Mokka Study

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Regular Friday Meeting

January 30, 2015

Status

ilcdirac productions validation

- I want to isolate differences comming just from: using/not using ilcdirac.
- As reported before (Sudo san and me): we found some issues in Mokka concerning reproductibility.
- I've been looking that in more detail.

Steering file unstabilities

- The format of steering file could affect output.
  - Even comments lines could have effect!.
  - ilcdirac insert several comment lines (each time it modifies one steering parameter).
- Need to separate this effect from others.
- I keep debugging this issue (Work in Progress).

Are you really a comment?

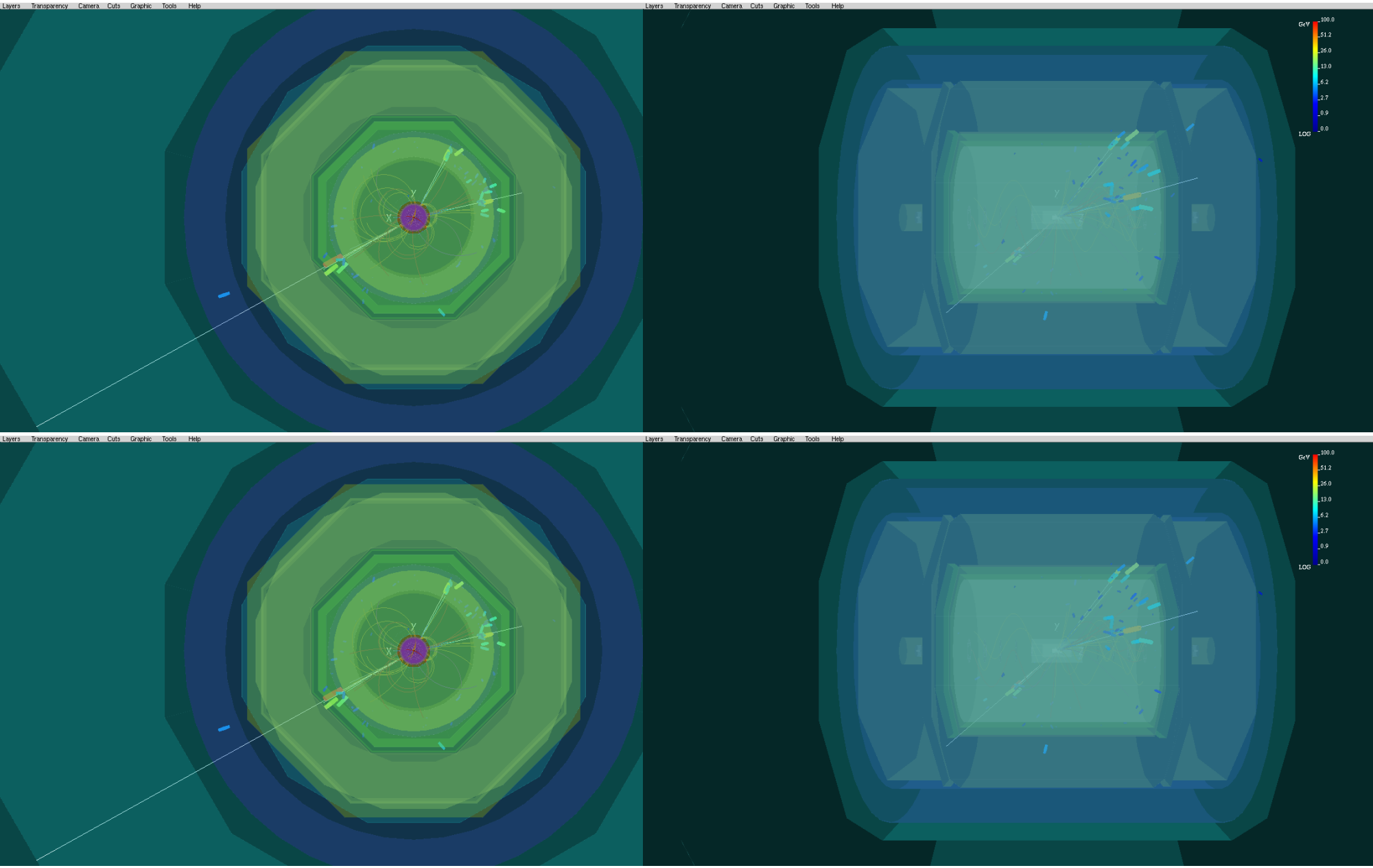
The length of one comment line affect simulation!

```
[calancha@ccw09 steer]$ diff mokka_6.steer mokka_7.steer
  56c56
< # hello world
---
> # To be a comment or not to be a comment
64c64
< /Mokka/init/lcioFilename out/out_6.slcio
---
> /Mokka/init/lcioFilename out/out_7.slcio
```

