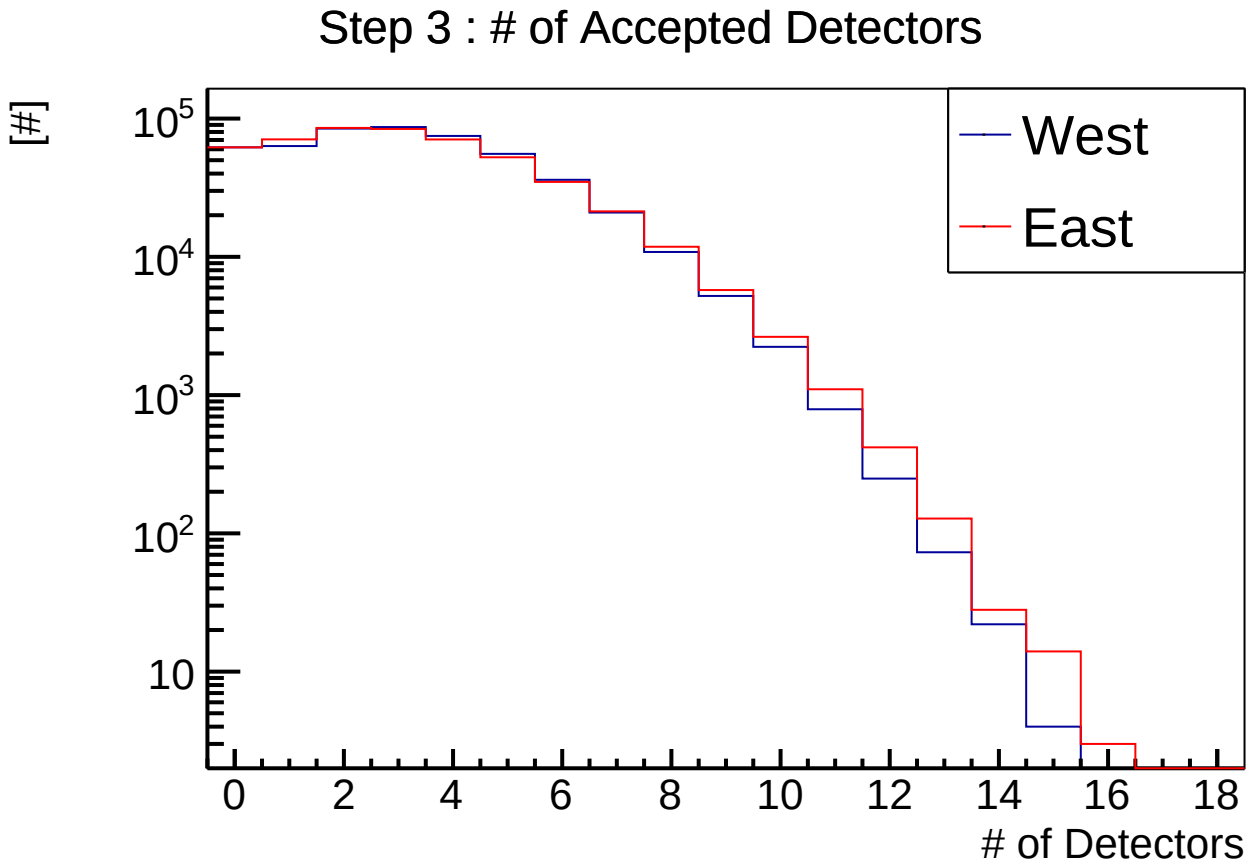

Step 2 : # of Valid Pairs
[#]
# of Pairs

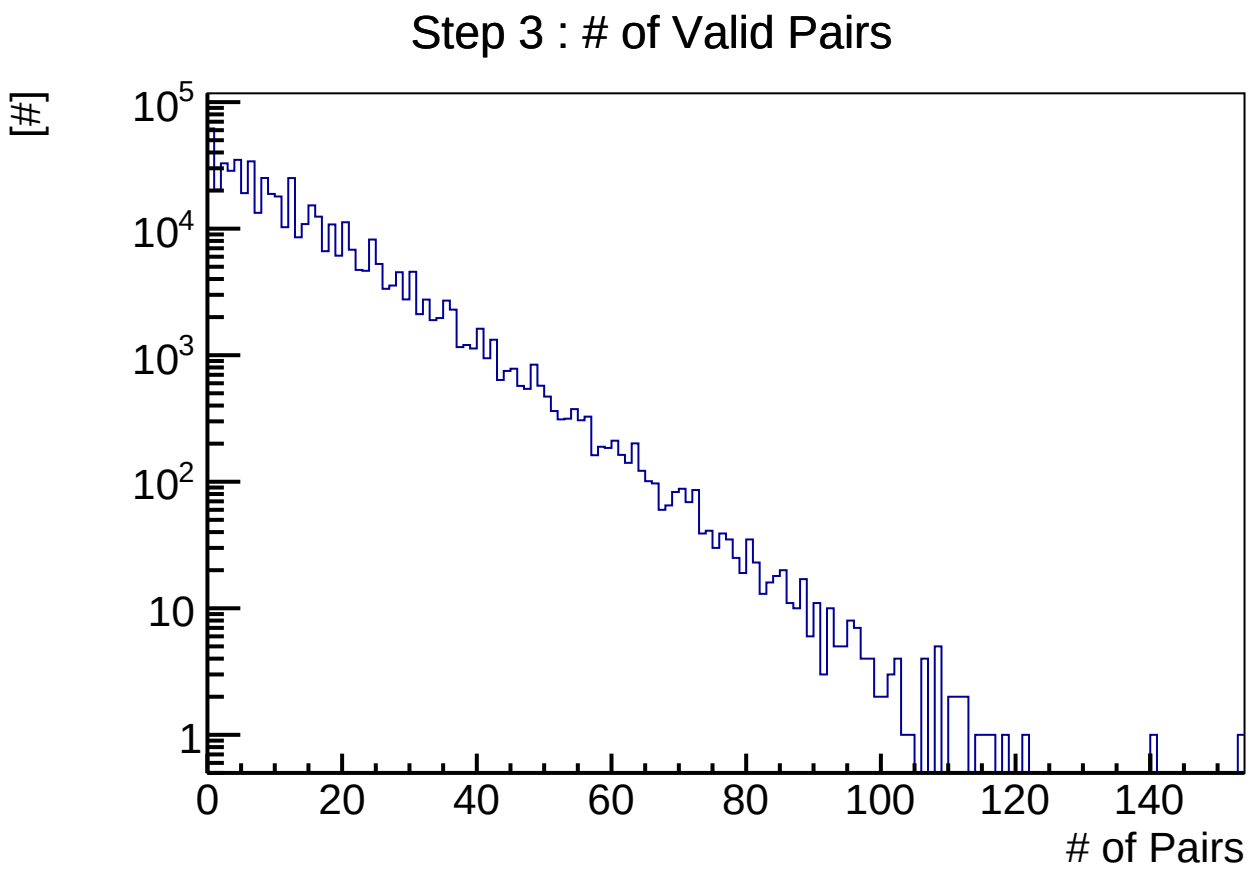

Step 3 : Outlier Rejection
[#]
10^5
10^4
10^3
10^2
-200
-100
0
100
200
$z_{TPC} - z_{VPD}$

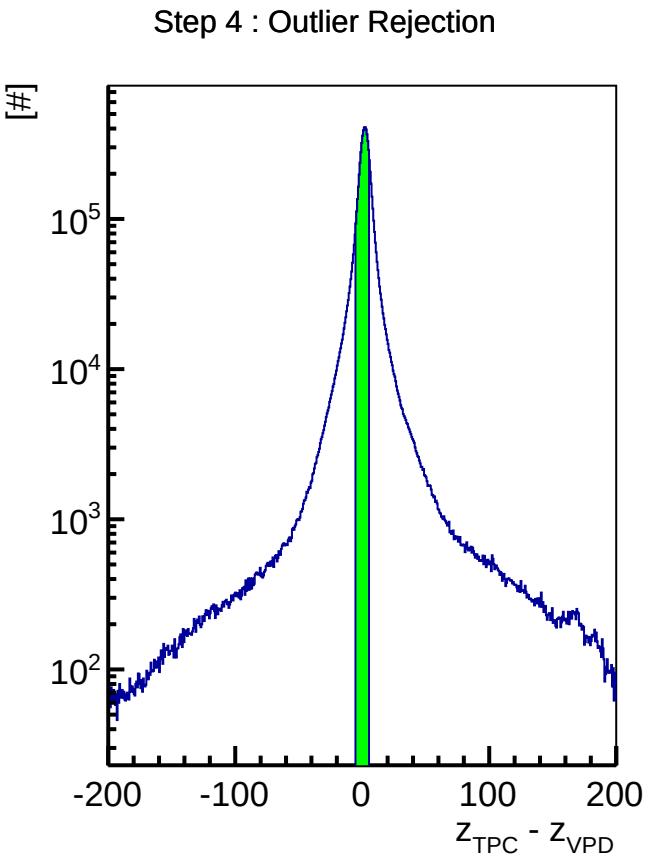

Step 3 : TPC vs. VPD z Vertex using <East> & <West>
[#]
10^4
10^3
10^2
10
1
-200
-100
0
100
200
$z_{TPC} - z_{VPD}$ [cm]

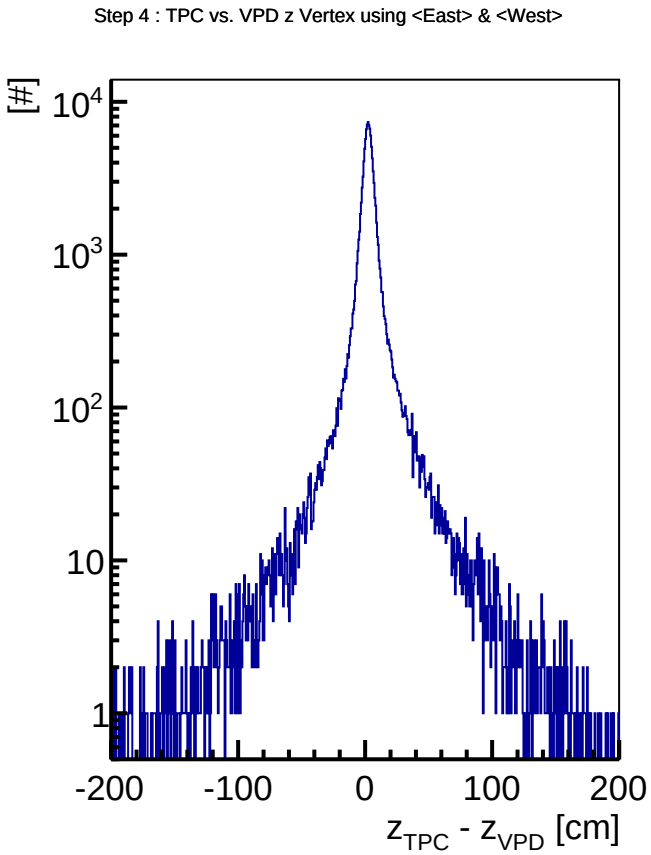

Step 3 : TPC vs. VPD z Vertex
z_{VPD}
100
80
60
40
20
0
-20
-40
-60
-80
-100
-100
-50
0
50
100
z_{TPC}
200
180
160
140
120
100
80
60
40
20
0

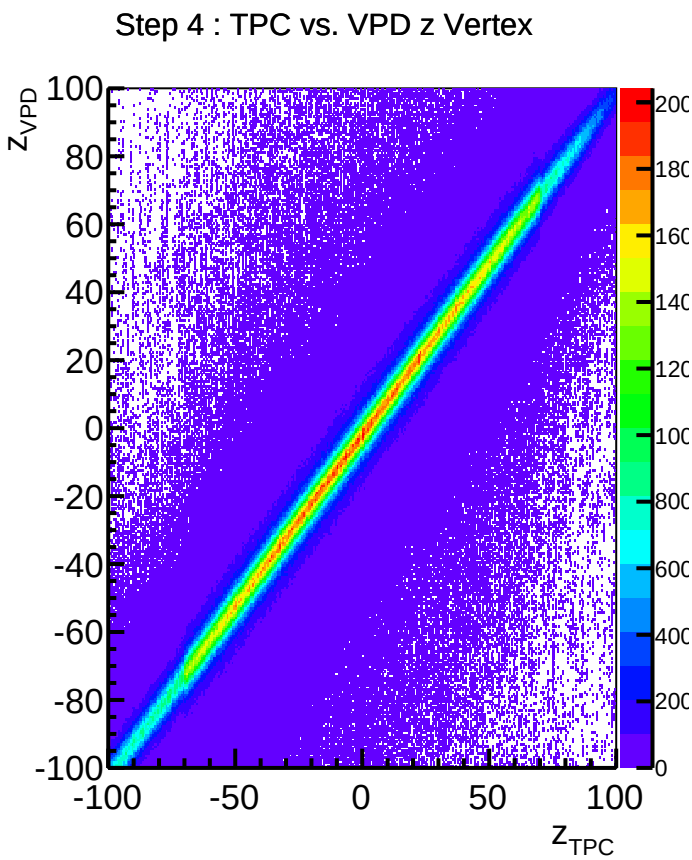

Step 3 : TPC vs. VPD z Vertex using <East> & <West>
z_{VPD} [cm]
100
80
60
40
20
0
-20
-40
-60
-80
-100
-100
-50
0
50
100
z_{TPC} [cm]
50
40
30
20
10
0

