

```

prod2 prod2 llog2 obis2 =====Data set for BHLUM2 test=====
0 1 0 0 0 0 0 0 KAT1,KAT2,KAT3,KAT4,KAT5,KAT6,KAT7,KAT8
1000000 NEVT
3001 KEYOPT = 1000*KEYGEN +100*KEYREM +10*KEYWGT +KEYRND
1022 KEYRAD = 100*KEYUPD +10*KEYMOD +KEYPIA
2 KEYTRI Obsolete!!!
240D0 CMSENE
.0136 Tming theta_min [rad] generation
1.5707963 Tmaxg theta_max generation
0.9999D0 VMAXG v_max generation
1D-4 XK0 eps_CMS generation
.024 TminW theta_min sical trigger wide
.058 TmaxW theta_max sical trigger wide
.024 TminN theta_min trigger narrow
.058 TminN theta_max trigger narrow
0.5D0 VMAXE v_max trigger maximum v
32 NPHI nphi sical trigger no of phi sect.
16 NTHE ntheta sical trigger no of theta sect.
===== the end of data set BHLUM2 =====

```

```

# Process Id:
pid : 101
# 101 - e^+e^- --> e^-e^+
# 102 - e^+e^- --> ZH
# 103 - e^+e^- --> mu^-mu^+
# 104 - e^+e^- --> tau^-tau^+
# ALR:
alr : 0
# 0 - sigma, 1 - sigma_RL-sigma_LR, 2 - sigma_RL+sigma_LR,
# 3 - sigma_OL-sigma_OR, 4 - sigma_OL+sigma_OR
# Longitudinal polarization of initial particles:
lamep : 0 # e^+ polarization
lamem : 0 # e^- polarization
# EW scheme:
gfscheme : 0
# 0 - alpha(0)
# 1 - gfermi
# 2 - alpha(M_Z)
# Cuts:
costhc cut : 0.9928086 # cutn on |cos(theta)|
thetacut : 0.7792226 # cut on theta in degrees (thetacut < theta < 180-thetacut)
#
irun : 0
iborn : 0
iqed : 1
iew : 1
ilin : 1
ifgg : 1
ecm : 240 # collision CM energy
ome: 1e-4 # E_gamma > ome*ecm/2
#
exploreBorn : true
exploreVirt : true
exploreHard : true
#
printLHE : true
printROOT : true

```

```

=====
*****
BHLUM4: WINDOW A
*****
1000000 Accepted total NEVGEN A1
2864614 Raw prior reject. IEVENT A2
102.51865 +- 0.06537978 Xsec M.C. [nb] XSECMC A3
0.00063774 relat. error ERELMC A4
1.04799009 +- 0.00063774 weight M.C. AWT A5
20005 WT<0 NEVNEG A6
169 WT>WTMAX NEVOVE A7
3.00000000 Maximum WT WWMX A8
=====

```

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=====
MCresult (Born) = 97728.529253608 +- 0.13459752261311 RelErr = 1.3772592674942e-06
MCresult (B+S+V) = -21555.294450763 +- 0.18880150978627 RelErr = -8.7589390262114e-06
MCresult (Hard) = 123789.83714813 +- 20.02199672214 RelErr = 0.00016174184556185
MCresult (LL11) = 0 +- 0 RelErr = -nan
MCresult (LL22) = 0 +- 0 RelErr = -nan
MCresult (LL12) = 0 +- 0 RelErr = -nan
MCresult (LLF11) = 0 +- 0 RelErr = -nan
MCresult (LLF22) = 0 +- 0 RelErr = -nan
MCresult (LLF12) = 0 +- 0 RelErr = -nan
MCresult (Tot) = 102234.54269737 +- 20.022886873563 RelErr = 0.0001958524618517
MCresult (Delta) = 0.04610745171523 +- 0.00020488735866316 RelErr = 0.0044436929615758

```

$$100937pb$$

$$= 100.94nb$$