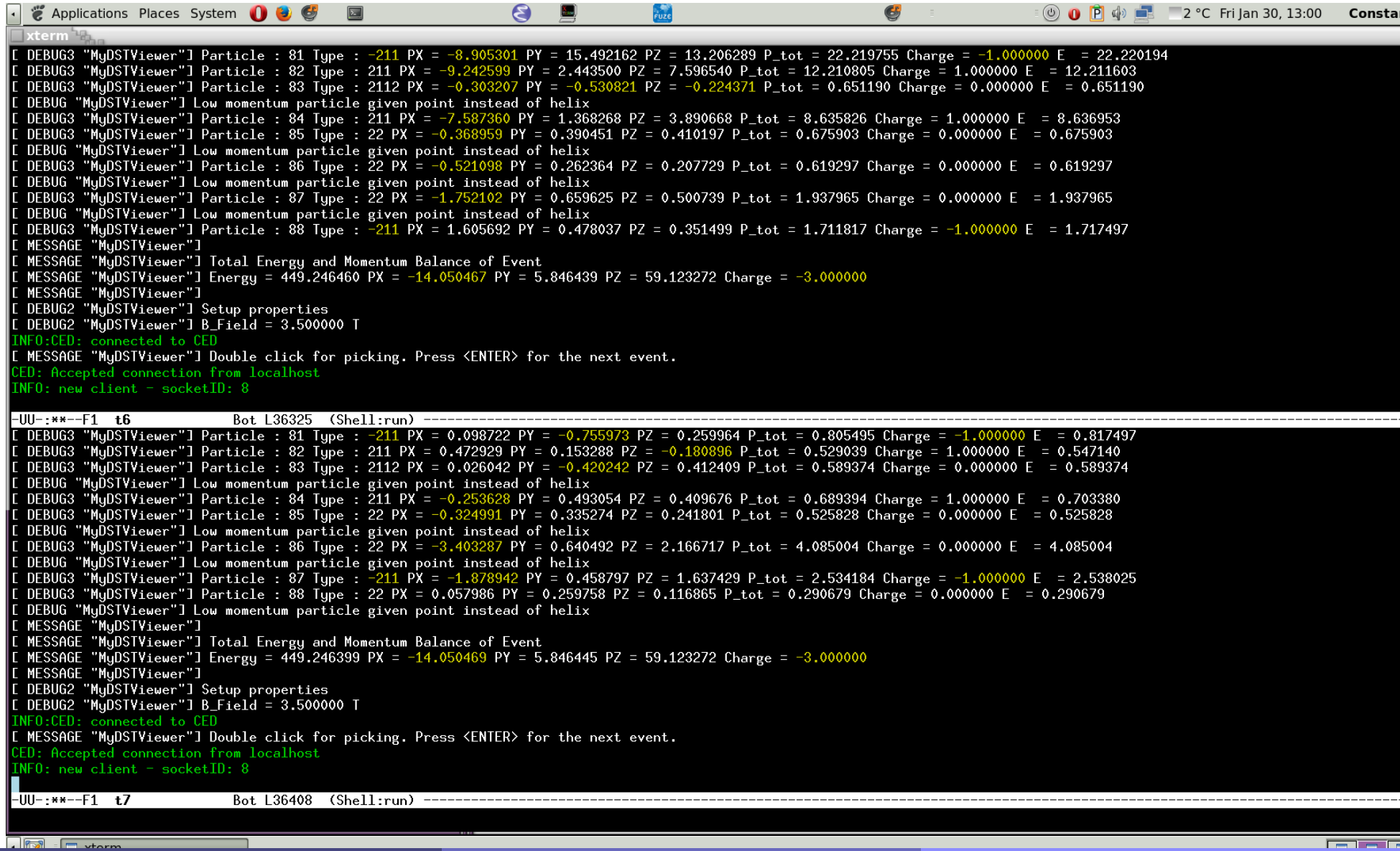
Same software version used to sim/rec

- First 2 events no difference.
- Since the 3rd event, we see differences in the event collections.
- Previous Diff. in the steer file are the only differences
  - same input stdhep, soft versions.

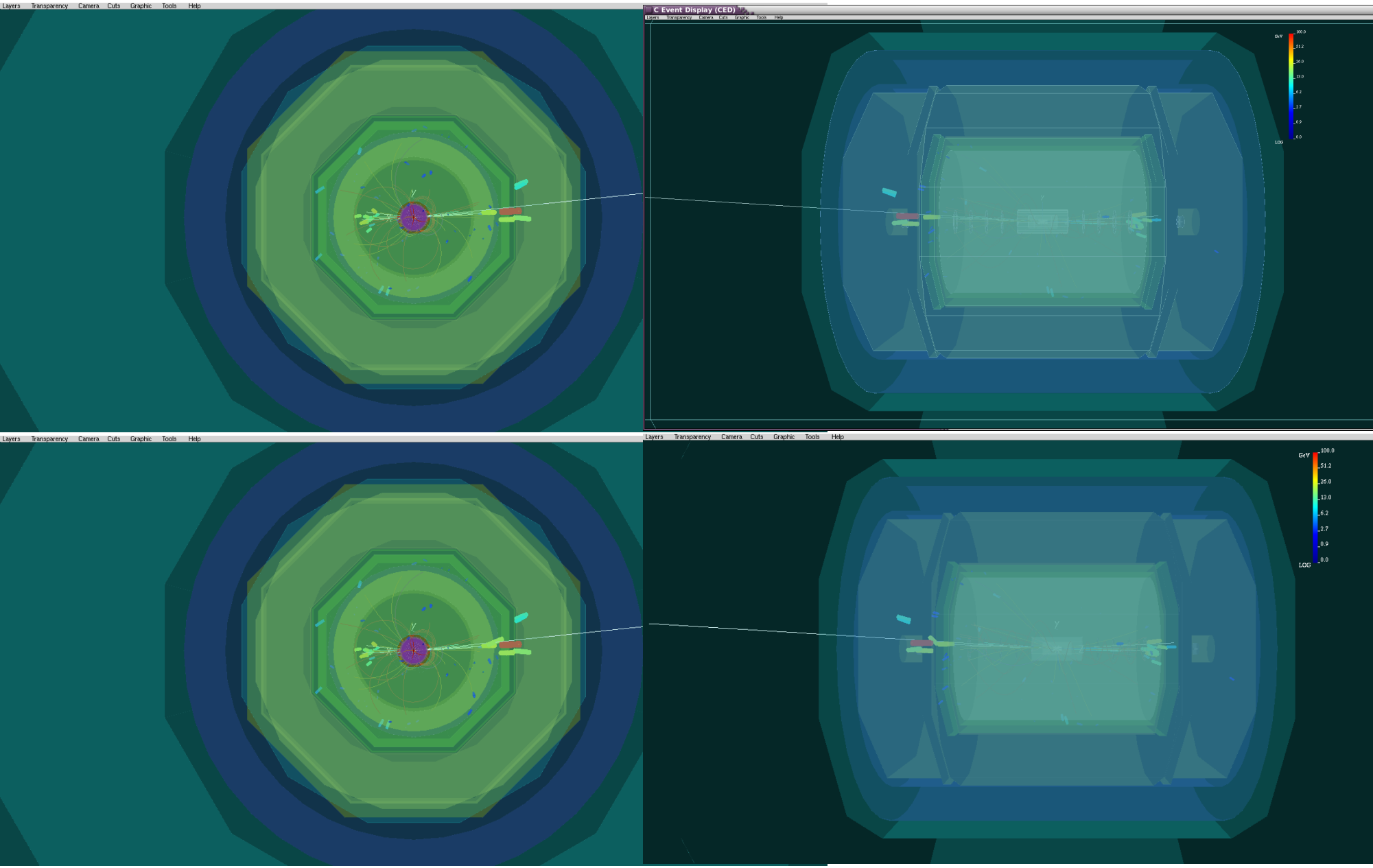
Event 0 (Same)


Layers Transparency Camera Cuts Graphic Tools Help
GeV
100.0
51.2
26.0
13.0
6.2
2.7
0.9
0.0
LOG