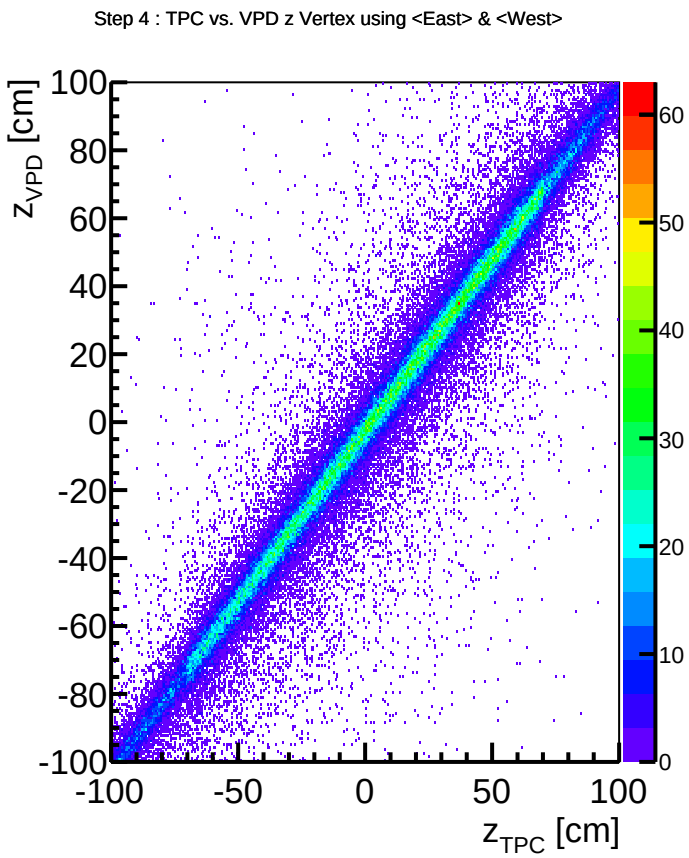

Step 3 : # of Accepted Detectors
[#]
West
East
# of Detectors

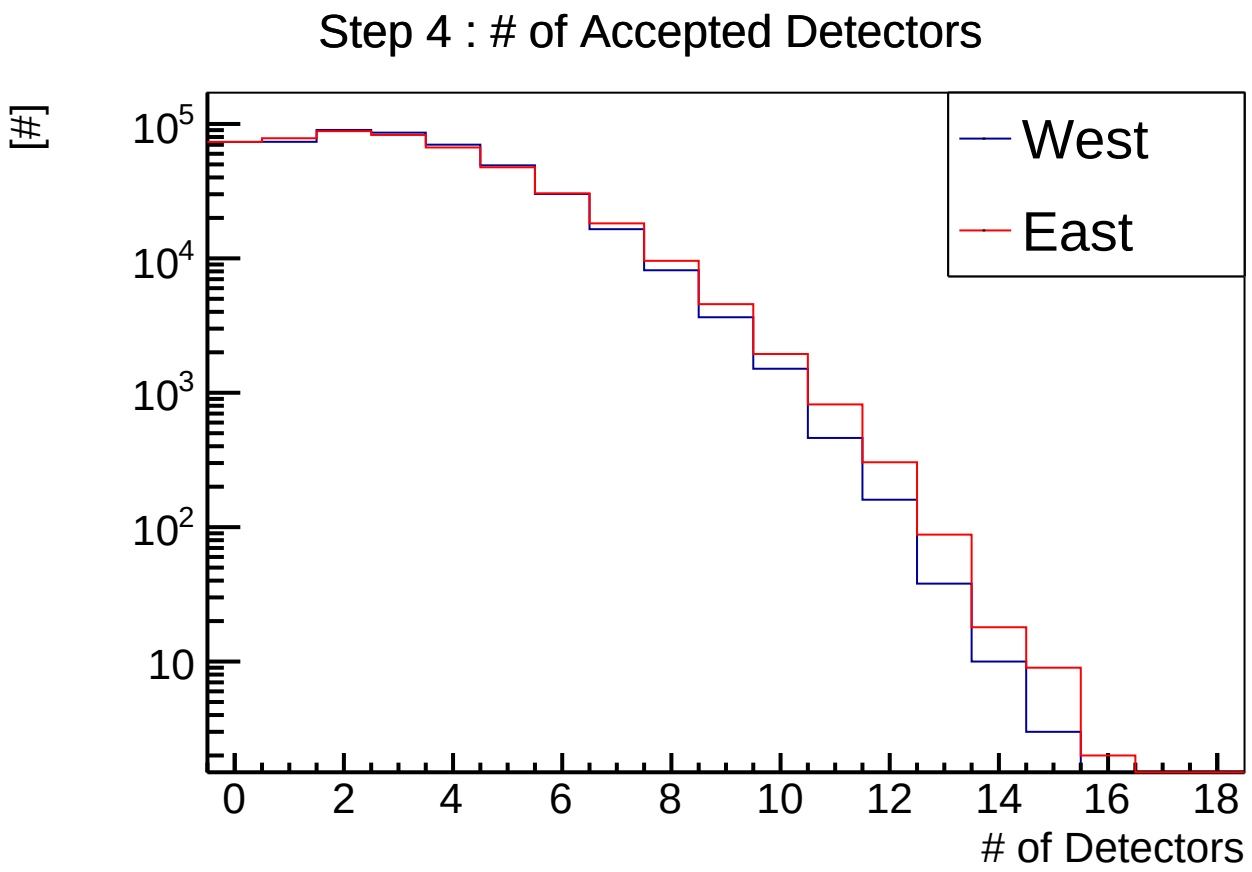

Step 3 : # of Valid Pairs
[#]
# of Pairs

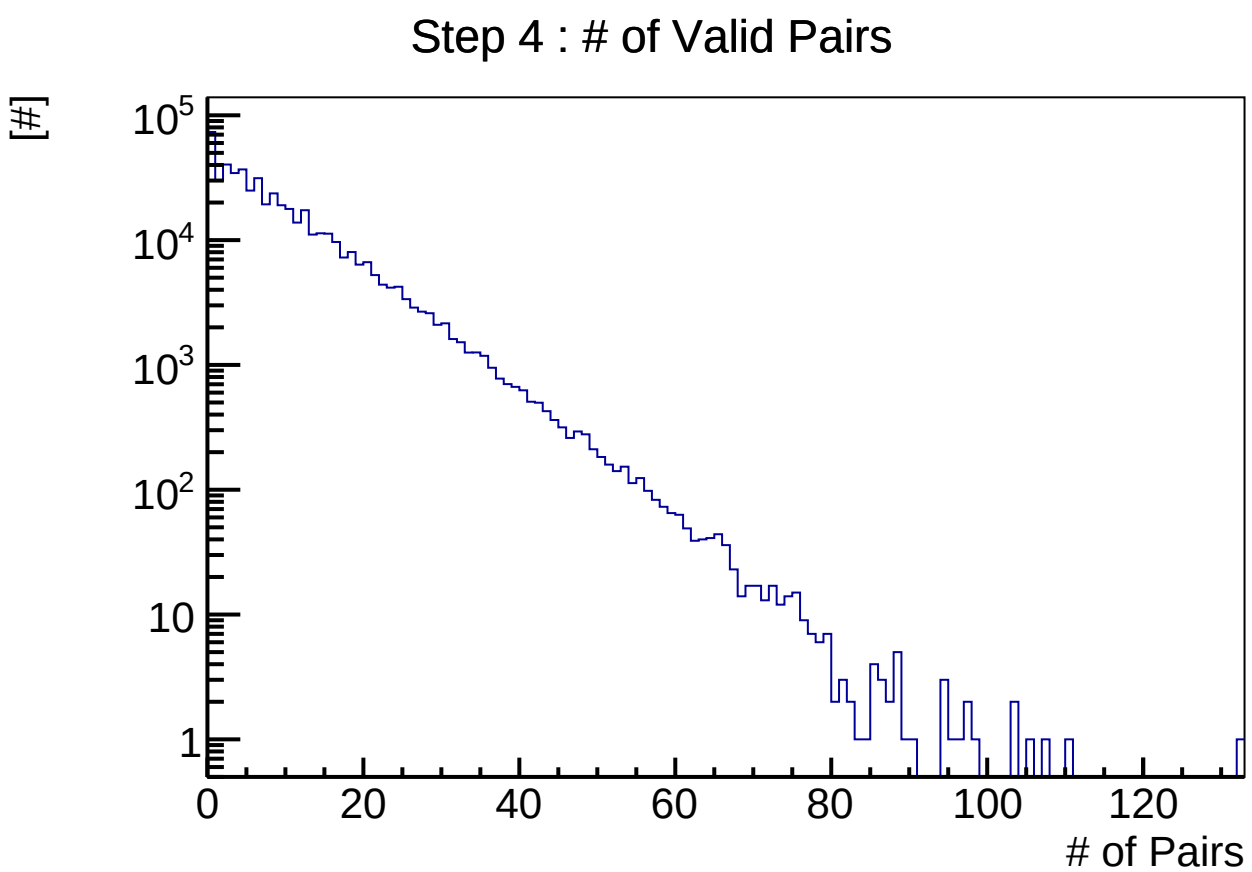

Step 4 : Outlier Rejection
[#]
10^5
10^4
10^3
10^2
-200
-100
0
100
200
z_{TPC} - z_{VPD}

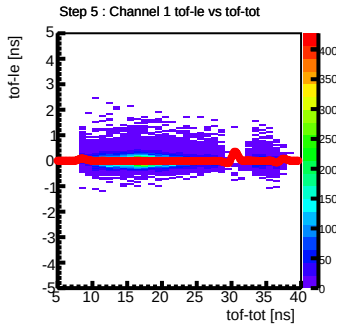

Step 4 : TPC vs. VPD z Vertex using <East> & <West>
[#]
10^4
10^3
10^2
10
1
-200
-100
0
100
200
z_{TPC} - z_{VPD} [cm]

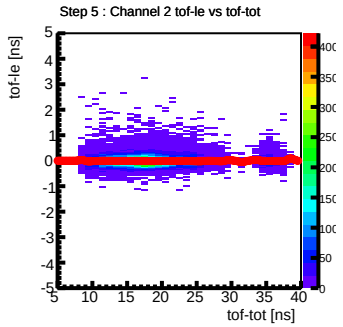

Step 4 : TPC vs. VPD z Vertex
z_{VPD}
100
80
60
40
20
0
-20
-40
-60
-80
-100
-100
-50
0
50
100
z_{TPC}
200
180
160
140
120
100
80
60
40
20
0

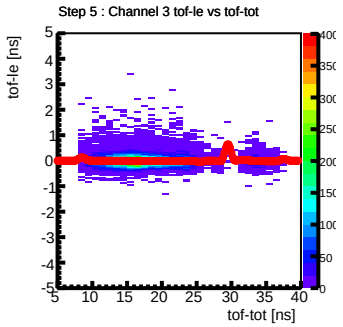

Step 4 : TPC vs. VPD z Vertex using <East> & <West>
z_{VPD} [cm]
100
80
60
40
20
0
-20
-40
-60
-80
-100
-100
-50
0
50
100
z_{TPC} [cm]
60
50
40
30
20
10
0