```

#####
# Process id:
pid : 101
# 101 - e^+e^- --> e^-e^+
# 102 - e^+e^- --> ZH
# 103 - e^+e^- --> mu^-mu^+
# 104 - e^+e^- --> tau^-tau^+
#####
# ALR:
alr : 0
# 0 - sigma, 1 - sigma_RL-sigma_LR, 2 - sigma_RL+sigma_LR,
# 3 - sigma_OL-sigma_OR, 4 - sigma_OL+sigma_OR
#####
# Longitudinal polarization of initial particles:
lamem : 0 # e^+ polarization
lamem : 0 # e^- polarization
#####
# EW scheme:
gfscheme : 0
# 0 - alpha(0)
# 1 - gfermi
# 2 - alpha(M_Z)
#####
# Cuts:
#costhcut : 0.9928086 # cutn on |cos(theta)|
thetacut : 0.7792226 # cut on theta in degrees (thetacut < theta < 180-thetacut)
#####
irun : 0
iborn : 0
iqed : 1
iew : 1
ilin : 1
ifgg : 1
ecm : 240 # collision CM energy
ome: 1e-4 # E_gamma > ome*ecm/2
#####
exploreBorn : true
exploreVirt : true
exploreHard : true
#####
printLHE : true
printROOT : true
#####
# Process id:
pid : 101
# 101 - e^+e^- --> e^-e^+
# 102 - e^+e^- --> ZH
# 103 - e^+e^- --> mu^-mu^+
# 104 - e^+e^- --> tau^-tau^+
#####
# ALR:
alr : 0
# 0 - sigma, 1 - sigma_RL-sigma_LR, 2 - sigma_RL+sigma_LR,
# 3 - sigma_OL-sigma_OR, 4 - sigma_OL+sigma_OR
#####
# Longitudinal polarization of initial particles:
lamem : 0 # e^+ polarization
lamem : 0 # e^- polarization
#####
# EW scheme:
gfscheme : 0
# 0 - alpha(0)
# 1 - gfermi
# 2 - alpha(M_Z)
#####
# Cuts:
#costhcut : 0.9928086 # cutn on |cos(theta)|
thetacut : 6.8754935 # cut on theta in degrees (thetacut < theta < 180-thetacut)
#####
irun : 0
iborn : 0
iqed : 1
iew : 1
ilin : 1
ifgg : 1
ecm : 240 # collision CM energy
ome: 1e-4 # E_gamma > ome*ecm/2
#####
exploreBorn : true
exploreVirt : true
exploreHard : true
#####
printLHE : true
printROOT : true
#####

```

```

=====
MCresult (Born) = 97728.529253608 +- 0.13459752261311 RelErr = 1.3772592674942e-06   jlt (Born) = 1201.3048408914 +- 0.001083378593732 RelErr = 9.0183486893149e-07
MCresult (B+S+V) = -21555.294450763 +- 0.18880150978627 RelErr = -8.7589390262114e-06   jlt (B+S+V) = -624.98352140279 +- 0.0034891457144438 RelErr = -5.5827803373317e-06
MCresult (Hard) = 123789.83714813 +- 20.02199672214 RelErr = 0.00016174184556185     jlt (Hard) = 1922.4470989213 +- 0.30965336346355 RelErr = 0.00016107250162426
MCresult (LL11) = 0 +- 0 RelErr = -nan                                             jlt (LL11) = 0 +- 0 RelErr = -nan
MCresult (LL22) = 0 +- 0 RelErr = -nan                                             jlt (LL22) = 0 +- 0 RelErr = -nan
MCresult (LL12) = 0 +- 0 RelErr = -nan                                             jlt (LL12) = 0 +- 0 RelErr = -nan
MCresult (LLF11) = 0 +- 0 RelErr = -nan                                            jlt (LLF11) = 0 +- 0 RelErr = -nan
MCresult (LLF22) = 0 +- 0 RelErr = -nan                                            jlt (LLF22) = 0 +- 0 RelErr = -nan
MCresult (LLF12) = 0 +- 0 RelErr = -nan                                            jlt (LLF12) = 0 +- 0 RelErr = -nan
MCresult (Tot) = 102234.54269737 +- 20.022886873563 RelErr = 0.0001958524618517    jlt (Tot) = 1297.4635775185 +- 0.30967302052666 RelErr = 0.00023867569455701
MCresult (Delta) = 0.04610745171523 +- 0.00020488735866316 RelErr = 0.0044436929615758 jlt (Delta) = 0.080045241935286 +- 0.00025778213589103 RelErr = 0.0032204554531728
=====

```