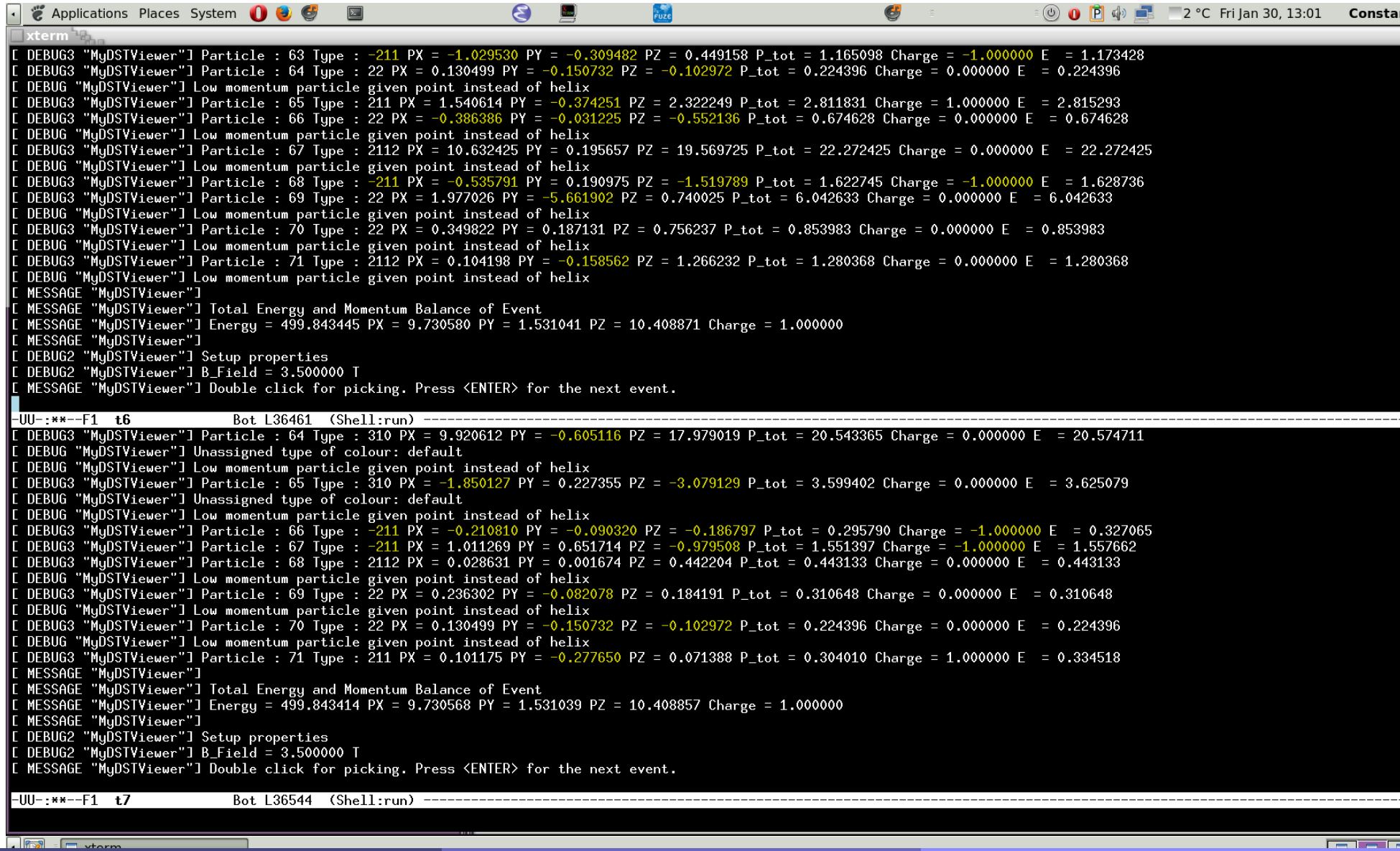
Event 0 (Same)


Applications Places System
2 °C Fri Jan 30, 13:00
xterm
[DEBUG3 "MyDSTViewer"] Particle : 81 Type : -211 PX = -8.905301 PY = 15.492162 PZ = 13.206289 P_tot = 22.219755 Charge = -1.000000 E = 22.220194
[DEBUG3 "MyDSTViewer"] Particle : 82 Type : 211 PX = -9.242599 PY = 2.443500 PZ = 7.596540 P_tot = 12.210805 Charge = 1.000000 E = 12.211603
[DEBUG3 "MyDSTViewer"] Particle : 83 Type : 2112 PX = -0.303207 PY = -0.530821 PZ = -0.224371 P_tot = 0.651190 Charge = 0.000000 E = 0.651190
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 84 Type : 211 PX = -7.587360 PY = 1.368268 PZ = 3.890668 P_tot = 8.635826 Charge = 1.000000 E = 8.636953
[DEBUG3 "MyDSTViewer"] Particle : 85 Type : 22 PX = -0.368959 PY = 0.390451 PZ = 0.410197 P_tot = 0.675903 Charge = 0.000000 E = 0.675903
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 86 Type : 22 PX = -0.521098 PY = 0.262364 PZ = 0.207729 P_tot = 0.619297 Charge = 0.000000 E = 0.619297
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 87 Type : 22 PX = -1.752102 PY = 0.659625 PZ = 0.500739 P_tot = 1.937965 Charge = 0.000000 E = 1.937965
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 88 Type : -211 PX = 1.605692 PY = 0.478037 PZ = 0.351499 P_tot = 1.711817 Charge = -1.000000 E = 1.717497
[MESSAGE "MyDSTViewer"]
[MESSAGE "MyDSTViewer"] Total Energy and Momentum Balance of Event
[MESSAGE "MyDSTViewer"] Energy = 449.246460 PX = -14.050467 PY = 5.846439 PZ = 59.123272 Charge = -3.000000
[MESSAGE "MyDSTViewer"]
[DEBUG2 "MyDSTViewer"] Setup properties
[DEBUG2 "MyDSTViewer"] B_Field = 3.500000 T
INFO:CED: connected to CED
[MESSAGE "MyDSTViewer"] Double click for picking. Press <ENTER> for the next event.
CED: Accepted connection from localhost
INFO: new client - socketID: 8
-UU-:**--F1 t6 Bot L36325 (Shell:run)
[DEBUG3 "MyDSTViewer"] Particle : 81 Type : -211 PX = 0.098722 PY = -0.755973 PZ = 0.259964 P_tot = 0.805495 Charge = -1.000000 E = 0.817497
[DEBUG3 "MyDSTViewer"] Particle : 82 Type : 211 PX = 0.472929 PY = 0.153288 PZ = -0.180896 P_tot = 0.529039 Charge = 1.000000 E = 0.547140
[DEBUG3 "MyDSTViewer"] Particle : 83 Type : 2112 PX = 0.026042 PY = -0.420242 PZ = 0.412409 P_tot = 0.589374 Charge = 0.000000 E = 0.589374
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 84 Type : 211 PX = -0.253628 PY = 0.493054 PZ = 0.409676 P_tot = 0.689394 Charge = 1.000000 E = 0.703380
[DEBUG3 "MyDSTViewer"] Particle : 85 Type : 22 PX = -0.324991 PY = 0.335274 PZ = 0.241801 P_tot = 0.525828 Charge = 0.000000 E = 0.525828
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 86 Type : 22 PX = -3.403287 PY = 0.640492 PZ = 2.166717 P_tot = 4.085004 Charge = 0.000000 E = 4.085004
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 87 Type : -211 PX = -1.878942 PY = 0.458797 PZ = 1.637429 P_tot = 2.534184 Charge = -1.000000 E = 2.538025
[DEBUG3 "MyDSTViewer"] Particle : 88 Type : 22 PX = 0.057986 PY = 0.259758 PZ = 0.116865 P_tot = 0.290679 Charge = 0.000000 E = 0.290679
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[MESSAGE "MyDSTViewer"]
[MESSAGE "MyDSTViewer"] Total Energy and Momentum Balance of Event
[MESSAGE "MyDSTViewer"] Energy = 449.246399 PX = -14.050469 PY = 5.846445 PZ = 59.123272 Charge = -3.000000
[MESSAGE "MyDSTViewer"]
[DEBUG2 "MyDSTViewer"] Setup properties
[DEBUG2 "MyDSTViewer"] B_Field = 3.500000 T
INFO:CED: connected to CED
[MESSAGE "MyDSTViewer"] Double click for picking. Press <ENTER> for the next event.
CED: Accepted connection from localhost
INFO: new client - socketID: 8
-UU-:**--F1 t7 Bot L36408 (Shell:run)