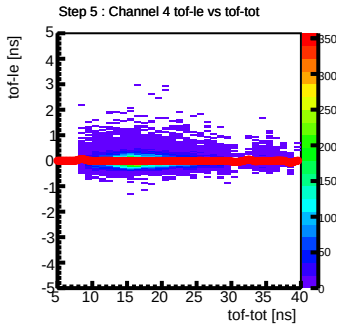

Step 4 : # of Accepted Detectors
[#]
West
East
# of Detectors

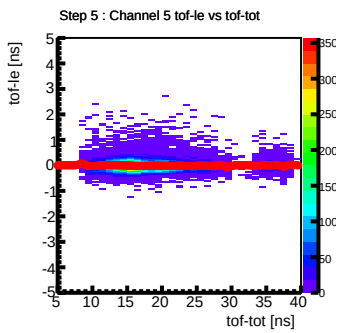

Step 4 : # of Valid Pairs
[#]
# of Pairs

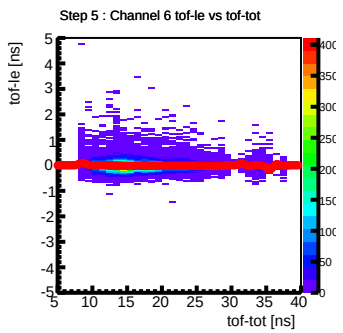

Step 5 : Channel 1 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

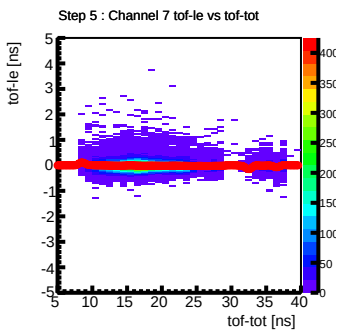

Step 5 : Channel 2 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

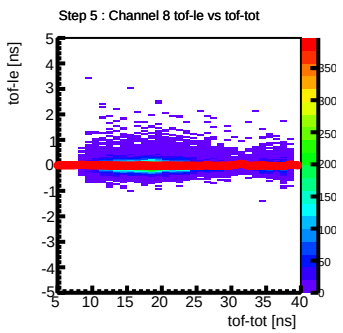

Step 5 : Channel 3 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

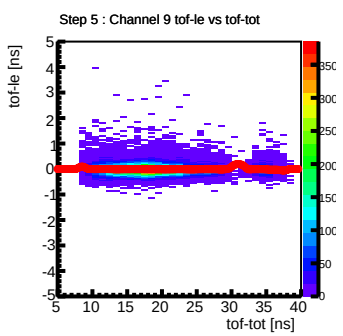

Step 5 : Channel 4 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

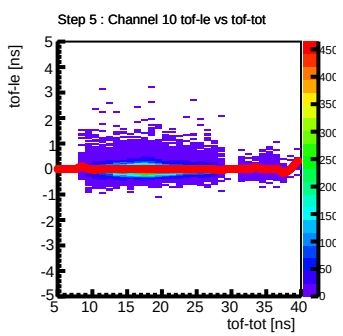

Step 5 : Channel 5 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

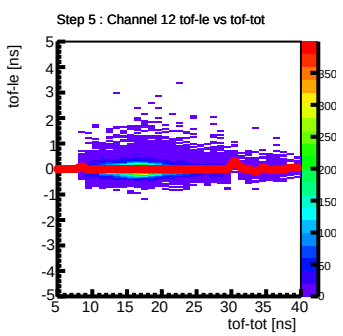

Step 5 : Channel 6 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

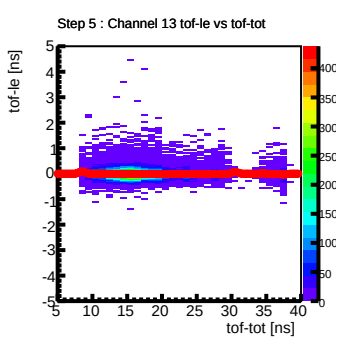

Step 5 : Channel 7 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

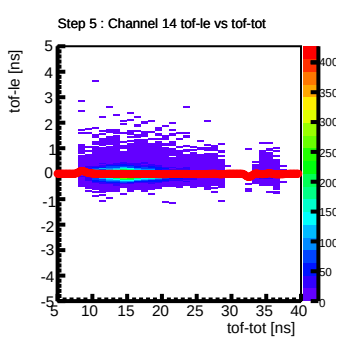

Step 5 : Channel 8 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

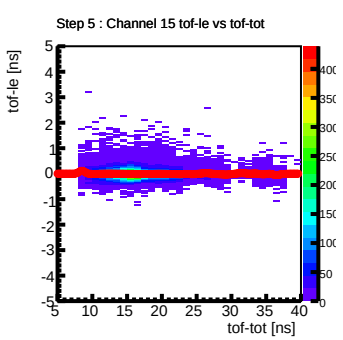

Step 5 : Channel 9 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

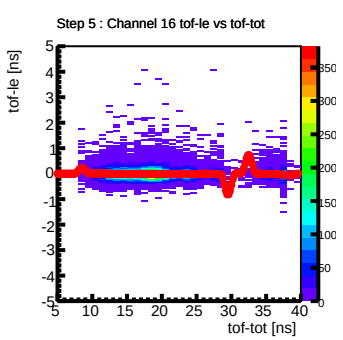

Step 5 : Channel 10 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

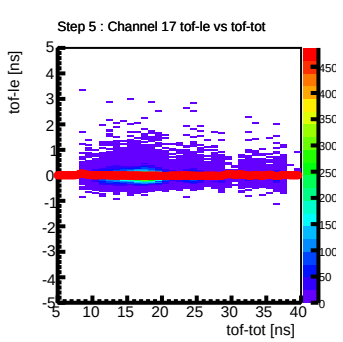

Step 5 : Channel 12 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

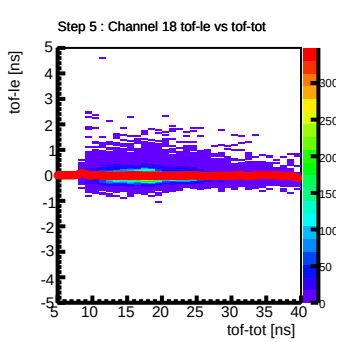

Step 5 : Channel 13 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

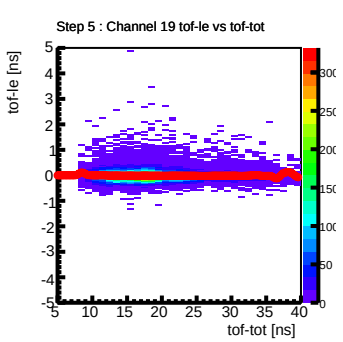

Step 5 : Channel 14 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

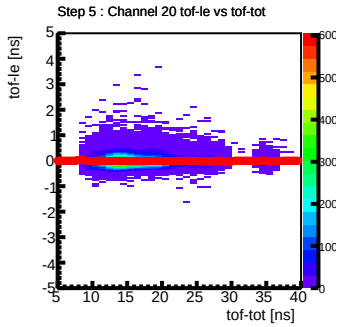

Step 5 : Channel 15 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

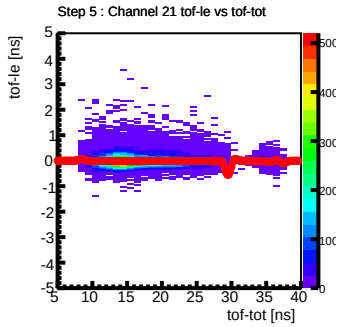

Step 5 : Channel 16 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

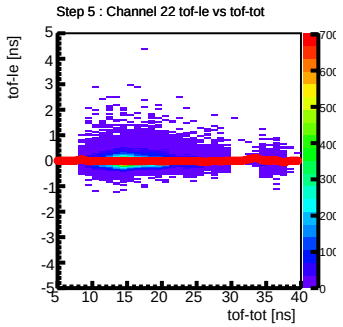

Step 5 : Channel 17 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

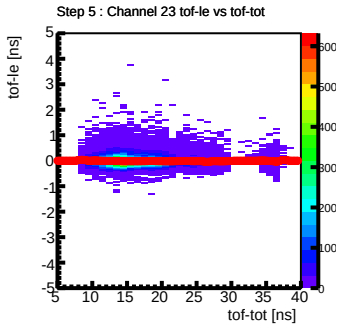

Step 5 : Channel 18 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

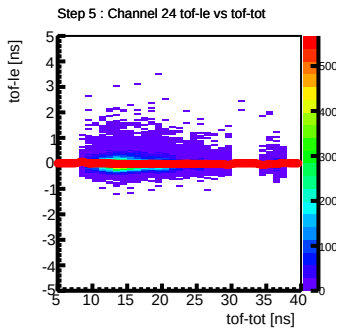

Step 5 : Channel 19 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

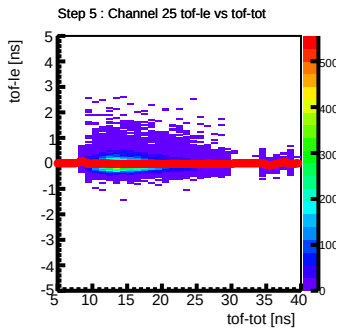

Step 5 : Channel 20 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

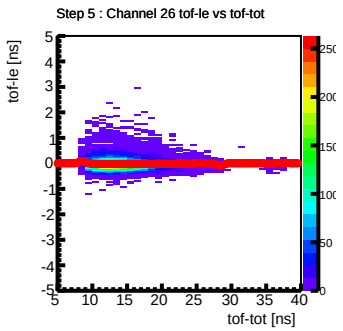

Step 5 : Channel 21 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

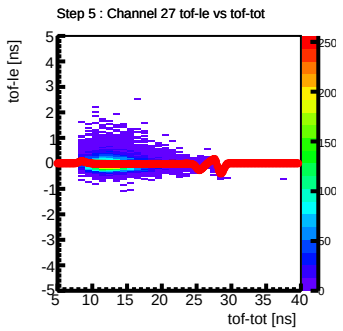

Step 5 : Channel 22 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

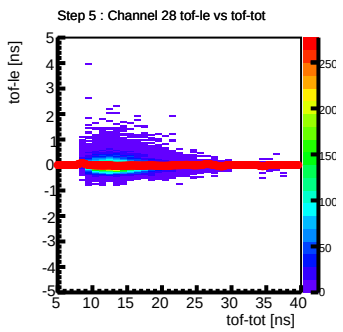

Step 5 : Channel 23 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

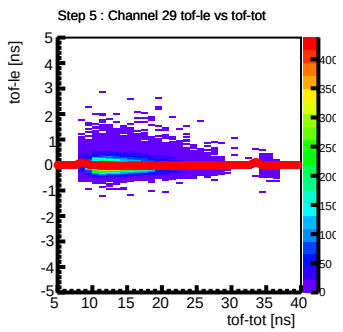

Step 5 : Channel 24 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

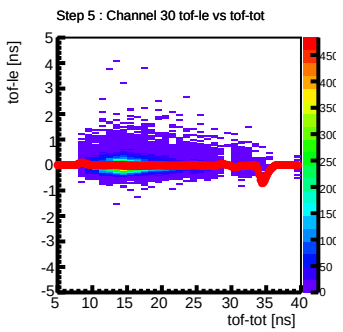

Step 5 : Channel 25 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

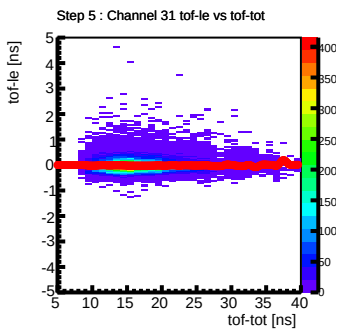

Step 5 : Channel 26 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

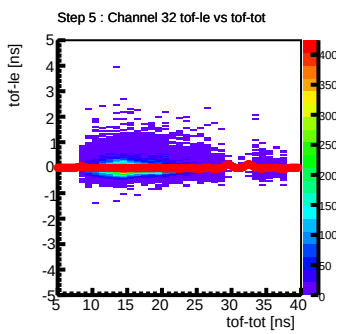

Step 5 : Channel 27 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

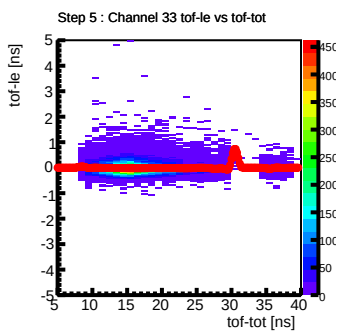

Step 5 : Channel 28 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

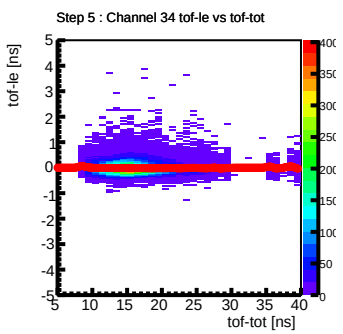

Step 5 : Channel 29 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

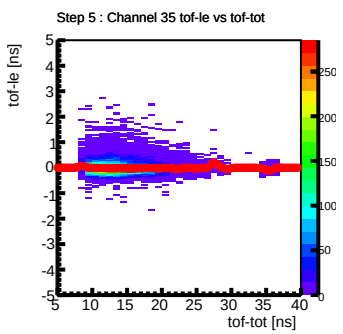

Step 5 : Channel 30 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

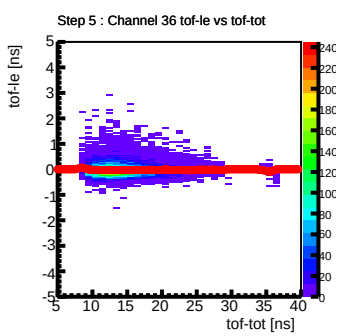

Step 5 : Channel 31 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

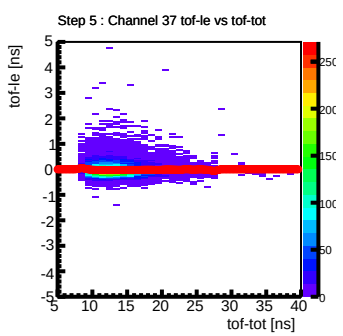

Step 5 : Channel 32 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

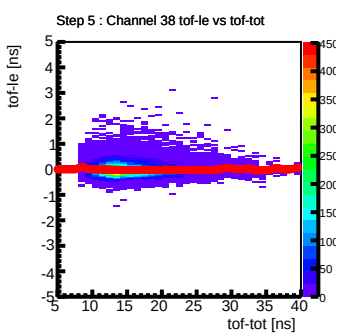

Step 5 : Channel 33 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

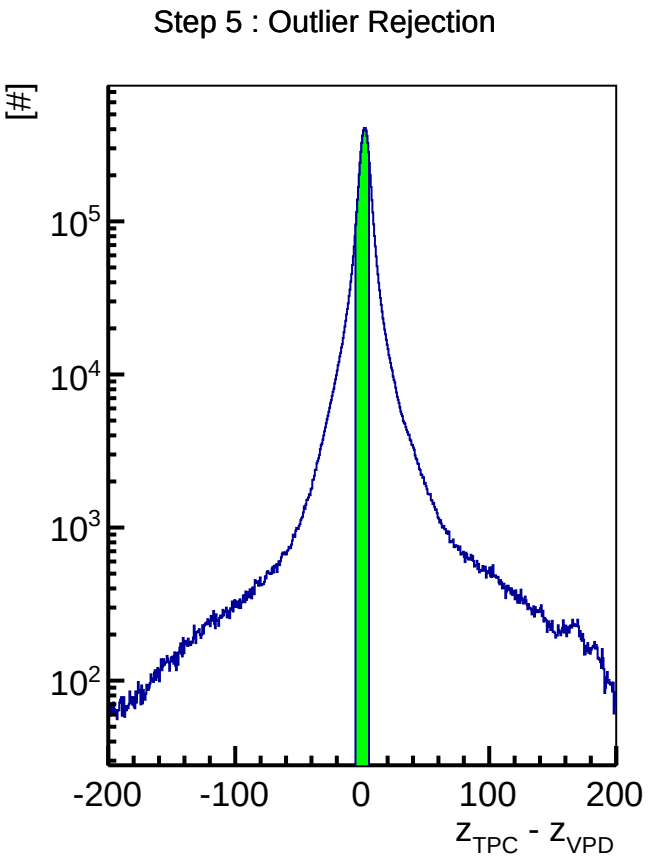

Step 5 : Channel 34 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

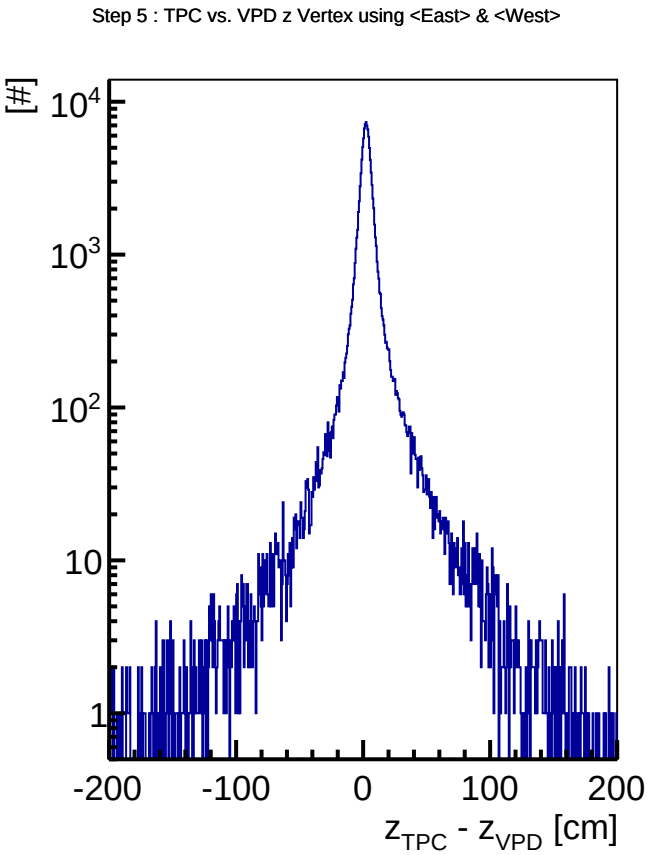

Step 5 : Channel 35 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

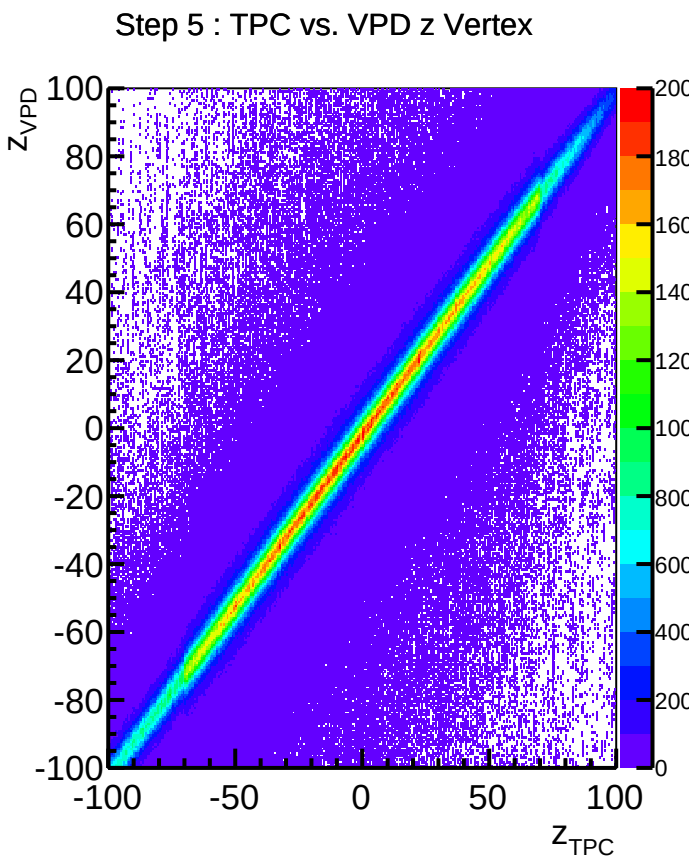

Step 5 : Channel 36 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

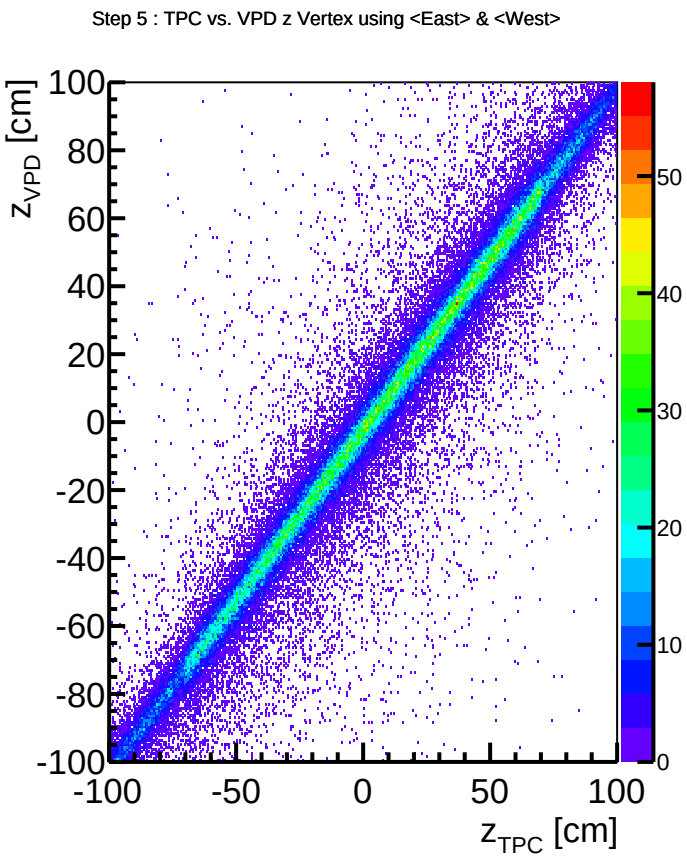

Step 5 : Channel 37 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

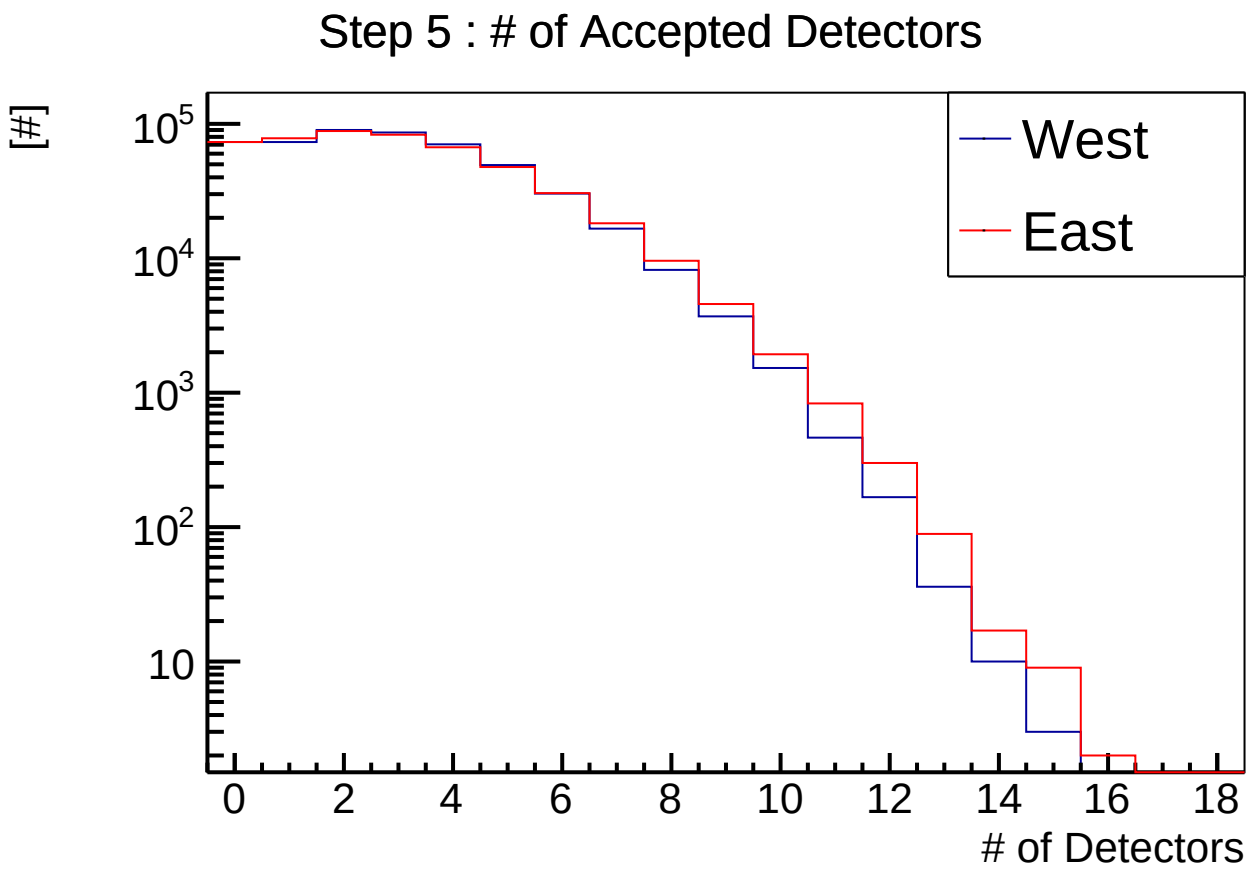

Step 5 : Channel 38 tof-le vs tof-tot
tof-le [ns]
tof-tot [ns]