```

prod2 prod2 llog2 obis2  =====Data set for BHLUM2 test=====
0 1 0 0 0 0 0 0      KAT1,KAT2,KAT3,KAT4,KAT5,KAT6,KAT7,KAT8
1000000      NEVT
3001      KEYOPT = 1000*KEYGEN +100*KEYREM +10*KEYWGT +KEYRND
1022      KEYRAD =          100*KEYUPD +10*KEYMOD +KEYPIA
2      KEYTRI  Obsolete!!!
24000      CMSENE
.0136      Tming  theta_min [rad]      generation
.120      Tmaxg  theta_max      generation
0.999900      VMAXG  v_max      generation
1D-4      XK0    eps_CMS      generation
.024      TminW  theta_min sical      trigger wide
.058      TmaxW  theta_max sical      trigger wide
.024      TminN  theta_min      trigger narrow
.058      TminN  theta_max      trigger narrow
0.500      VMAXE  v_max      trigger maximum v
32      NPHI    nphi      sical      trigger no of phi      sect.
16      NTHE    ntheta    sical      trigger no of theta sect.
===== the end of data set BHLUM2 =====

```

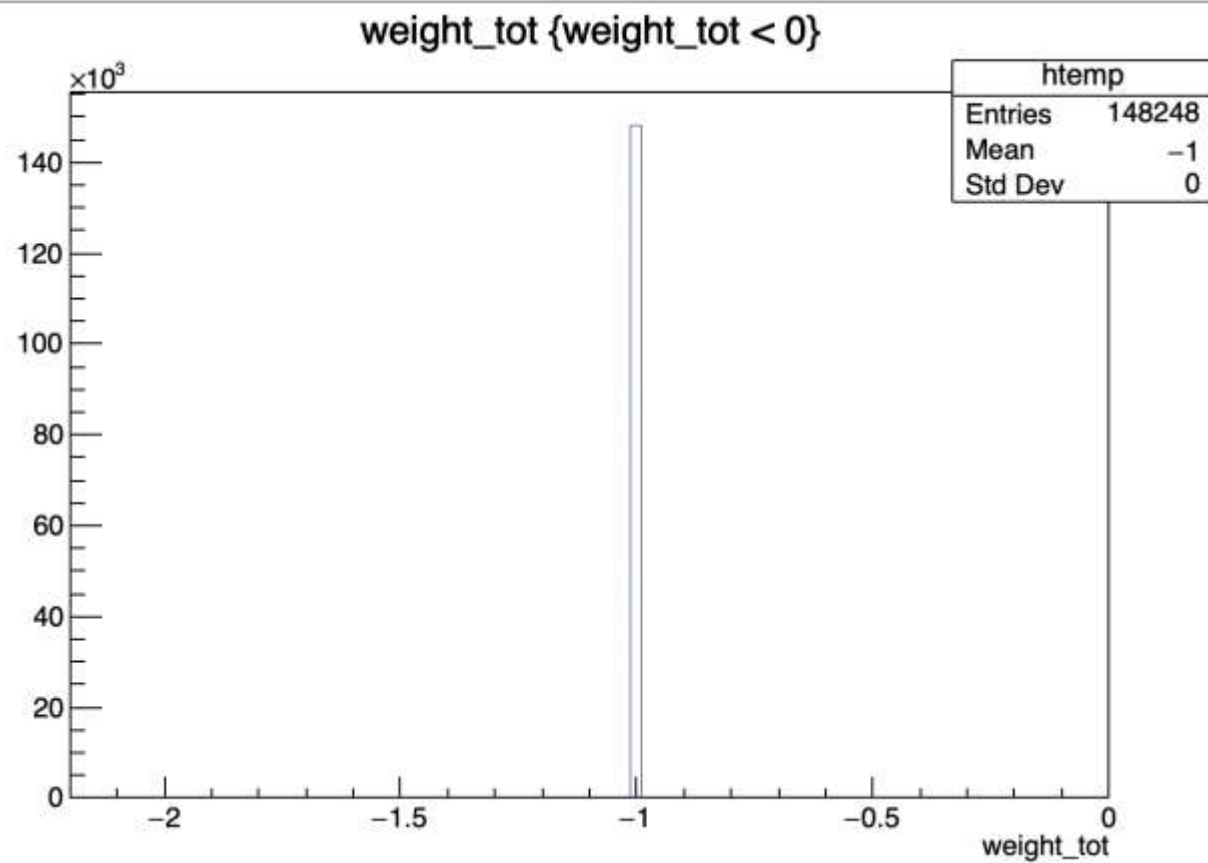
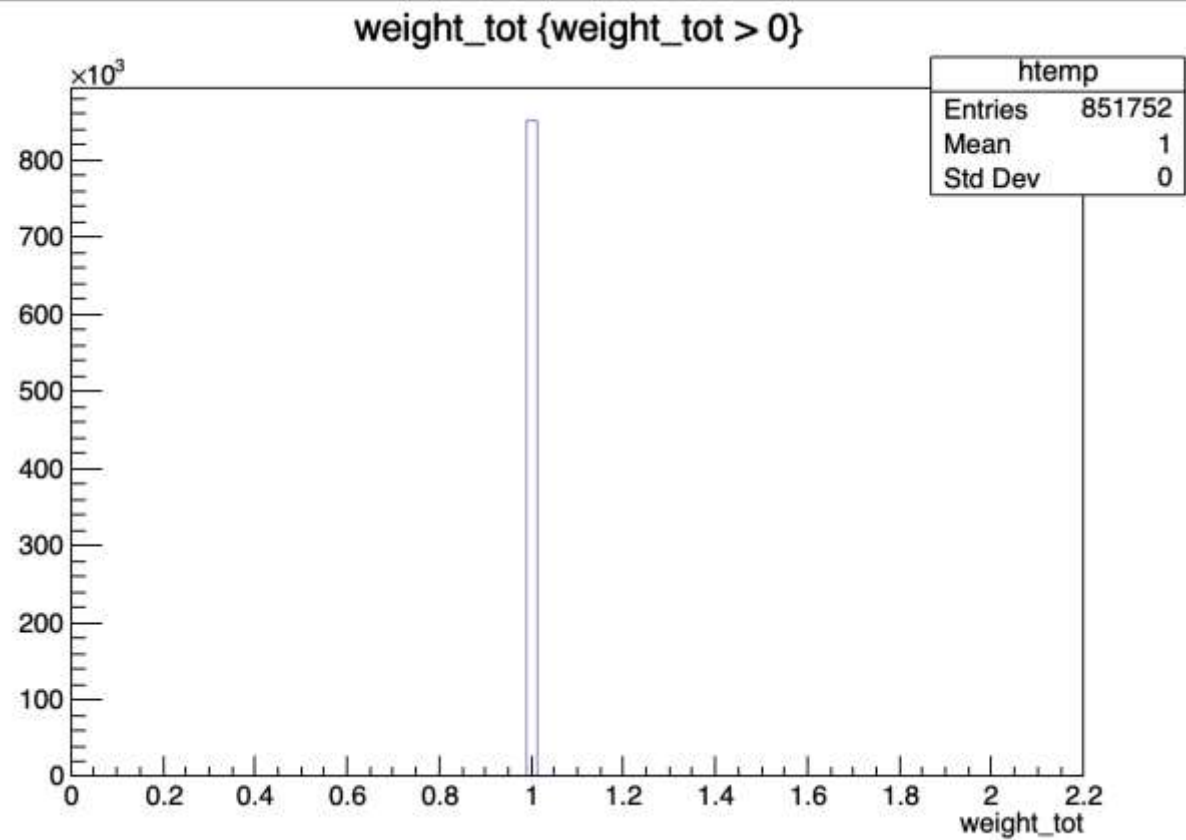
101.21nb