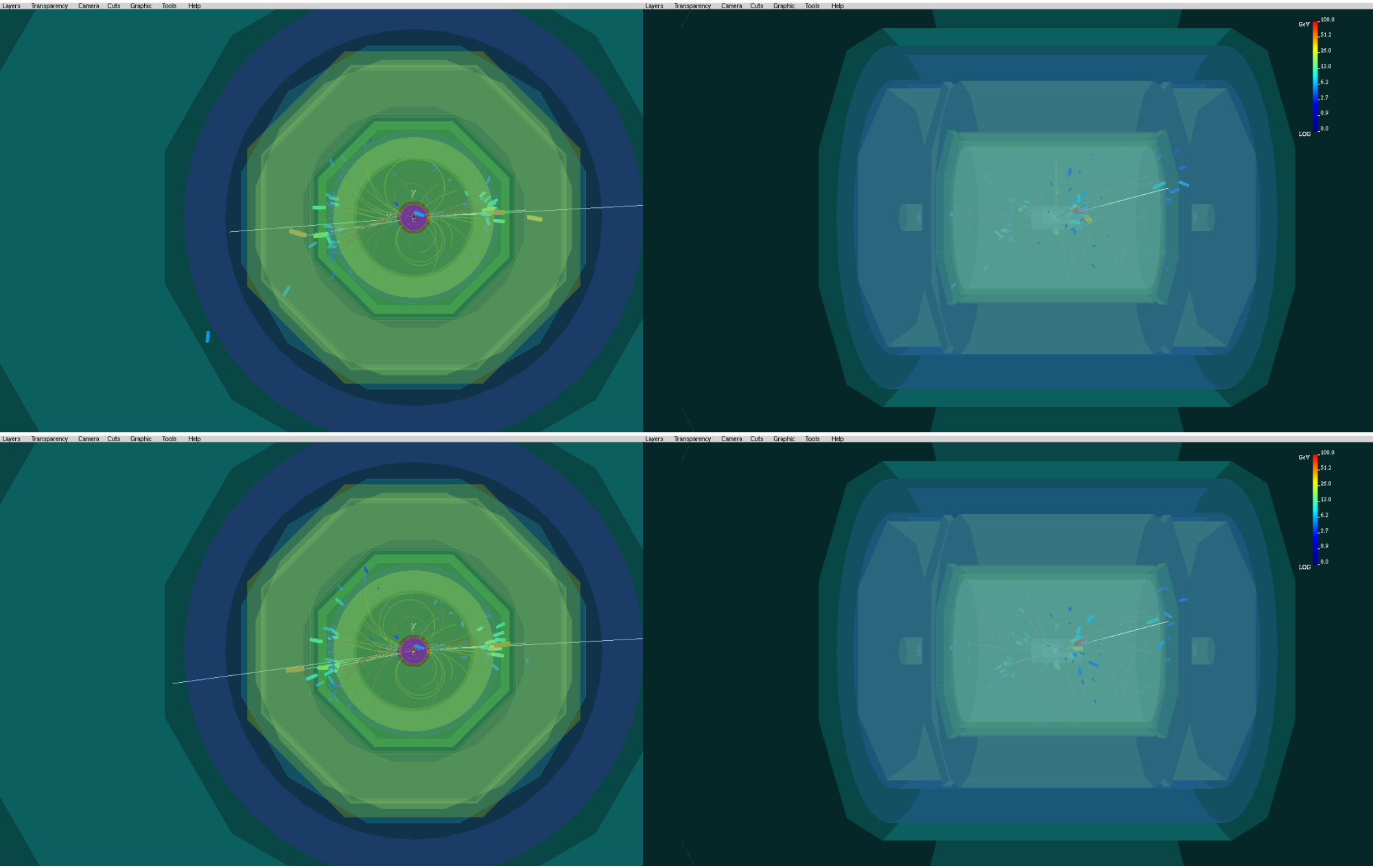
Event 1 (Same)


