

GuineaPig 1.2.2

输入 BHLUMI 产生的正负电子

进行 Bhabha deflection ($\text{do_Bhabha} = 1$)

输出结果与输入在动量方向相同，但能量变为约 60 GeV (负号代表反粒子)

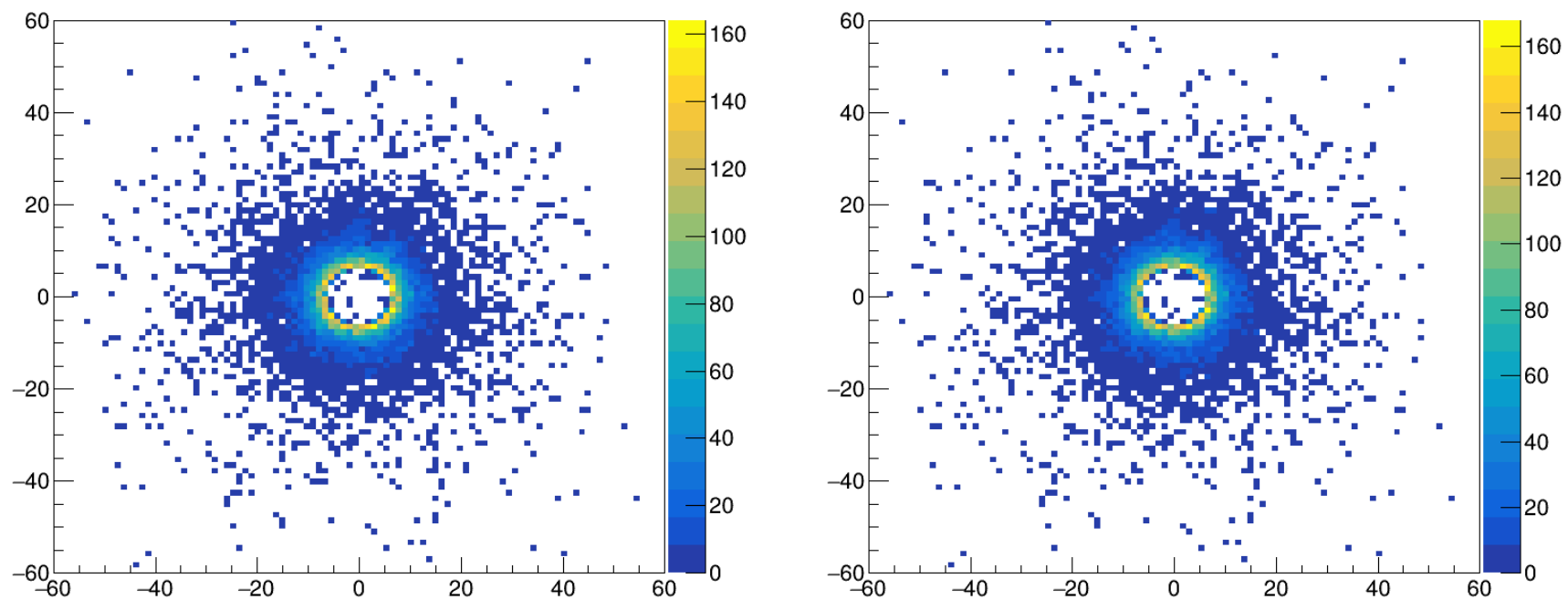
```
1 3 57.5998 0.0167625 -0.00125778 0.999859 229032 -28501.8 2.35729e+07 -1 2 7
2 2 -57.6001 0.0153039 -0.00661994 -0.999861 182116 -150067 -2.35457e+07 -1 6 2
3 1 57.5923 0.00478897 0.00917897 0.999946 -85277.6 208098 2.31329e+07 -1 3 5
4 5 -57.6 0.0064437 -0.0140224 -0.999881 -6481.16 -312305 -2.31433e+07 -1 7 3
5 6 -50.6413 6.42188e-05 -0.0132973 -0.999912 -177391 -293367 -2.28841e+07 -1 8 3
6 4 57.5992 -0.00240343 0.010402 0.999943 -203152 233744 2.28165e+07 -1 4 5
7 30 57.6002 -0.0500771 0.0294434 0.998311 -1.19769e+06 610926 2.24452e+07 -1 5 13
8 1 -57.6003 -0.00474168 -0.00917702 -0.999947 -288915 -208017 -2.24575e+07 -1 3 5
9 9 57.5998 0.0105061 0.00153346 0.999944 68029.7 33402.3 2.23508e+07 -1 5 8
10 4 -36.2641 0.00385751 -0.0166032 -0.999855 -72895.3 -373123 -2.23503e+07 -1 4 5
11 10 57.5997 0.0120442 0.00380363 0.99992 94428 82646.7 2.20271e+07 -1 6 7
12 7 57.2658 -0.000375127 0.0105137 0.999945 -160377 229904 2.20016e+07 -1 6 6
13 14 57.5978 -0.00573172 -0.00992146 0.999934 -271043 -213093 2.19244e+07 -1 6 8
14 11 57.2734 0.0104484 0.00608841 0.999927 45959.5 131051 2.18083e+07 -1 6 8
15 2 57.6 -0.0151174 0.00669106 0.999863 -514370 151516 2.18935e+07 -1 6 2
16 24 -57.5999 0.0111106 -0.00189564 -0.999936 95062.1 -39875.2 -2.18292e+07 -1 10 6
17 7 -57.6007 0.000468163 -0.0105134 -0.999945 -140538 -229840 -2.19258e+07 -1 6 6
18 8 57.6 -0.00785198 -0.00835038 0.999934 -328226 -181702 2.17604e+07 -1 6 7
19 8 -57.6001 0.00795105 0.00844192 -0.999933 13069.9 183773 -2.17234e+07 -1 6 7
20 16 57.5387 -0.0117246 -0.0156877 0.999808 -406209 -335970 2.16741e+07 -1 6 8
```