```

=====
=          *****          =
=          BHLUM4:      WINDOW A          =
=          *****          =
=          1000000      Accepted total      NEVGEN      A1 =
=          2864832      Raw prior reject.      IEVENT      A2 =
=          101.21317      +- 0.03902768      Xsec M.C. [nb]      XSECMC      A3 =
=          0.00038560      relat. error      ERELMC      A4 =
=          1.04802653      +- 0.00038560      weight M.C.      AWT      A5 =
=          1509      WT<0      NEVNEG      A6 =
=          27      WT>WTMAX      NEVOVE      A7 =
=          3.00000000      Maximum WT      WWMX      A8 =
=====

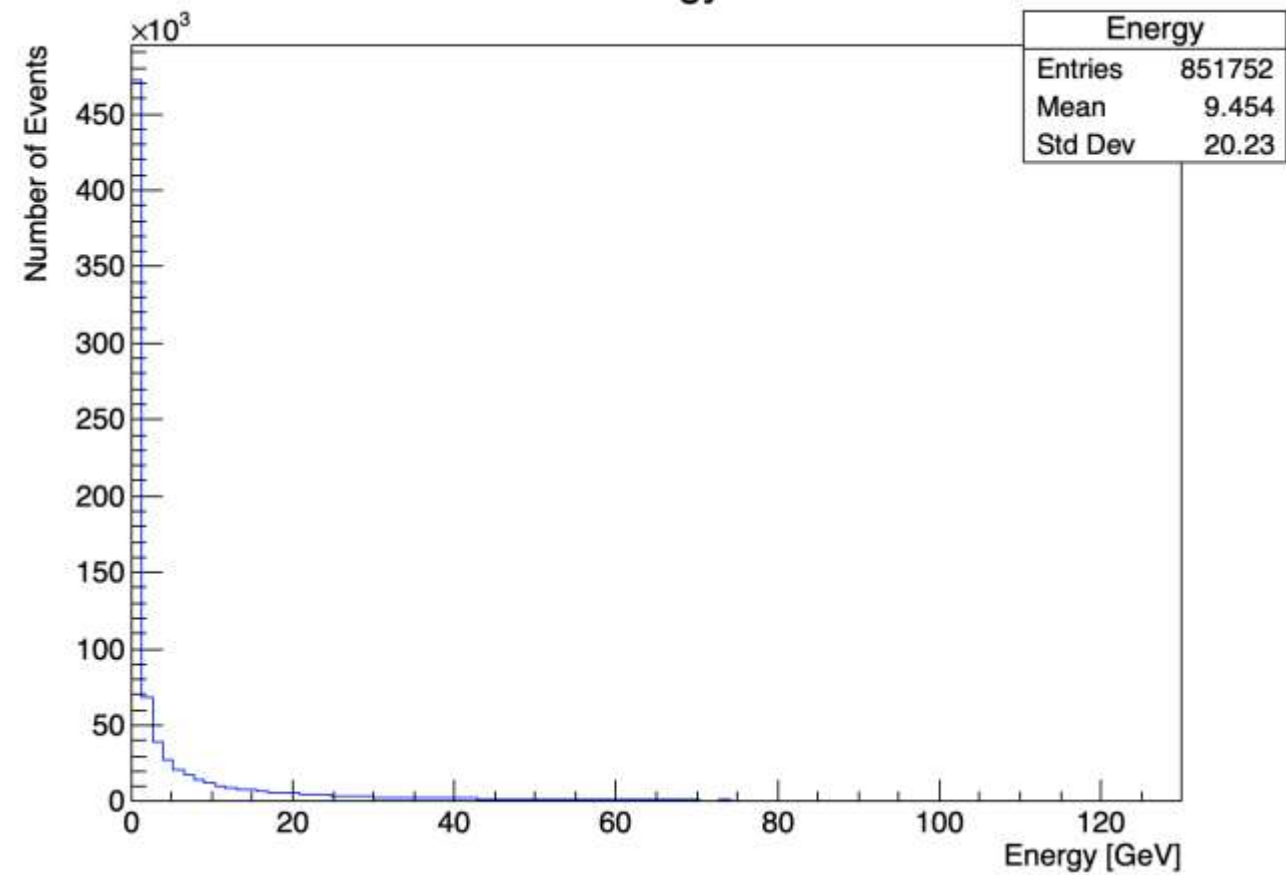
```

$$0.0136 < \theta < \pi - 0.0136$$

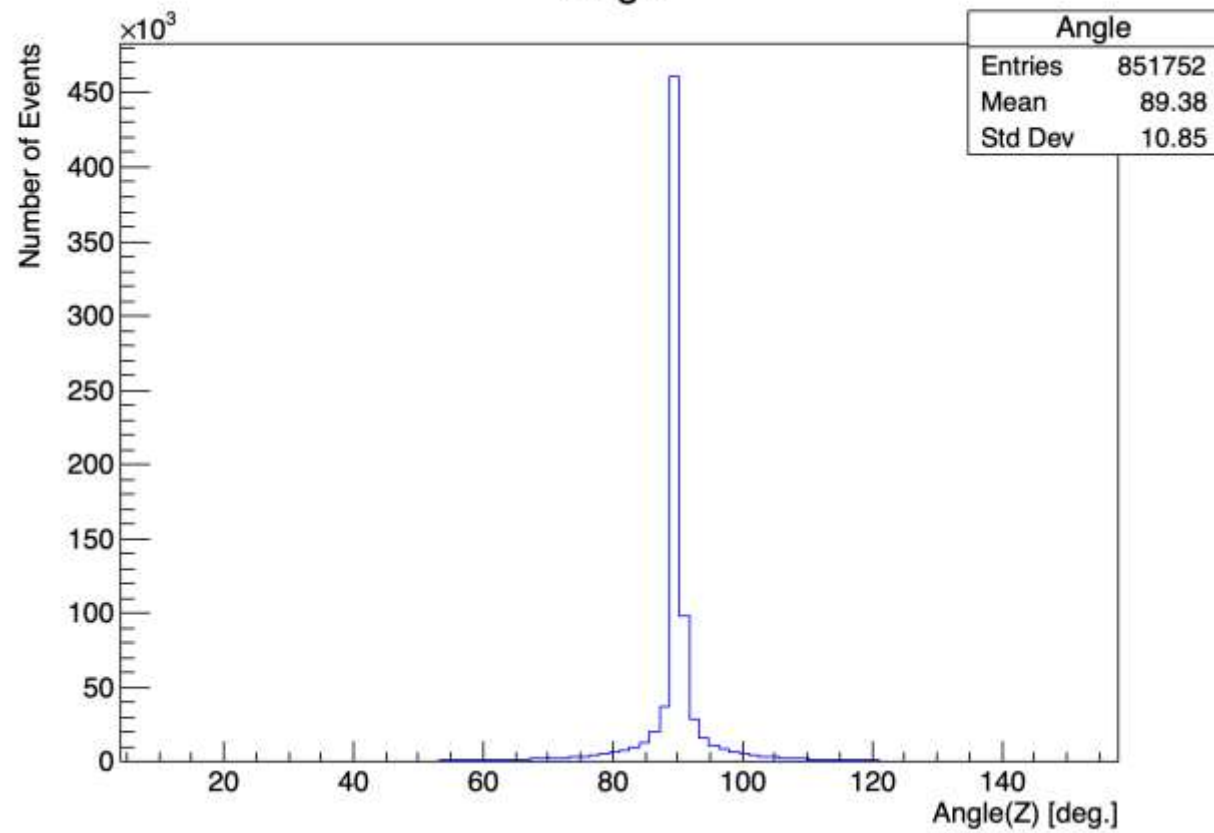


$$0.0136 < \theta < \pi - 0.0136$$

Energy



Angle



$$0.0136 < \theta < \pi - 0.0136$$