Layers Transparency Camera Cuts Graphic Tools Help
C Event Display (CED)
GeV
LOG

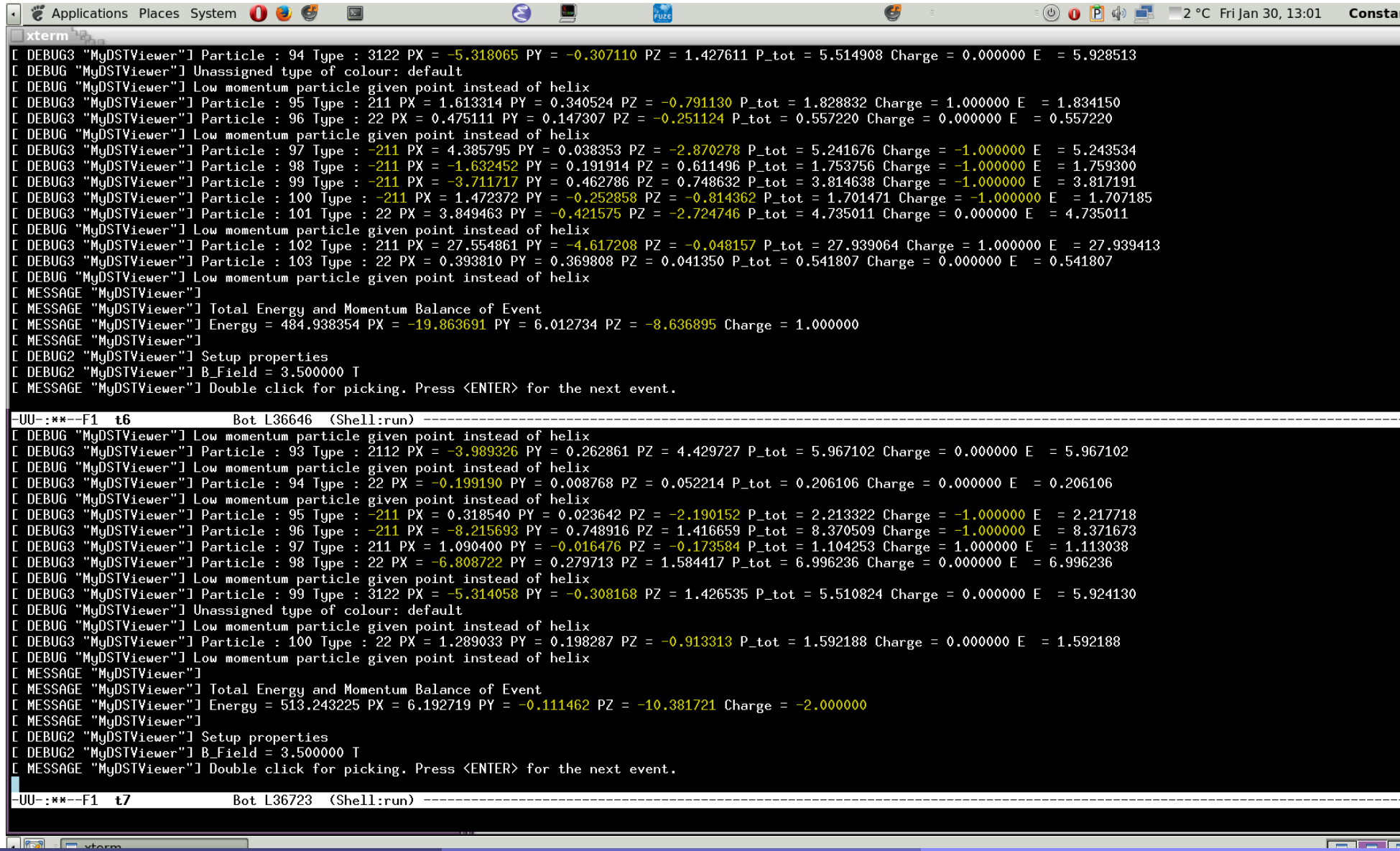
Event 1 (Same)


Applications Places System
2 °C Fri Jan 30, 13:01
xterm
[DEBUG3 "MyDSTViewer"] Particle : 63 Type : -211 PX = -1.029530 PY = -0.309482 PZ = 0.449158 P_tot = 1.165098 Charge = -1.000000 E = 1.173428
[DEBUG3 "MyDSTViewer"] Particle : 64 Type : 22 PX = 0.130499 PY = -0.150732 PZ = -0.102972 P_tot = 0.224396 Charge = 0.000000 E = 0.224396
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 65 Type : 211 PX = 1.540614 PY = -0.374251 PZ = 2.322249 P_tot = 2.811831 Charge = 1.000000 E = 2.815293
[DEBUG3 "MyDSTViewer"] Particle : 66 Type : 22 PX = -0.386386 PY = -0.031225 PZ = -0.552136 P_tot = 0.674628 Charge = 0.000000 E = 0.674628
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 67 Type : 2112 PX = 10.632425 PY = 0.195657 PZ = 19.569725 P_tot = 22.272425 Charge = 0.000000 E = 22.272425
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 68 Type : -211 PX = -0.535791 PY = 0.190975 PZ = -1.519789 P_tot = 1.622745 Charge = -1.000000 E = 1.628736
[DEBUG3 "MyDSTViewer"] Particle : 69 Type : 22 PX = 1.977026 PY = -5.661902 PZ = 0.740025 P_tot = 6.042633 Charge = 0.000000 E = 6.042633
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 70 Type : 22 PX = 0.349822 PY = 0.187131 PZ = 0.756237 P_tot = 0.853983 Charge = 0.000000 E = 0.853983
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 71 Type : 2112 PX = 0.104198 PY = -0.158562 PZ = 1.266232 P_tot = 1.280368 Charge = 0.000000 E = 1.280368
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[MESSAGE "MyDSTViewer"]
[MESSAGE "MyDSTViewer"] Total Energy and Momentum Balance of Event
[MESSAGE "MyDSTViewer"] Energy = 499.843445 PX = 9.730580 PY = 1.531041 PZ = 10.408871 Charge = 1.000000
[MESSAGE "MyDSTViewer"]
[DEBUG2 "MyDSTViewer"] Setup properties
[DEBUG2 "MyDSTViewer"] B_Field = 3.500000 T
[MESSAGE "MyDSTViewer"] Double click for picking. Press <ENTER> for the next event.
-UU-:**--F1 t6 Bot L36461 (Shell:run)
[DEBUG3 "MyDSTViewer"] Particle : 64 Type : 310 PX = 9.920612 PY = -0.605116 PZ = 17.979019 P_tot = 20.543365 Charge = 0.000000 E = 20.574711
[DEBUG "MyDSTViewer"] Unassigned type of colour: default
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 65 Type : 310 PX = -1.850127 PY = 0.227355 PZ = -3.079129 P_tot = 3.599402 Charge = 0.000000 E = 3.625079
[DEBUG "MyDSTViewer"] Unassigned type of colour: default
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 66 Type : -211 PX = -0.210810 PY = -0.090320 PZ = -0.186797 P_tot = 0.295790 Charge = -1.000000 E = 0.327065
[DEBUG3 "MyDSTViewer"] Particle : 67 Type : -211 PX = 1.011269 PY = 0.651714 PZ = -0.979508 P_tot = 1.551397 Charge = -1.000000 E = 1.557662
[DEBUG3 "MyDSTViewer"] Particle : 68 Type : 2112 PX = 0.028631 PY = 0.001674 PZ = 0.442204 P_tot = 0.443133 Charge = 0.000000 E = 0.443133
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 69 Type : 22 PX = 0.236302 PY = -0.082078 PZ = 0.184191 P_tot = 0.310648 Charge = 0.000000 E = 0.310648
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 70 Type : 22 PX = 0.130499 PY = -0.150732 PZ = -0.102972 P_tot = 0.224396 Charge = 0.000000 E = 0.224396
[DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[DEBUG3 "MyDSTViewer"] Particle : 71 Type : 211 PX = 0.101175 PY = -0.277650 PZ = 0.071388 P_tot = 0.304010 Charge = 1.000000 E = 0.334518
[MESSAGE "MyDSTViewer"]
[MESSAGE "MyDSTViewer"] Total Energy and Momentum Balance of Event
[MESSAGE "MyDSTViewer"] Energy = 499.843414 PX = 9.730568 PY = 1.531039 PZ = 10.408857 Charge = 1.000000
[MESSAGE "MyDSTViewer"]
[DEBUG2 "MyDSTViewer"] Setup properties
[DEBUG2 "MyDSTViewer"] B_Field = 3.500000 T
[MESSAGE "MyDSTViewer"] Double click for picking. Press <ENTER> for the next event.
-UU-:**--F1 t7 Bot L36544 (Shell:run)