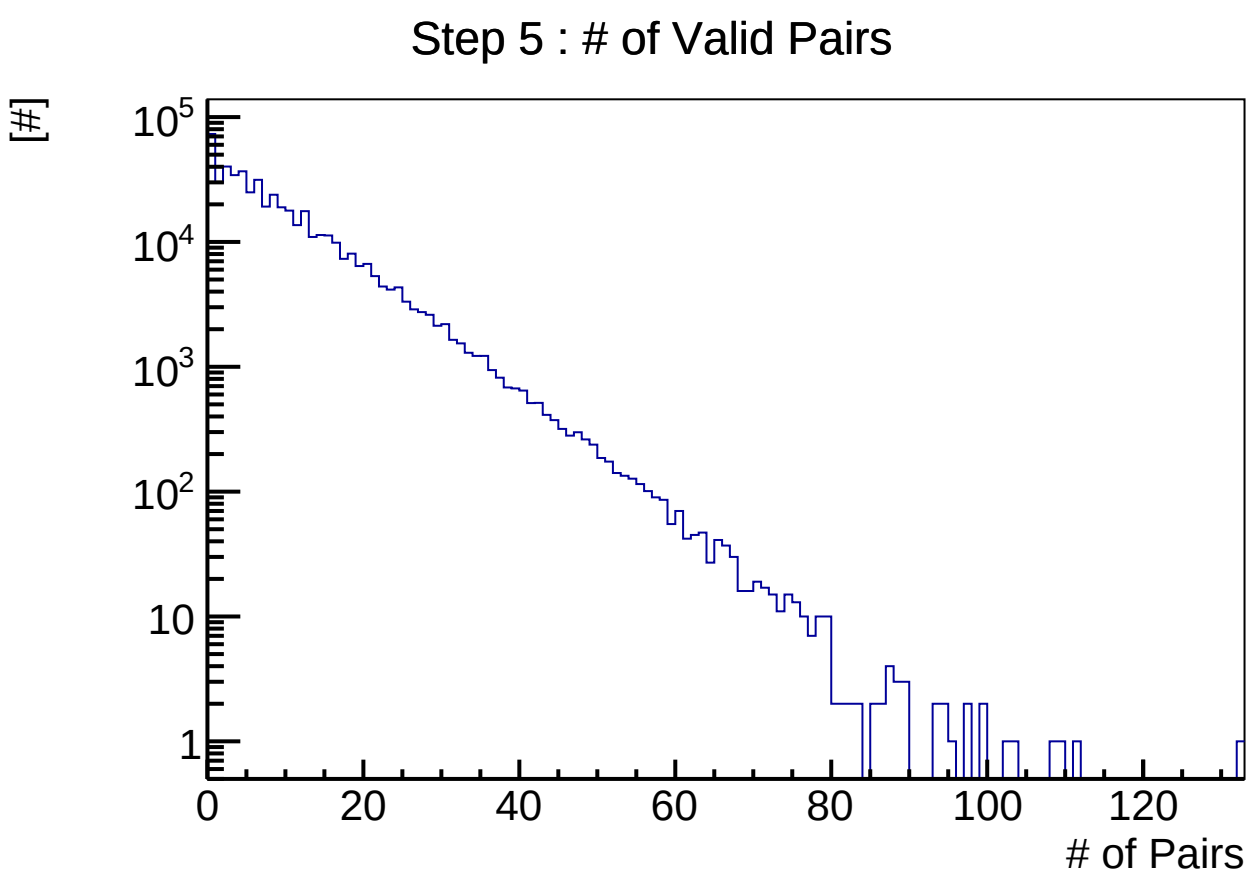

Step 5 : Outlier Rejection
[#]
10^5
10^4
10^3
10^2
-200
-100
0
100
200
$z_{TPC} - z_{VPD}$

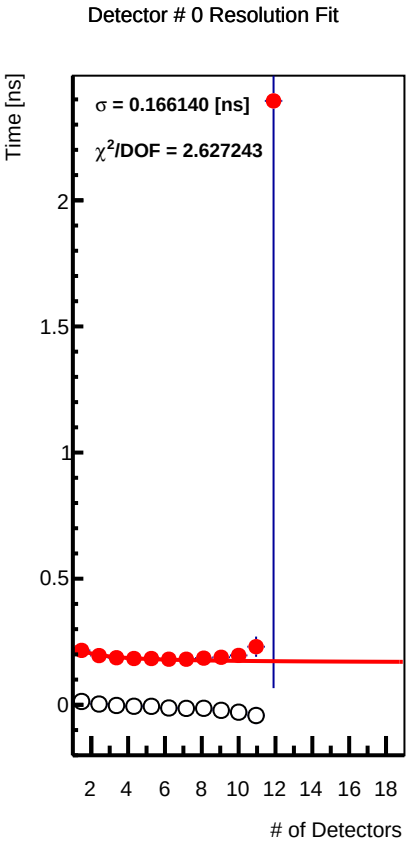

Step 5 : TPC vs. VPD z Vertex using <East> & <West>
[#]
10^4
10^3
10^2
10
1
-200
-100
0
100
200
$z_{TPC} - z_{VPD}$ [cm]

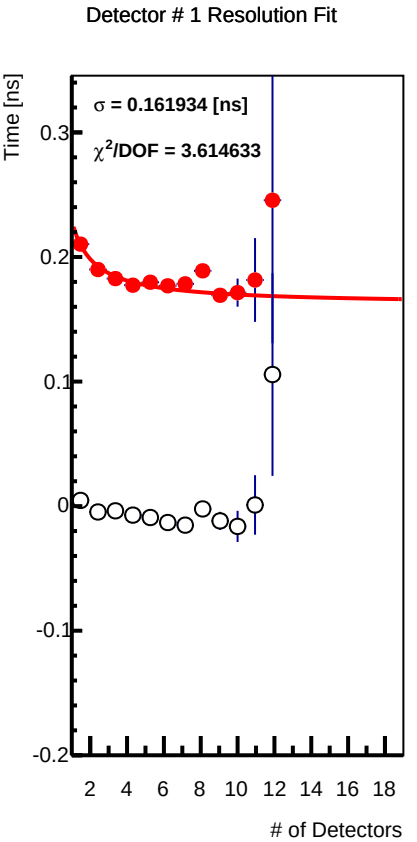

Step 5 : TPC vs. VPD z Vertex
z_{VPD}
100
80
60
40
20
0
-20
-40
-60
-80
-100
-100
-50
0
50
100
z_{TPC}
200
180
160
140
120
100
80
60
40
20
0

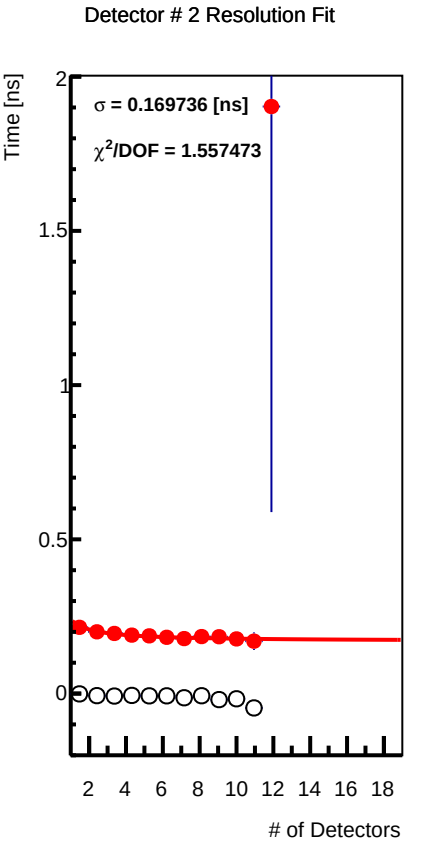

Step 5 : TPC vs. VPD z Vertex using <East> & <West>
z_{VPD} [cm]
100
80
60
40
20
0
-20
-40
-60
-80
-100
-100
-50
0
50
100
z_{TPC} [cm]
50
40
30
20
10
0

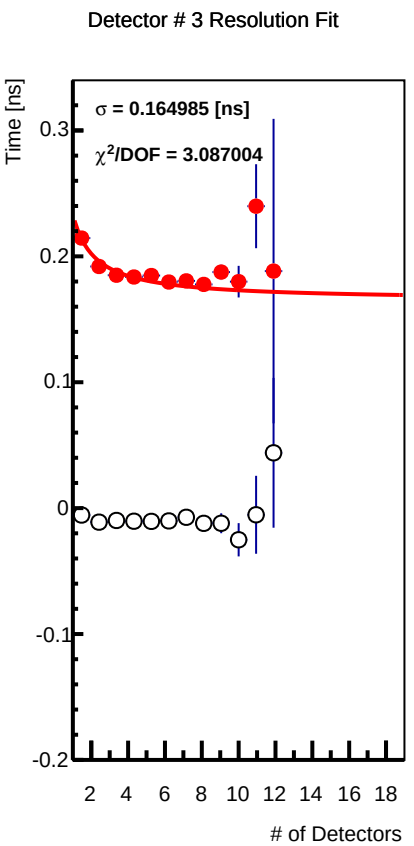

Step 5 : # of Accepted Detectors
[#]
West
East
# of Detectors

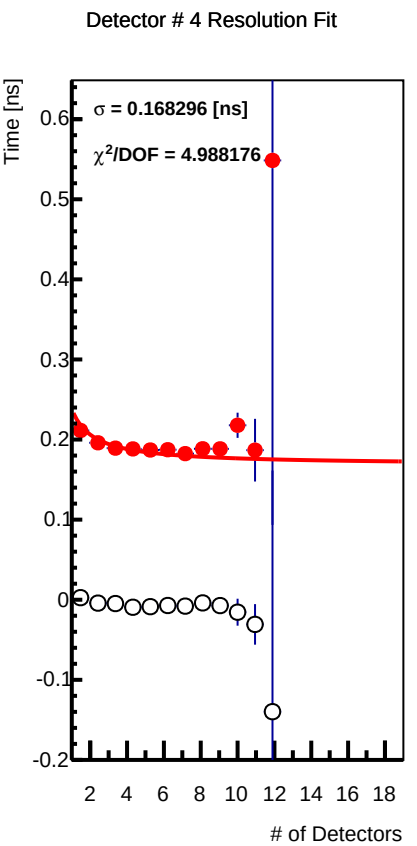

Step 5 : # of Valid Pairs
[#]
# of Pairs

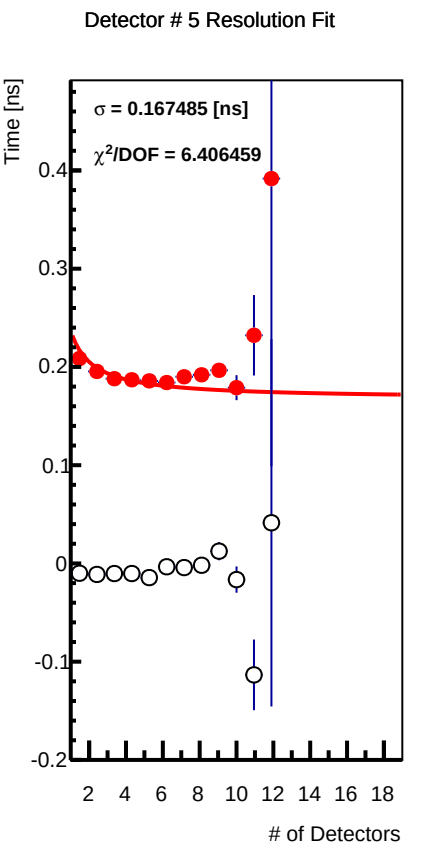

Detector # 0 Resolution Fit
σ = 0.166140 [ns]
χ²/DOF = 2.627243
Time [ns]
# of Detectors


Detector # 1 Resolution Fit
σ = 0.161934 [ns]
χ²/DOF = 3.614633
Time [ns]
# of Detectors

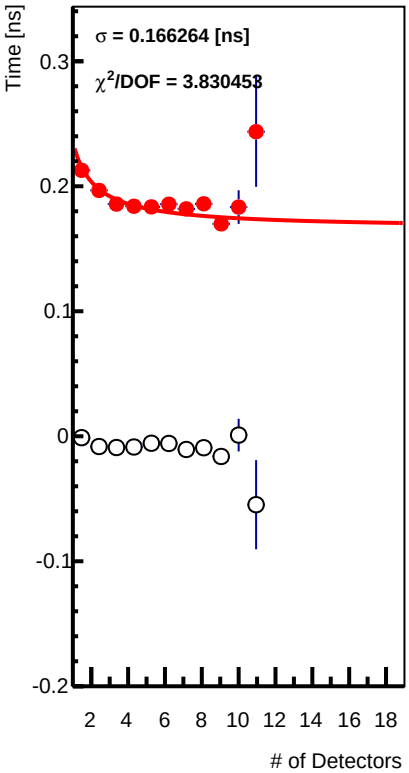

Detector # 2 Resolution Fit
σ = 0.169736 [ns]
χ²/DOF = 1.557473
Time [ns]
# of Detectors


Detector # 3 Resolution Fit
σ = 0.164985 [ns]
χ²/DOF = 3.087004
Time [ns]
# of Detectors

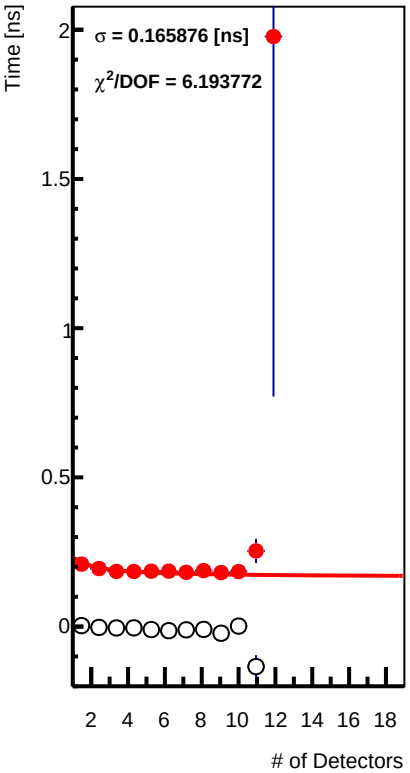

Detector # 4 Resolution Fit
σ = 0.168296 [ns]
χ²/DOF = 4.988176
Time [ns]
# of Detectors


Detector # 5 Resolution Fit
σ = 0.167485 [ns]
χ²/DOF = 6.406459
Time [ns]
# of Detectors