Accelerator & Parameter Config

```
$ACCELERATOR::CEPC_H
{
    particles      = 13.0;
    energy         = 120.0;
    espread        = 0.17;
    which_espread  = 1;
    sigma_x        = 14000.0;
    sigma_y        = 36.0;
    sigma_z        = 4100.0;
    beta_x         = 300.0;
    beta_y         = 1.0;
    dist_z         = 0;
    angle_x        = 0.0165;
}
```

```
$PARAMETERS:: CEPC
{
    n_x            = 64*4;
    n_y            = 64*4;
    n_z            = 61;
    n_t            = 10;
    n_m            = 50000;
    cut_x          = 150*sigma_x.1;
    cut_y          = 60.0*sigma_y.1;
    cut_z          = 3.0*sigma_z.1;
    rndm_save      = 0;
    rndm_load      = 0;
    do_lumi        = 0;
    num_lumi       = 200000;
    lumi_p         = 1e-28;
    store_beam     = 0;
    electron_ratio = 1.0;

    electron_ratio = 1.0;
    do_photons     = 0;
    photon_ratio   = 1.0;
    do_hadrons     = 0;
    store_hadrons  = 0;
    do_jets        = 0;
    store_jets     = 0;
    do_pairs       = 0;
    pair_ratio     = 1.0;
    pair_q2        = 2;
    track_pairs    = 1;
    grids          = 7;
    pair_ecut      = 0.000511;
    beam_size      = 1;
    do_ellos       = 1;
    store_photons  = 0;
    store_pairs    = 0;
    do_bhabhas     = 1;
    rndm_seed      = 1;
}
```



运行前后在 $z = 647 \text{ mm}$ 处对比

(完全相同)

```
1 *****
2 * guineapig++ Version 1.2.2
3 * Program written by Daniel Schulte at DESY and CERN
4 * object oriented by Guy Le Meur at LAL-Orsay
5 * contributions from C. Rimbault at LAL-Orsay
6 * B. Dalena, J. Esberg and J. Snuverink at CERN
7 *
8 * Compiled with FFTW: UNKNOWN
9 *****
10 random generator successful test : 64-bits computer
11 the random number seed is : 1
12 Loading Bhabha samples
13 Bhabha nr. 0 is turned backwards!
14 Bhabha nr. 1 is turned backwards!
15 Bhabha nr. 2 is turned backwards!
16 Bhabha nr. 3 is turned backwards!
17 Bhabha nr. 4 is turned backwards!
18 Bhabha nr. 5 is turned backwards!
19 Bhabha nr. 6 is turned backwards!
20 Bhabha nr. 7 is turned backwards!
21 Bhabha nr. 8 is turned backwards!
22 Bhabha nr. 9 is turned backwards!
23 Bhabha nr. 10 is turned backwards!
24 WARNING BHABHASAMPLES::pick_next_bhabha: the vector of bhabha samples is out bhabha_.size()= 11next= 11
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```

输入10个事例

最后反复很多次 WARNING 请求第11个bhabha事例