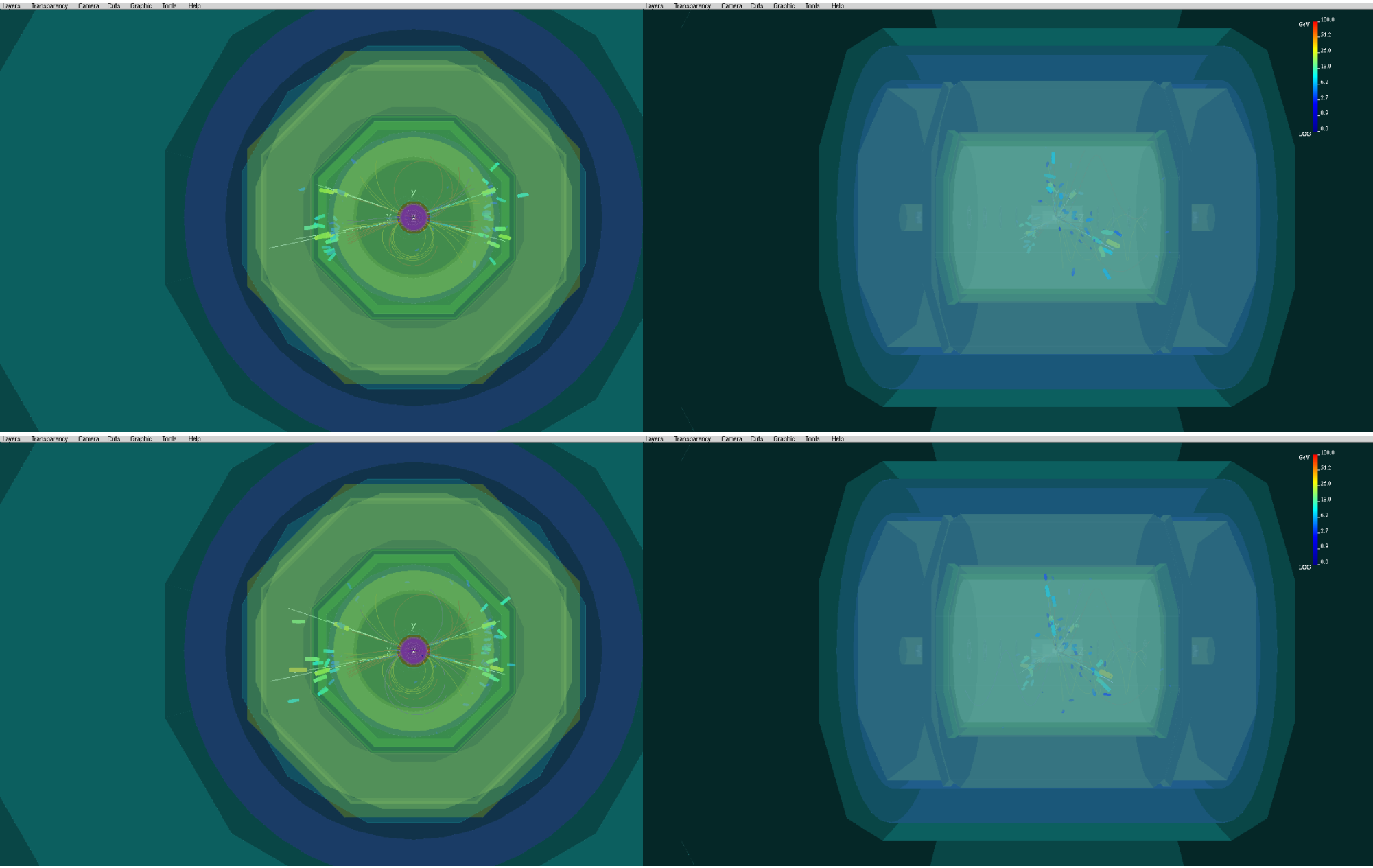
Event 2 (Some Differences)



Event 2 (Some Differences)



Event 3 (Some Differences)