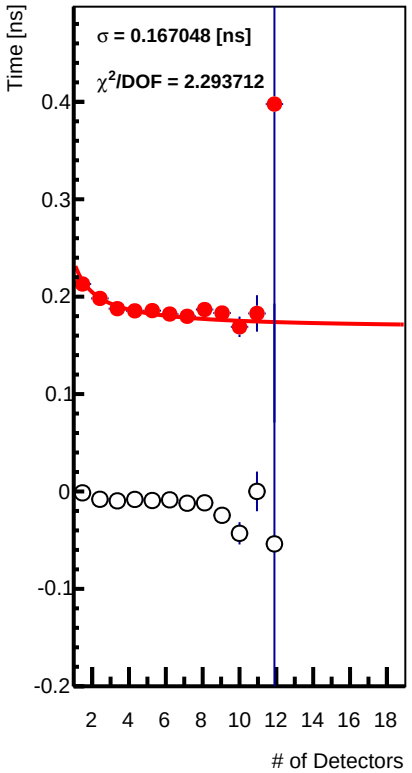
Detector # 6 Resolution Fit



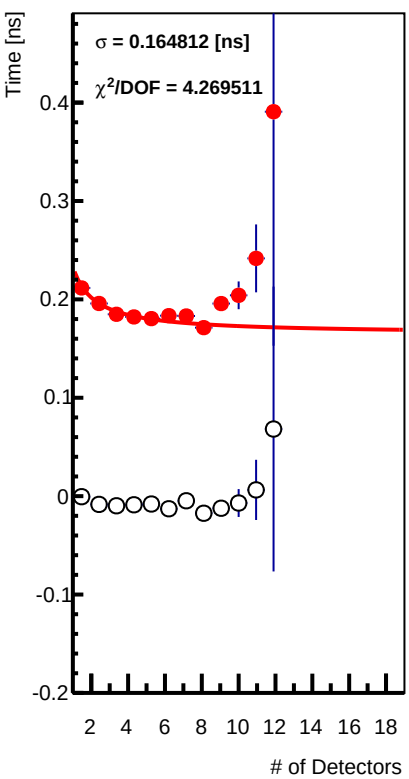
Detector # 7 Resolution Fit



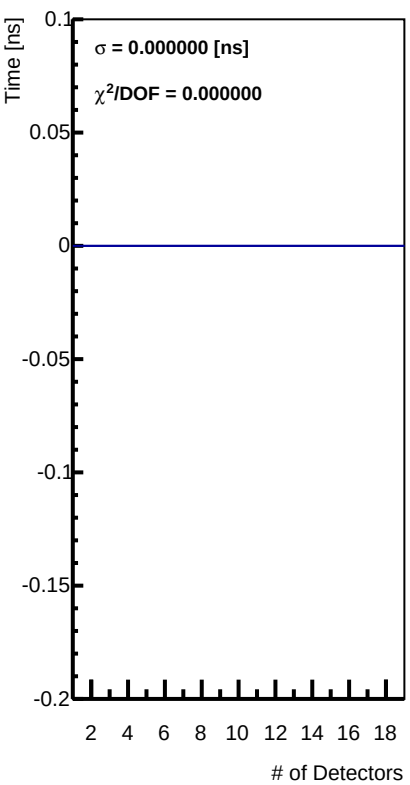
Detector # 8 Resolution Fit



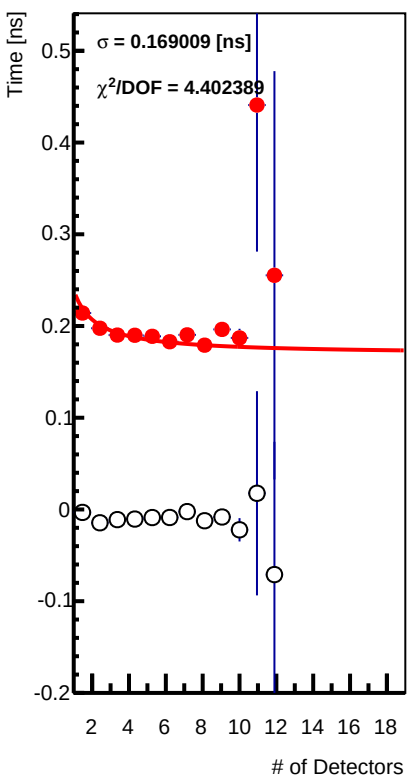
Detector # 9 Resolution Fit



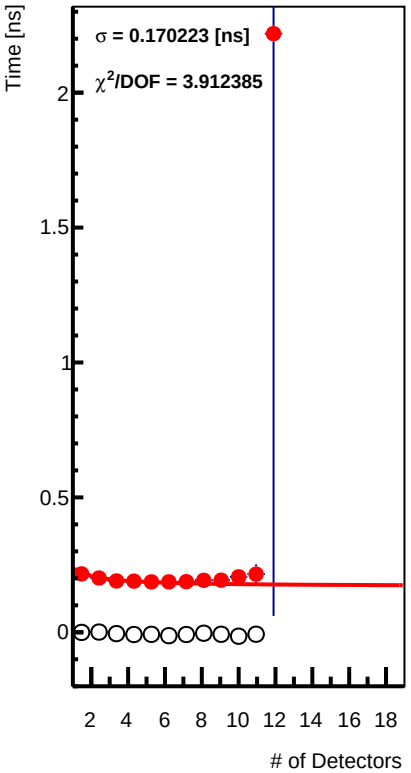
Detector # 10 Resolution Fit



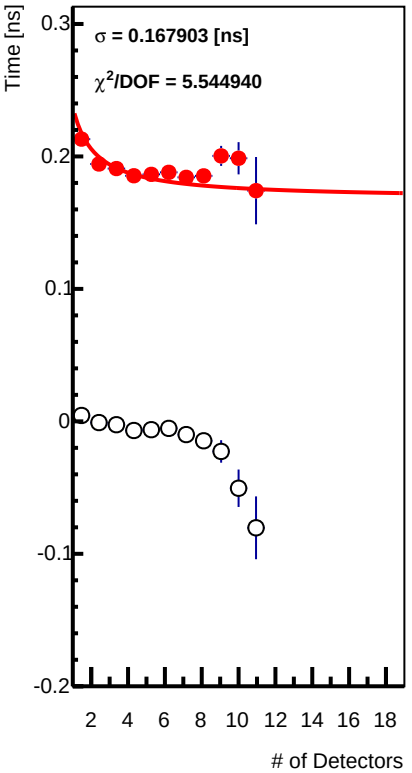
Detector # 11 Resolution Fit



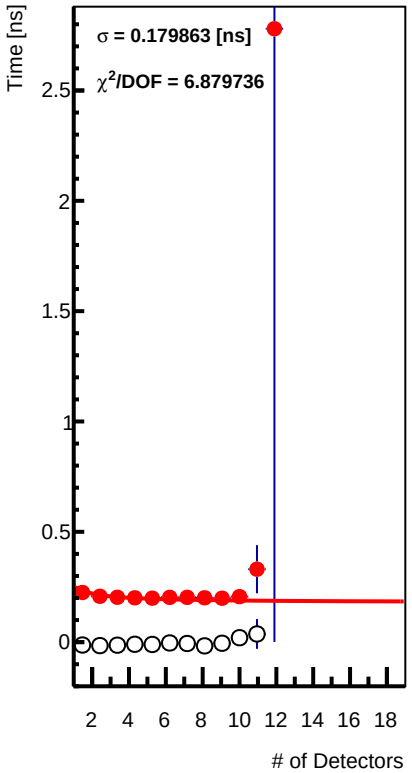
Detector # 12 Resolution Fit



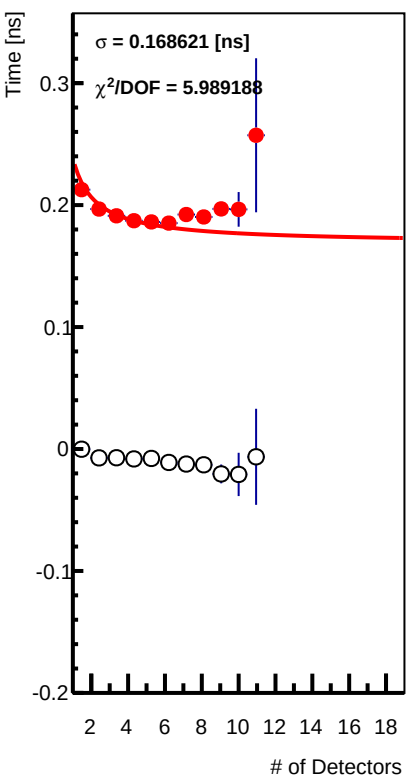
Detector # 13 Resolution Fit



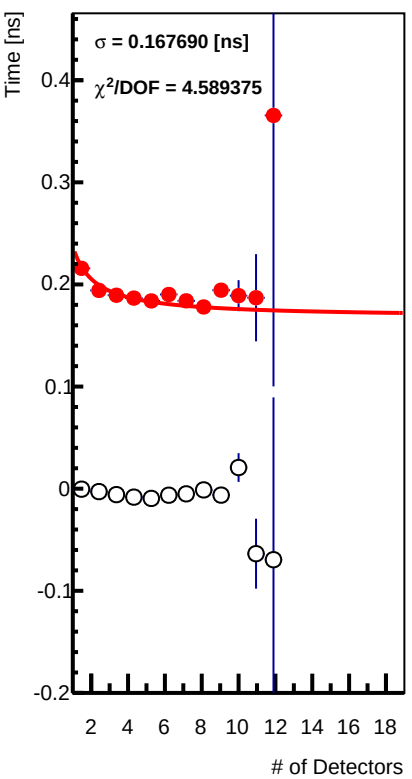
Detector # 14 Resolution Fit



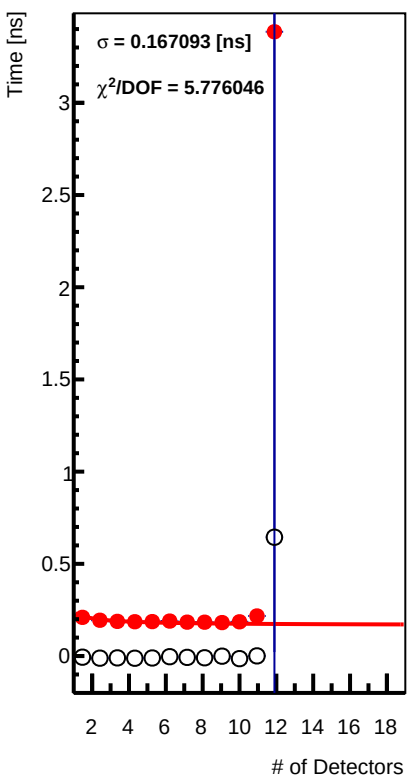
Detector # 15 Resolution Fit

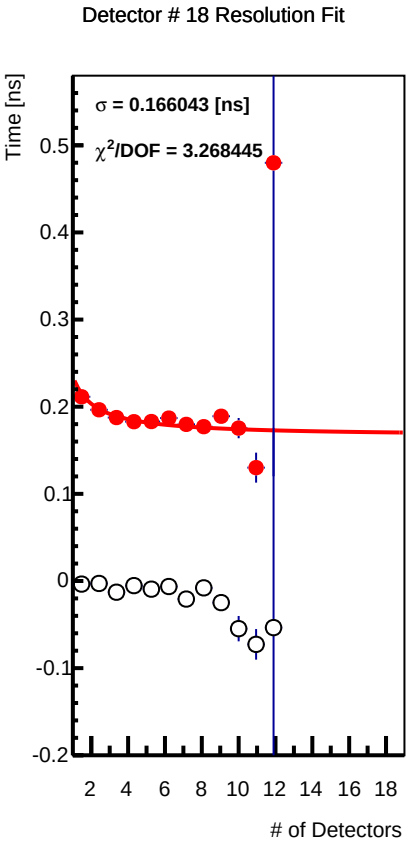


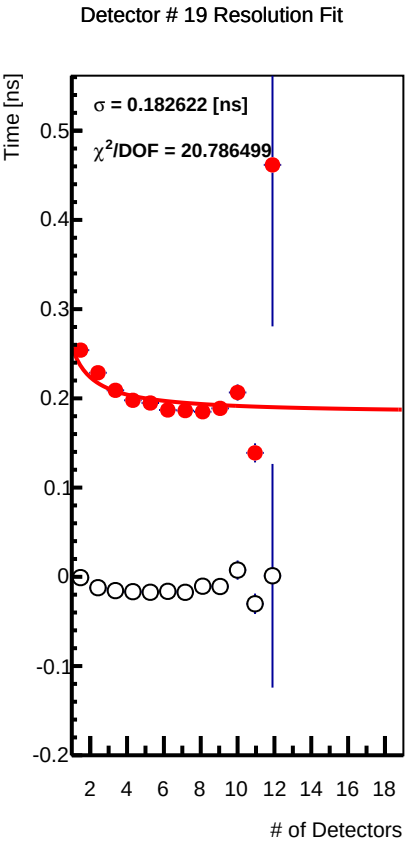
Detector # 16 Resolution Fit

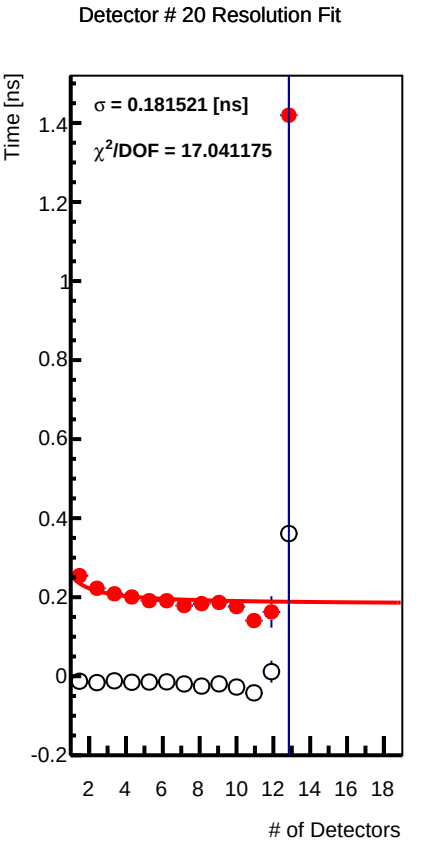


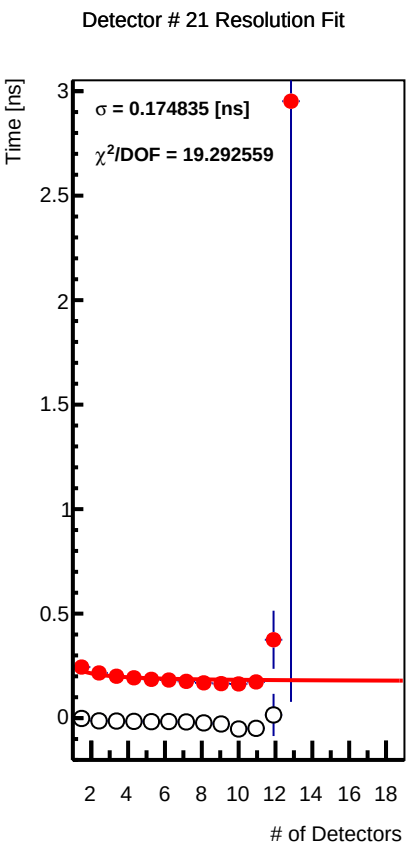
Detector # 17 Resolution Fit

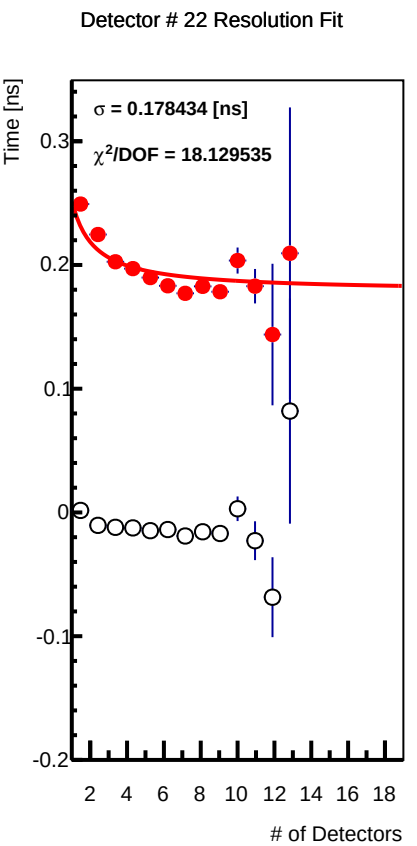


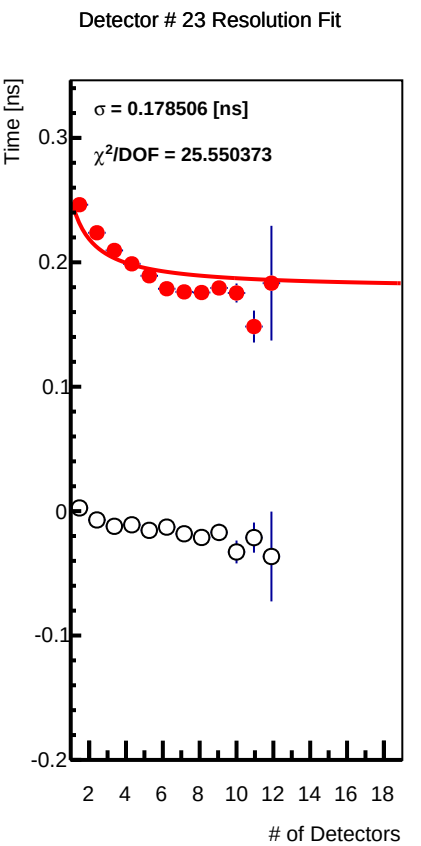

Detector # 18 Resolution Fit
σ = 0.166043 [ns]
χ²/DOF = 3.268445
Time [ns]
# of Detectors