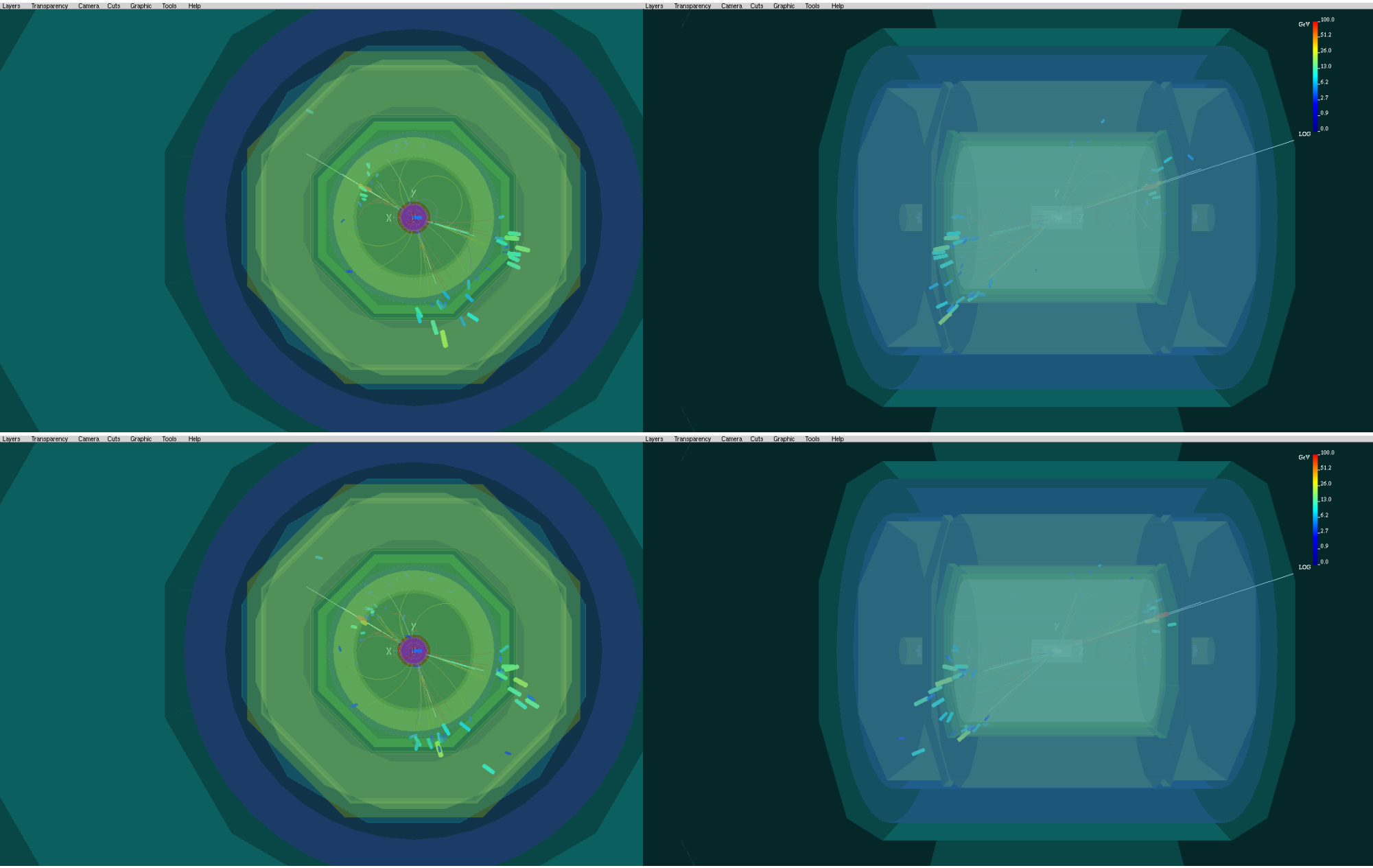
Event 3 (Some Differences)

```
[ DEBUG3 "MyDSTViewer"] Particle : 73 Type : 22 PX = -0.219979 PY = -0.035954 PZ = 0.075650 P_tot = 0.235385 Charge = 0.000000 E  = 0.235385
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 74 Type : 22 PX = -4.282350 PY = 0.232554 PZ = 0.459102 P_tot = 4.313163 Charge = 0.000000 E  = 4.313163
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 75 Type : 211 PX = 23.572672 PY = 8.253138 PZ = 5.046690 P_tot = 25.480467 Charge = 1.000000 E  = 25.480850
[ DEBUG3 "MyDSTViewer"] Particle : 76 Type : 22 PX = -2.262214 PY = 0.665720 PZ = -0.147870 P_tot = 2.362766 Charge = 0.000000 E  = 2.362766
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 77 Type : 2112 PX = -3.718602 PY = -0.513294 PZ = 1.195971 P_tot = 3.939774 Charge = 0.000000 E  = 3.939774
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 78 Type : 22 PX = -1.135415 PY = 0.333790 PZ = -0.103604 P_tot = 1.187988 Charge = 0.000000 E  = 1.187988
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 79 Type : 22 PX = -0.699964 PY = -0.110321 PZ = 0.386969 P_tot = 0.807382 Charge = 0.000000 E  = 0.807382
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 80 Type : 2112 PX = 7.037475 PY = -0.286567 PZ = -2.498595 P_tot = 7.473363 Charge = 0.000000 E  = 7.473363
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ MESSAGE "MyDSTViewer"]
[ MESSAGE "MyDSTViewer"] Total Energy and Momentum Balance of Event
[ MESSAGE "MyDSTViewer"] Energy = 491.427460 PX = 1.386178 PY = 0.315689 PZ = 9.863156 Charge = 1.000000
[ MESSAGE "MyDSTViewer"]
[ DEBUG2 "MyDSTViewer"] Setup properties
[ DEBUG2 "MyDSTViewer"] B_Field = 3.500000 T
[ MESSAGE "MyDSTViewer"] Double click for picking. Press <ENTER> for the next event.

-UU-:**--F1  t6           Bot L36793   (Shell:run) ----------
[ DEBUG3 "MyDSTViewer"] Particle : 72 Type : 22 PX = -0.071962 PY = 0.024211 PZ = 0.144503 P_tot = 0.163236 Charge = 0.000000 E  = 0.163236
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 73 Type : -211 PX = -9.962713 PY = 3.502921 PZ = -0.431132 P_tot = 10.569389 Charge = -1.000000 E  = 10.570311
[ DEBUG3 "MyDSTViewer"] Particle : 74 Type : 22 PX = 3.052394 PY = 1.082417 PZ = 0.275604 P_tot = 3.250338 Charge = 0.000000 E  = 3.250338
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 75 Type : -11 PX = 0.730204 PY = -0.048698 PZ = -0.221126 P_tot = 0.764504 Charge = 1.000000 E  = 0.777140
[ DEBUG3 "MyDSTViewer"] Particle : 76 Type : 211 PX = 4.968134 PY = -0.683864 PZ = -1.881588 P_tot = 5.356342 Charge = 1.000000 E  = 5.358160
[ DEBUG3 "MyDSTViewer"] Particle : 77 Type : 22 PX = -0.103293 PY = -0.376919 PZ = -0.261445 P_tot = 0.470203 Charge = 0.000000 E  = 0.470203
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 78 Type : 211 PX = 5.441435 PY = -0.959279 PZ = -1.772543 P_tot = 5.802701 Charge = 1.000000 E  = 5.804380
[ DEBUG3 "MyDSTViewer"] Particle : 79 Type : -211 PX = 2.470003 PY = 0.757657 PZ = 0.448378 P_tot = 2.622213 Charge = -1.000000 E  = 2.625925
[ DEBUG3 "MyDSTViewer"] Particle : 80 Type : 22 PX = 2.907811 PY = 1.021460 PZ = 0.350173 P_tot = 3.101833 Charge = 0.000000 E  = 3.101833
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 81 Type : 22 PX = -2.816000 PY = 0.229154 PZ = 0.221535 P_tot = 2.833981 Charge = 0.000000 E  = 2.833981
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ MESSAGE "MyDSTViewer"]
[ MESSAGE "MyDSTViewer"] Total Energy and Momentum Balance of Event
[ MESSAGE "MyDSTViewer"] Energy = 483.851715 PX = -4.611293 PY = 0.700006 PZ = 11.347616 Charge = 2.000000
[ MESSAGE "MyDSTViewer"]
[ DEBUG2 "MyDSTViewer"] Setup properties
[ DEBUG2 "MyDSTViewer"] B_Field = 3.500000 T
[ MESSAGE "MyDSTViewer"] Double click for picking. Press <ENTER> for the next event.

-UU-:**--F1  t7           Bot L36873   (Shell:run) ----------
```