Detector # 19 Resolution Fit
σ = 0.182622 [ns]
χ²/DOF = 20.786499
Time [ns]
# of Detectors

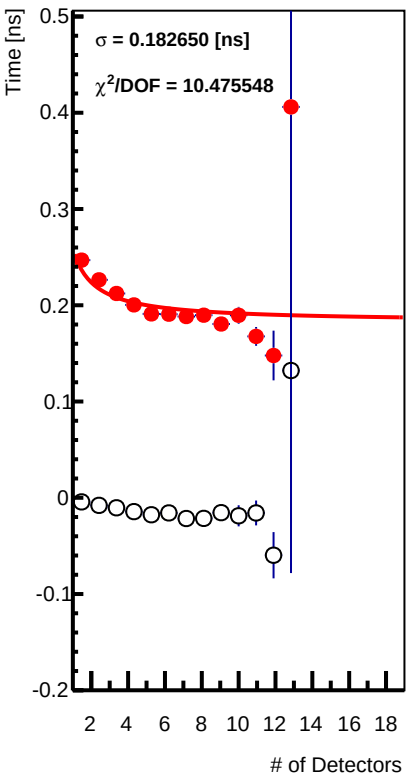

Detector # 20 Resolution Fit
σ = 0.181521 [ns]
χ²/DOF = 17.041175
Time [ns]
# of Detectors


Detector # 21 Resolution Fit
σ = 0.174835 [ns]
χ²/DOF = 19.292559
Time [ns]
# of Detectors

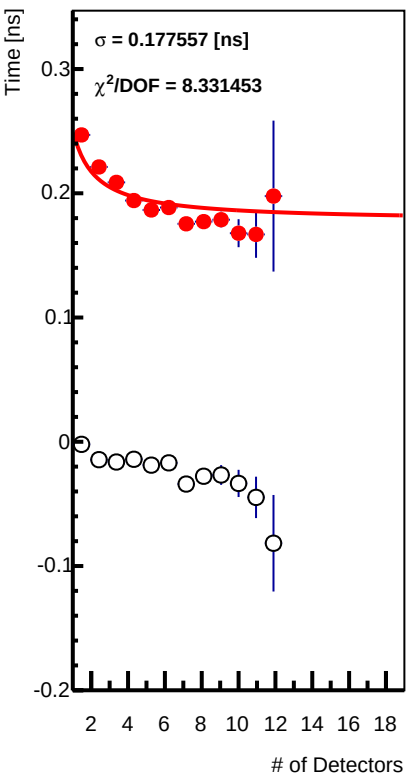

Detector # 22 Resolution Fit
σ = 0.178434 [ns]
χ²/DOF = 18.129535
Time [ns]
# of Detectors


Detector # 23 Resolution Fit
σ = 0.178506 [ns]
χ²/DOF = 25.550373
Time [ns]
# of Detectors

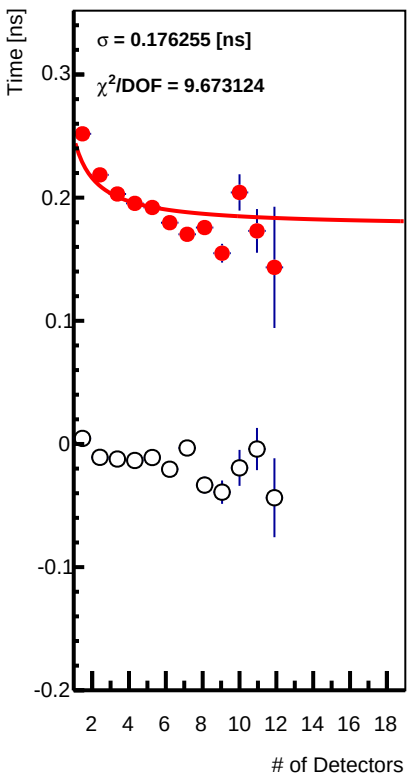
Detector # 24 Resolution Fit



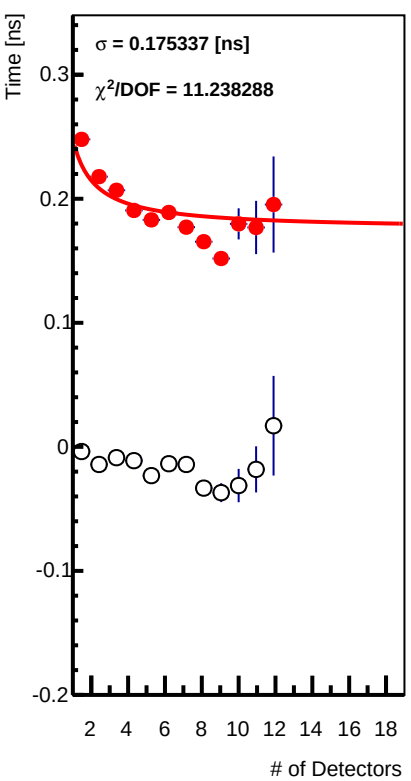
Detector # 25 Resolution Fit



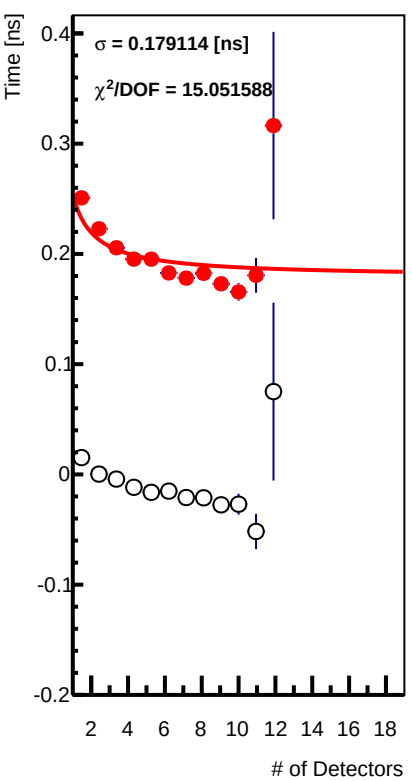
Detector # 26 Resolution Fit



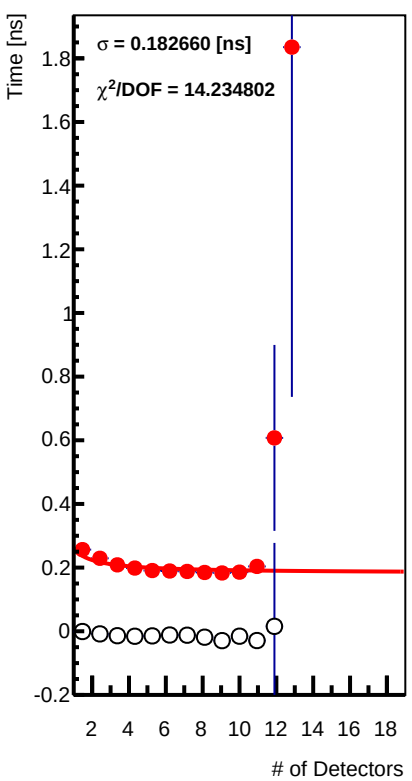
Detector # 27 Resolution Fit

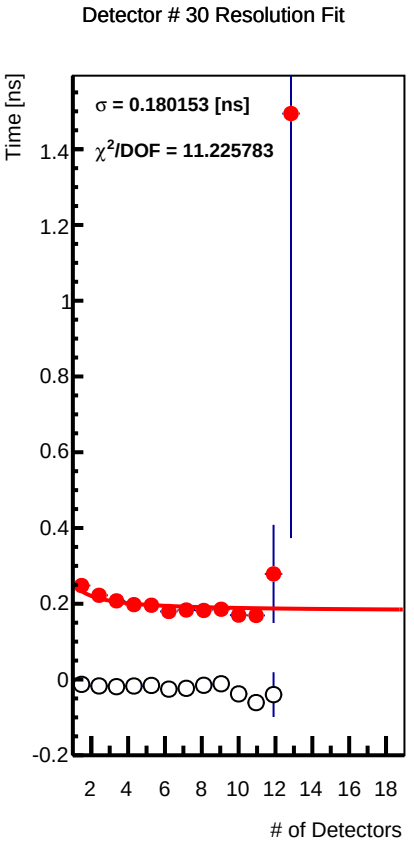


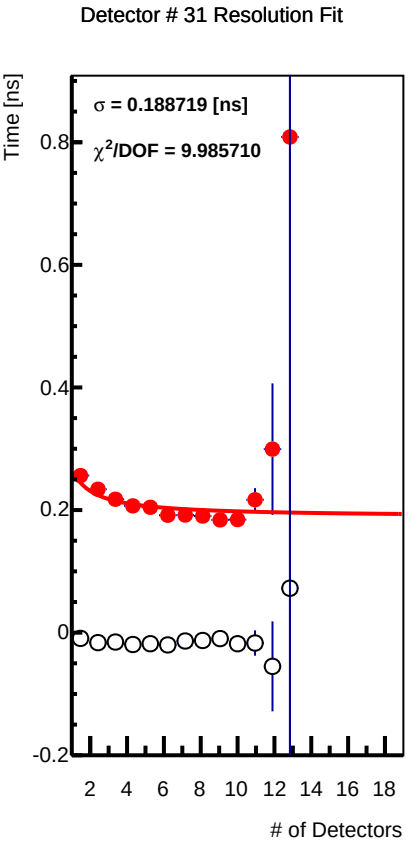
Detector # 28 Resolution Fit

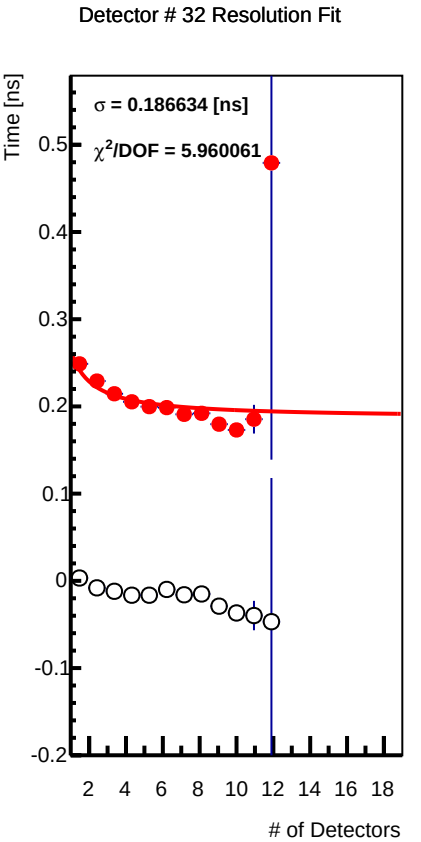


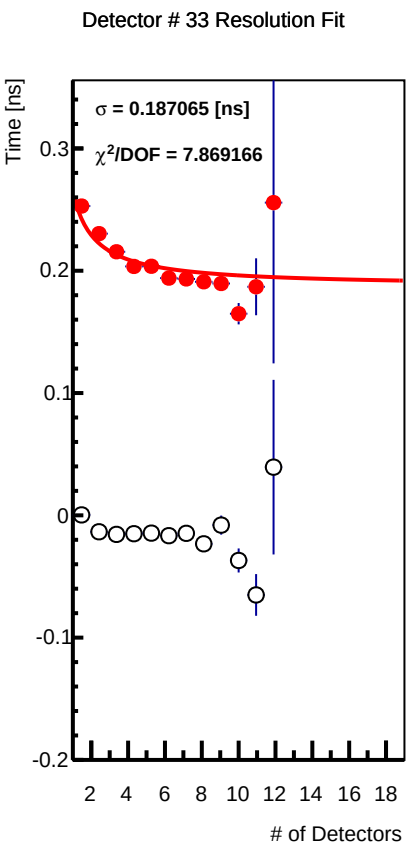
Detector # 29 Resolution Fit

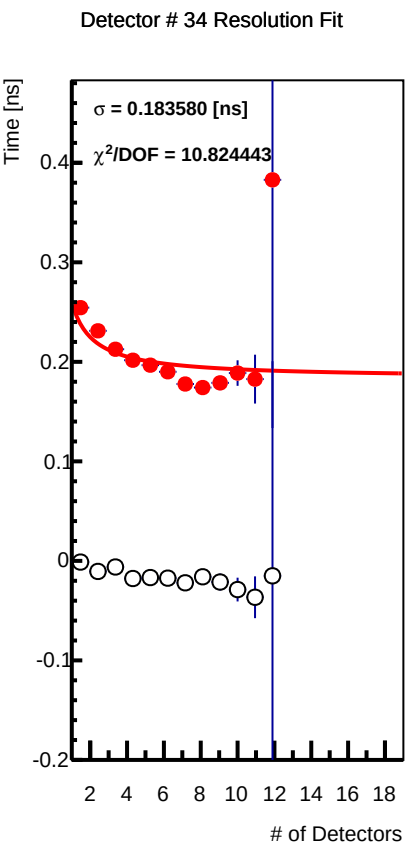


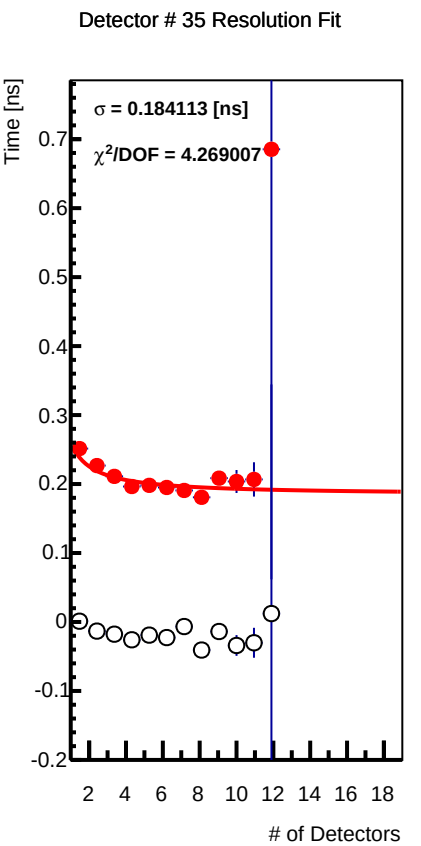

Detector # 30 Resolution Fit
σ = 0.180153 [ns]
χ²/DOF = 11.225783
Time [ns]
# of Detectors