Event 4 (Some Differences)



Event 4 (Some Differences)

```
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 56 Type : 22 PX = -0.660311 PY = -1.828372 PZ = -1.976964 P_tot = 2.772606 Charge = 0.000000 E  = 2.772606
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 57 Type : 2112 PX = -0.173058 PY = -0.033530 PZ = -0.250609 P_tot = 0.306395 Charge = 0.000000 E  = 0.306395
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 58 Type : 22 PX = 0.034061 PY = 0.257718 PZ = 0.113766 P_tot = 0.283763 Charge = 0.000000 E  = 0.283763
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 59 Type : 211 PX = -0.659568 PY = -4.051832 PZ = -6.196676 P_tot = 7.433113 Charge = 1.000000 E  = 7.434423
[ DEBUG3 "MyDSTViewer"] Particle : 60 Type : -211 PX = 0.908488 PY = 0.872555 PZ = 0.427363 P_tot = 1.330166 Charge = -1.000000 E  = 1.337468
[ DEBUG3 "MyDSTViewer"] Particle : 61 Type : 211 PX = -1.688277 PY = -4.194442 PZ = -6.592832 P_tot = 7.994314 Charge = 1.000000 E  = 7.995533
[ DEBUG3 "MyDSTViewer"] Particle : 62 Type : -211 PX = 0.113933 PY = -0.793939 PZ = -0.932738 P_tot = 1.230171 Charge = -1.000000 E  = 1.238063
[ DEBUG3 "MyDSTViewer"] Particle : 63 Type : 22 PX = -0.043185 PY = -0.307117 PZ = -0.313128 P_tot = 0.440721 Charge = 0.000000 E  = 0.440721
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 64 Type : 2112 PX = 0.065277 PY = 0.003811 PZ = 1.018961 P_tot = 1.021056 Charge = 0.000000 E  = 1.021057
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ MESSAGE "MyDSTViewer"]
[ MESSAGE "MyDSTViewer"] Total Energy and Momentum Balance of Event
[ MESSAGE "MyDSTViewer"] Energy = 469.750763 PX = -1.963846 PY = -10.831343 PZ = 12.248179 Charge = 0.000000
[ MESSAGE "MyDSTViewer"]
[ DEBUG2 "MyDSTViewer"] Setup properties
[ DEBUG2 "MyDSTViewer"] B_Field = 3.500000 T
[ MESSAGE "MyDSTViewer"] Double click for picking. Press <ENTER> for the next event.

-UU-:**--F1  t6            Bot L36911  (Shell:run) ----------------------------------------------------------------------------------------------------
[ DEBUG3 "MyDSTViewer"] Particle : 61 Type : -211 PX = -10.080924 PY = -2.901120 PZ = -11.373954 P_tot = 15.472826 Charge = -1.000000 E  = 15.473455
[ DEBUG3 "MyDSTViewer"] Particle : 62 Type : 22 PX = 0.301414 PY = 1.291520 PZ = 0.271147 P_tot = 1.353660 Charge = 0.000000 E  = 1.353660
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 63 Type : 22 PX = -8.490582 PY = -2.417883 PZ = -9.663867 P_tot = 13.089174 Charge = 0.000000 E  = 13.089175
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 64 Type : 211 PX = -0.380224 PY = 0.676925 PZ = 1.097979 P_tot = 1.344751 Charge = 1.000000 E  = 1.351975
[ DEBUG3 "MyDSTViewer"] Particle : 65 Type : 211 PX = -0.031340 PY = 0.183572 PZ = -0.182669 P_tot = 0.260861 Charge = 1.000000 E  = 0.295852
[ DEBUG3 "MyDSTViewer"] Particle : 66 Type : 22 PX = -3.140560 PY = -0.792623 PZ = -3.011551 P_tot = 4.422760 Charge = 0.000000 E  = 4.422760
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 67 Type : 2112 PX = 1.015012 PY = 1.399377 PZ = 0.576219 P_tot = 1.822233 Charge = 0.000000 E  = 1.822233
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 68 Type : 211 PX = -1.216624 PY = -5.026414 PZ = -5.737207 P_tot = 7.724025 Charge = 1.000000 E  = 7.725286
[ DEBUG3 "MyDSTViewer"] Particle : 69 Type : 22 PX = -1.193770 PY = -0.260345 PZ = -1.314567 P_tot = 1.794701 Charge = 0.000000 E  = 1.794701
[ DEBUG "MyDSTViewer"] Low momentum particle given point instead of helix
[ DEBUG3 "MyDSTViewer"] Particle : 70 Type : -211 PX = -12.298915 PY = -3.572956 PZ = -14.886720 P_tot = 19.637814 Charge = -1.000000 E  = 19.638309
[ MESSAGE "MyDSTViewer"]
[ MESSAGE "MyDSTViewer"] Total Energy and Momentum Balance of Event
[ MESSAGE "MyDSTViewer"] Energy = 475.366089 PX = -15.440767 PY = -17.675264 PZ = -6.678852 Charge = -1.000000
[ MESSAGE "MyDSTViewer"]
[ DEBUG2 "MyDSTViewer"] Setup properties
[ DEBUG2 "MyDSTViewer"] B_Field = 3.500000 T
[ MESSAGE "MyDSTViewer"] Double click for picking. Press <ENTER> for the next event.

-UU-:**--F1  t7            Bot L37003  (Shell:run) ----------------------------------------------------------------------------------------------------
```