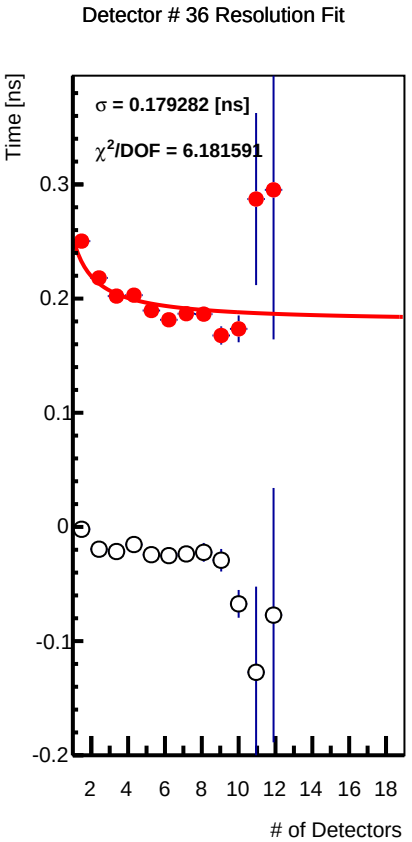

Detector # 31 Resolution Fit
σ = 0.188719 [ns]
χ²/DOF = 9.985710
Time [ns]
# of Detectors

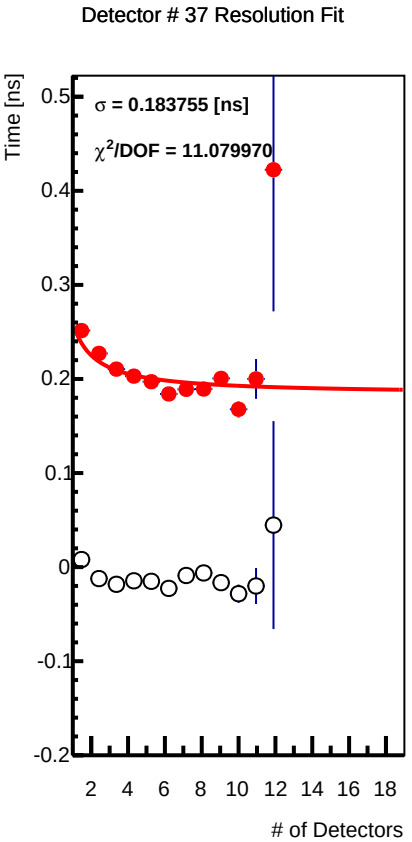

Detector # 32 Resolution Fit
σ = 0.186634 [ns]
χ²/DOF = 5.960061
Time [ns]
# of Detectors

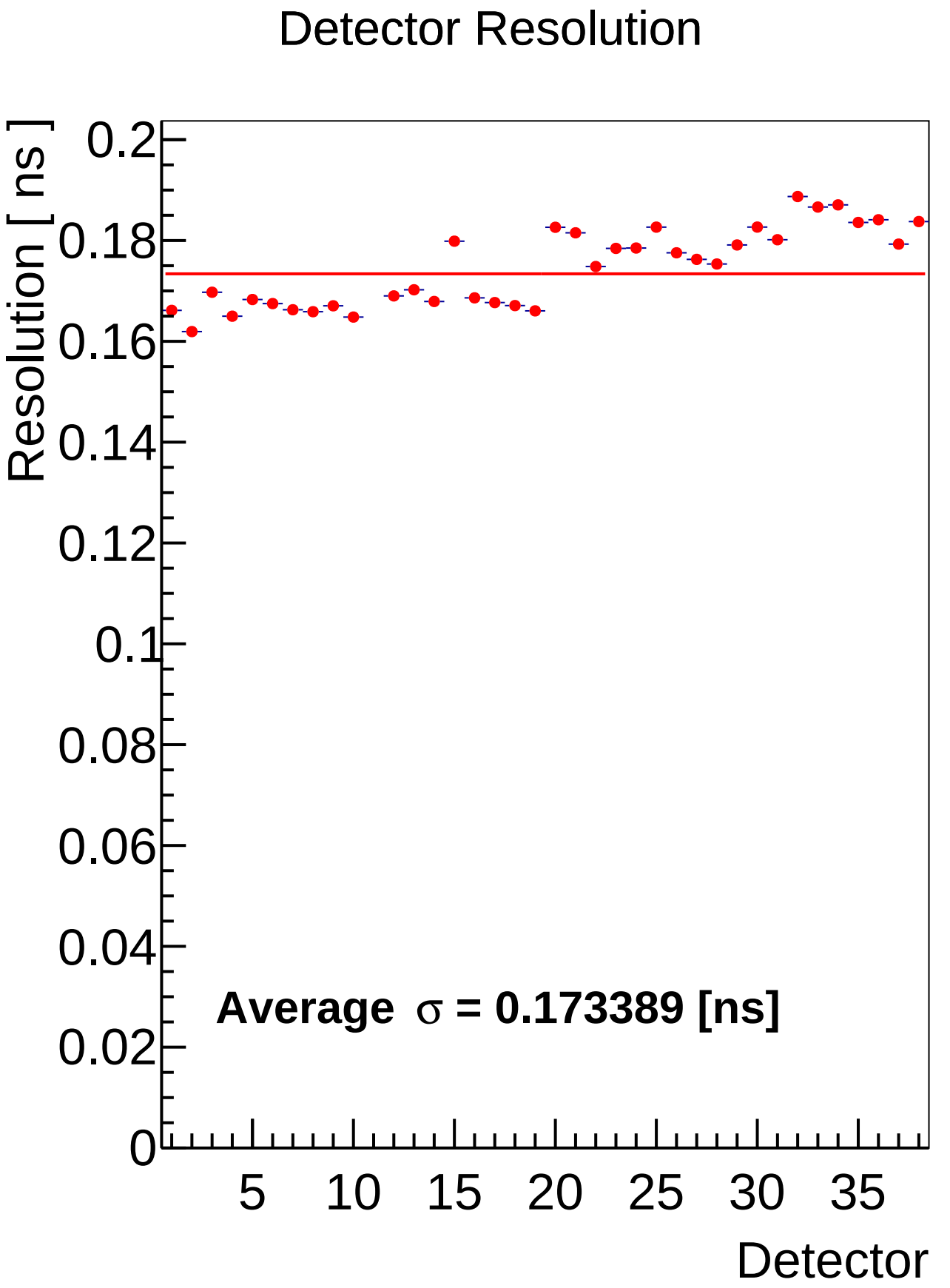

Detector # 33 Resolution Fit
σ = 0.187065 [ns]
χ²/DOF = 7.869166
Time [ns]
# of Detectors

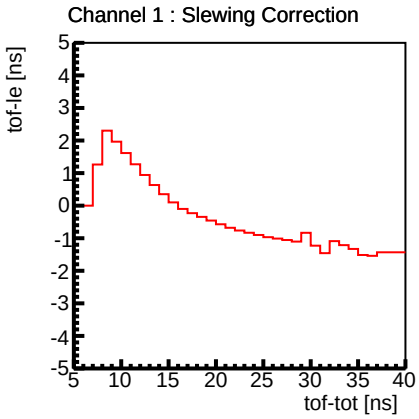

Detector # 34 Resolution Fit
σ = 0.183580 [ns]
χ²/DOF = 10.824443
Time [ns]
# of Detectors

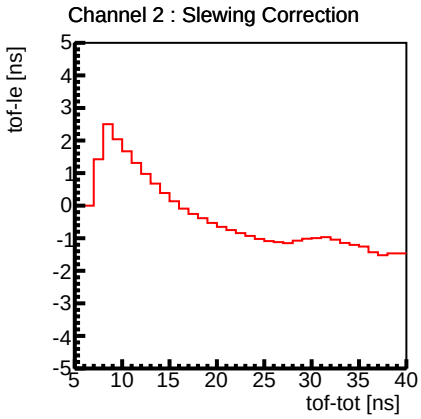

Detector # 35 Resolution Fit
σ = 0.184113 [ns]
χ²/DOF = 4.269007
Time [ns]
# of Detectors

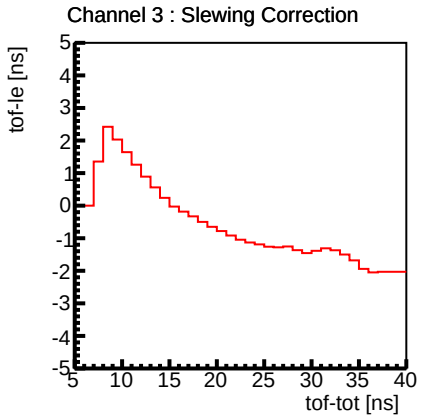

Detector # 36 Resolution Fit
σ = 0.179282 [ns]
χ²/DOF = 6.181591
Time [ns]
0.3
0.2
0.1
0
-0.1
-0.2
2 4 6 8 10 12 14 16 18
# of Detectors

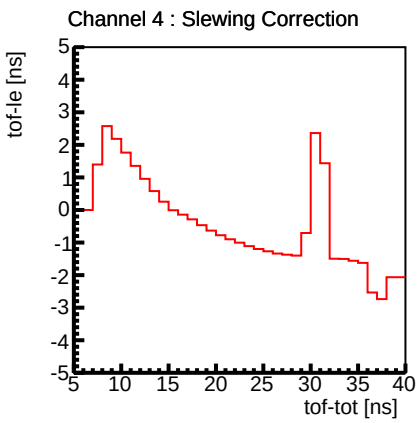

Detector # 37 Resolution Fit
σ = 0.183755 [ns]
χ²/DOF = 11.079970
Time [ns]
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
2 4 6 8 10 12 14 16 18
# of Detectors

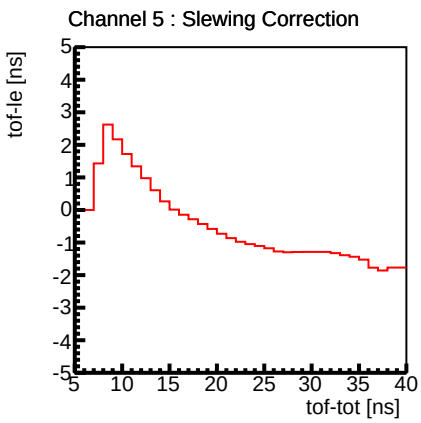

Detector Resolution
Resolution [ns]
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
5
10
15
20
25
30
35
Detector
Average σ = 0.173389 [ns]

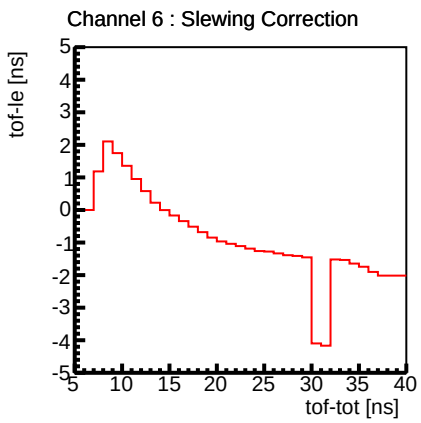

Channel 1 : Slewing Correction
tof-le [ns]
tof-tot [ns]

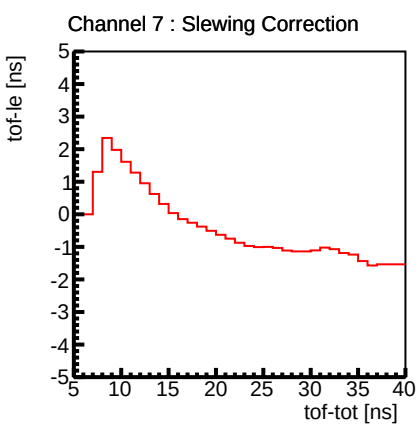

Channel 2 : Slewing Correction
tof-le [ns]
tof-tot [ns]

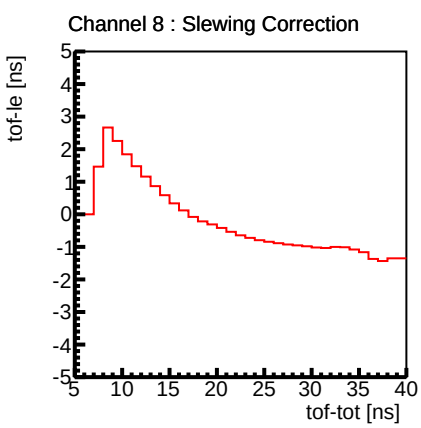

Channel 3 : Slewing Correction
tof-le [ns]
tof-tot [ns]

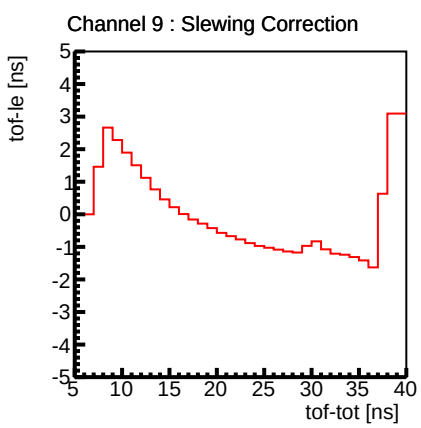

Channel 4 : Slewing Correction
tof-le [ns]
tof-tot [ns]

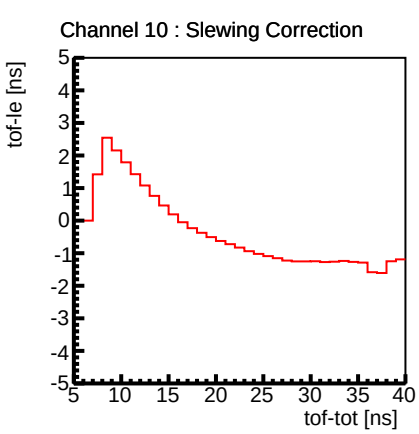

Channel 5 : Slewing Correction
tof-le [ns]
tof-tot [ns]

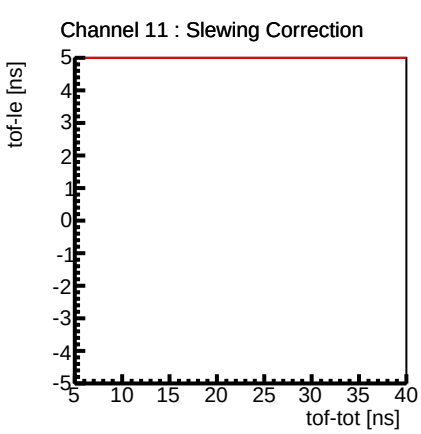

Channel 6 : Slewing Correction
tof-le [ns]
tof-tot [ns]

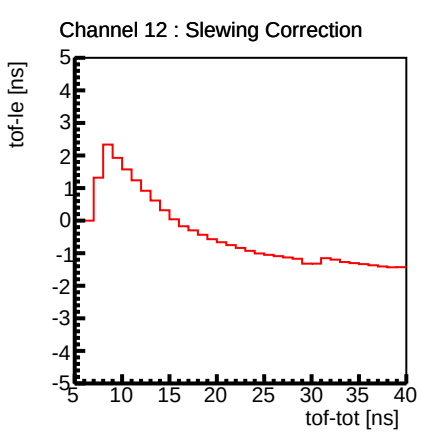

Channel 7 : Slewing Correction
tof-le [ns]
tof-tot [ns]


Channel 8 : Slewing Correction
tof-le [ns]
tof-tot [ns]


Channel 9 : Slewing Correction
tof-le [ns]
tof-tot [ns]


Channel 10 : Slewing Correction
tof-le [ns]
tof-tot [ns]


Channel 11 : Slewing Correction
tof-le [ns]
tof-tot [ns]


Channel 12 : Slewing Correction
tof-le [ns]
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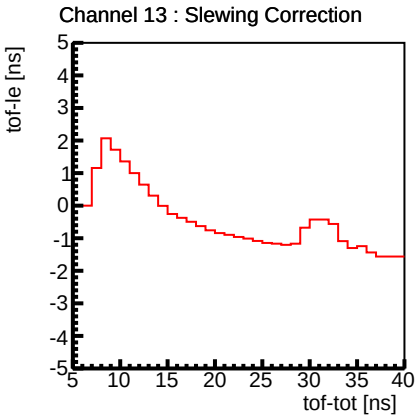
Channel 13 : Slewing Correction
tof-le [ns]
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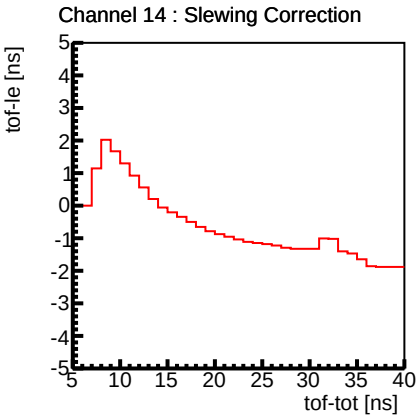
Channel 14 : Slewing Correction
tof-le [ns]
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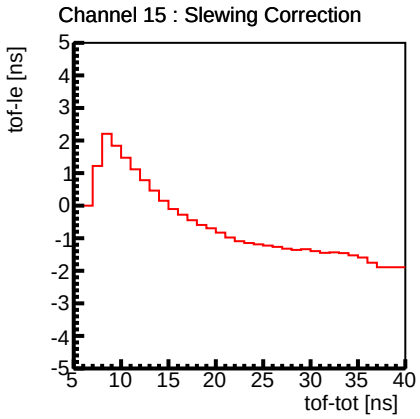
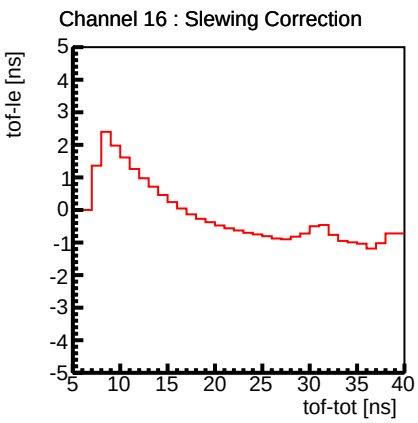
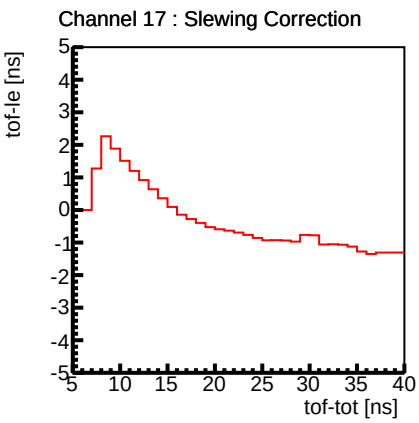

Channel 15 : Slewing Correction
tof-le [ns]
tof-tot [ns]


Channel 16 : Slewing Correction
tof-le [ns]
tof-tot [ns]


Channel 17 : Slewing Correction
tof-le [ns]
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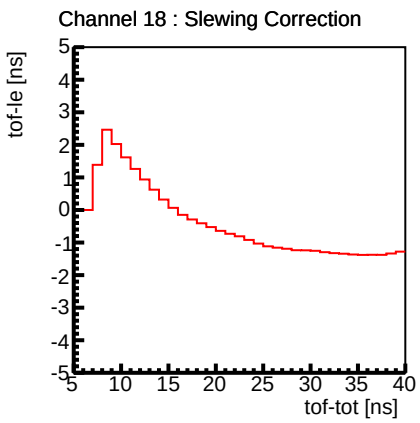
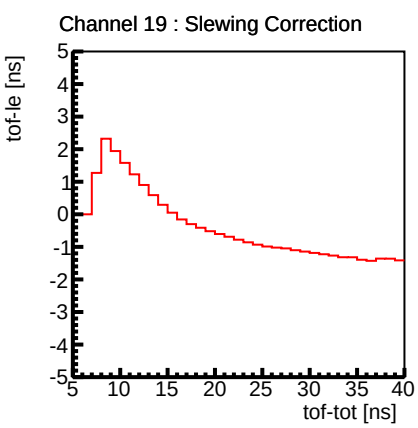
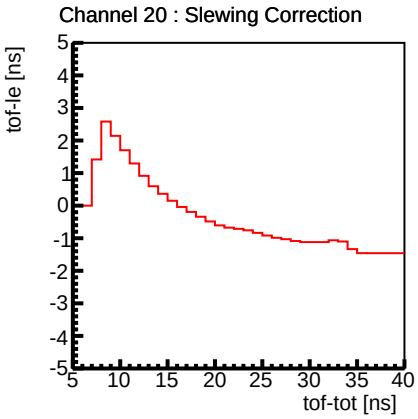
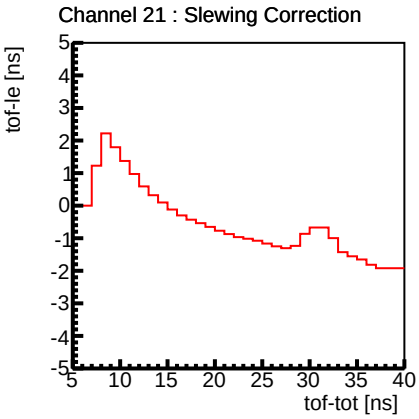
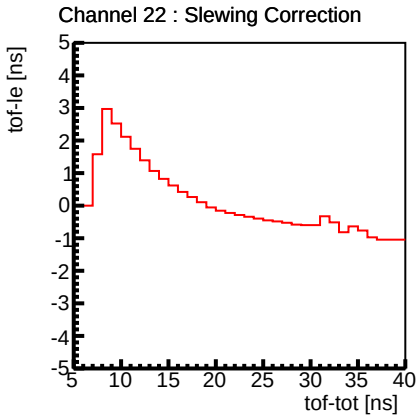
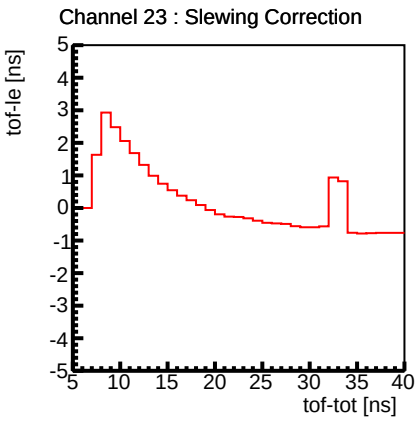

Channel 18 : Slewing Correction
tof-le [ns]
tof-tot [ns]

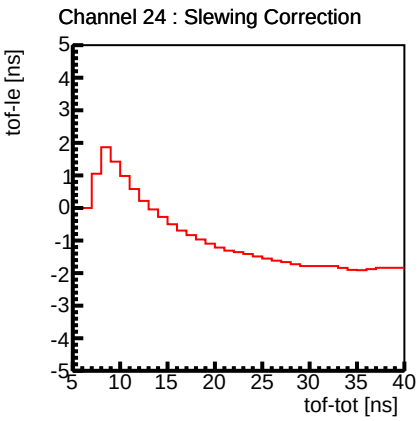

Channel 19 : Slewing Correction
tof-le [ns]
tof-tot [ns]

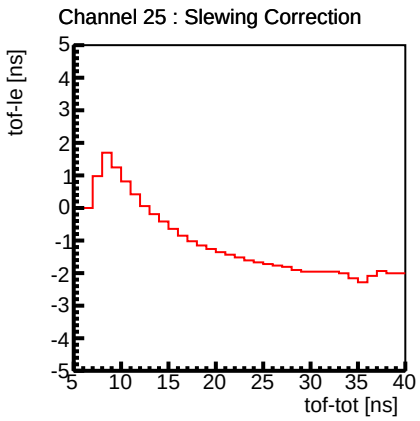

Channel 20 : Slewing Correction
tof-le [ns]
tof-tot [ns]

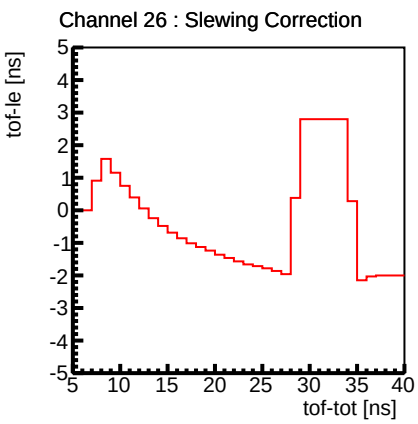

Channel 21 : Slewing Correction
tof-le [ns]
tof-tot [ns]

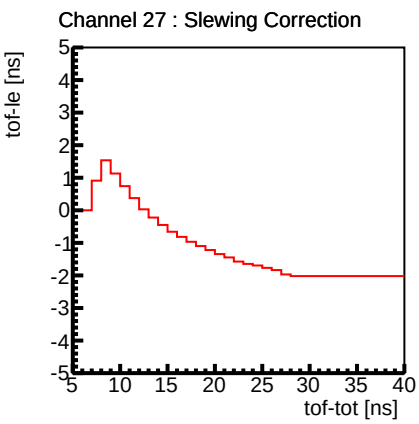

Channel 22 : Slewing Correction
tof-le [ns]
tof-tot [ns]

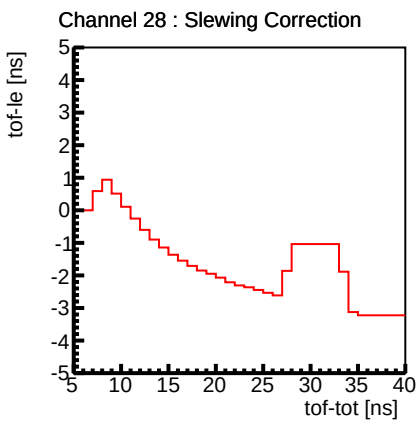

Channel 23 : Slewing Correction
tof-le [ns]
tof-tot [ns]

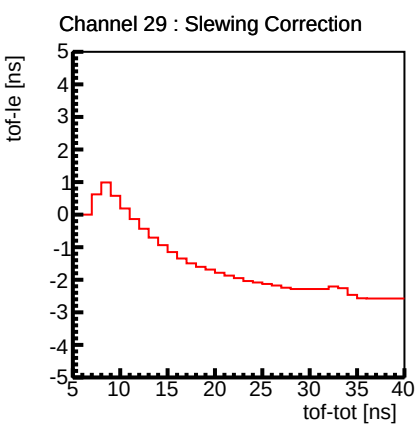

Channel 24 : Slewing Correction
tof-le [ns]
tof-tot [ns]

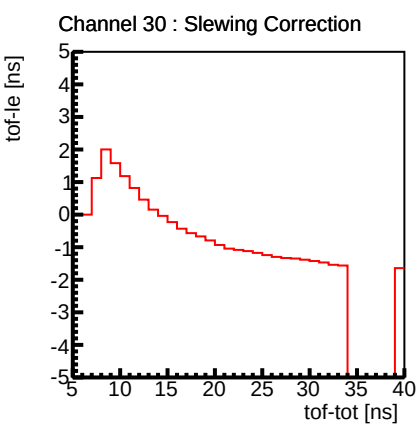

Channel 25 : Slewing Correction
tof-le [ns]
tof-tot [ns]

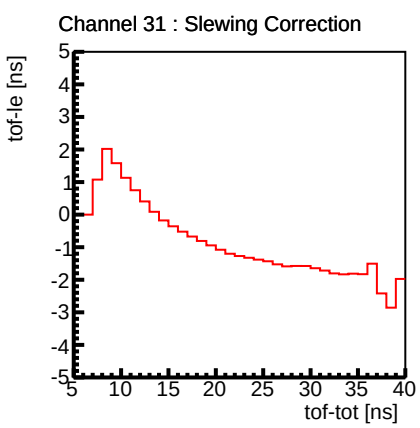

Channel 26 : Slewing Correction
tof-le [ns]
tof-tot [ns]

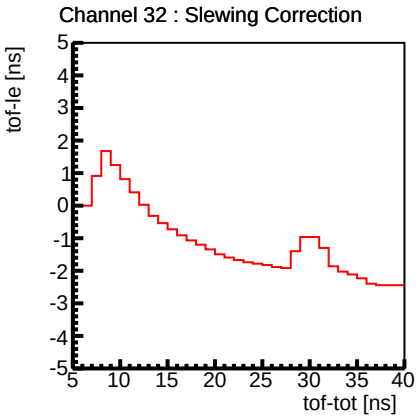

Channel 27 : Slewing Correction
tof-le [ns]
tof-tot [ns]

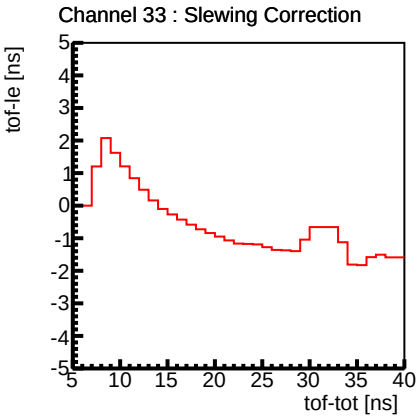

Channel 28 : Slewing Correction
tof-le [ns]
tof-tot [ns]

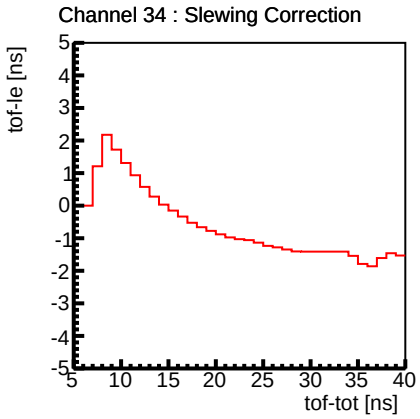

Channel 29 : Slewing Correction
tof-le [ns]
tof-tot [ns]


Channel 30 : Slewing Correction
tof-le [ns]
tof-tot [ns]


Channel 31 : Slewing Correction
tof-le [ns]
tof-tot [ns]


Channel 32 : Slewing Correction
tof-le [ns]
tof-tot [ns]


Channel 33 : Slewing Correction
tof-le [ns]
tof-tot [ns]


Channel 34 : Slewing Correction
tof-le [ns]
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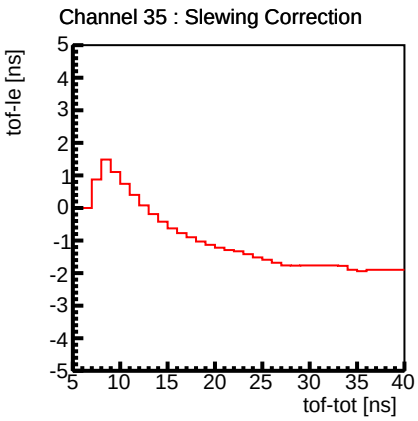
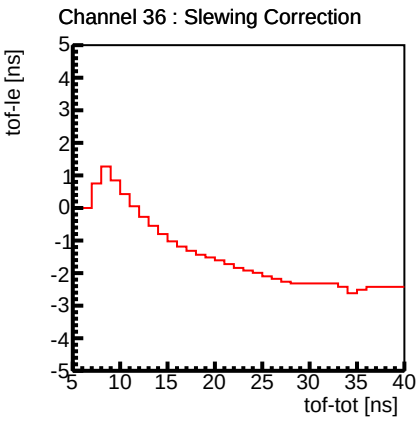
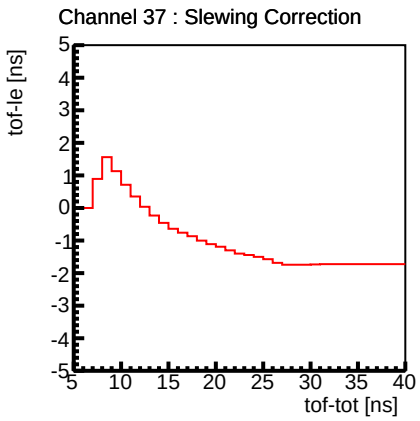
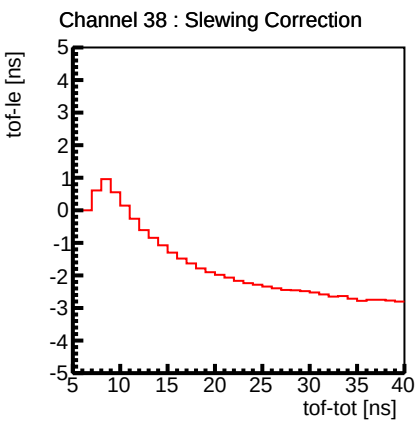

Channel 35 : Slewing Correction
tof-le [ns]
tof-tot [ns]


Channel 36 : Slewing Correction
tof-le [ns]
tof-tot [ns]


Channel 37 : Slewing Correction
tof-le [ns]
tof-tot [ns]


Channel 38 : Slewing Correction
tof-le [ns]
tof-tot [ns]