

Output of EplC (ed collision) into HepMC3 format

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18/10/2021

TASK

- To store the output from the EplC Generator (ed collision) into HepMC3 format.

Previously

```
//
// In this example we will place the following event into HepMC "by hand"
//
//      name status pdg_id parent Px      Py      Pz      Energy      Mass
//  1  !p+!    3    2212    0,0    0.000    0.000 7000.000 7000.000    0.938
//  3  !p+!    3    2212    0,0    0.000    0.000-7000.000 7000.000    0.938
//=====
//  2  !d!     3      1    1,1    0.750   -1.569   32.191   32.238    0.000
//  4  !u~!    3     -2    2,2   -3.047  -19.000  -54.629   57.920    0.000
//  5  !W-!    3    -24    1,2    1.517   -20.68  -20.605   85.925   80.799
//  6  !gamma!  1     22    1,2   -3.813    0.113   -1.833    4.233    0.000
//  7  !d!     1      1    5,5   -2.445   28.816    6.082   29.552    0.010
//  8  !u~!    1     -2    5,5    3.962  -49.498  -26.687   56.373    0.006
// now we build the graph, which will looks like
//
//      p7
//      /
// p1 ---v1---p3      p5---v4
//      \_v3_/      \
//      /      \      p8
// v2---p4      \
// /      \      p6
// p2
//
//      #
//      #
//      #
//      #
//      #
//      #
//      #
```

```
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//      \_v3_/      \
//      /      \      p8
// v2---p4      \
// /      \      p6
// p3
//
//      #
//      #
//      #
//      #
//      #
//      #
//      #
```

Updated

```
GenVertexPtr v1 = std::make_shared<GenVertex>();
v1->add_particle_in(p1);
v1->add_particle_out(p2);
evt.add_vertex(v1);
```

```
// Set vertex status if needed
v1->set_status(4);
```

```
GenVertexPtr v2 = std::make_shared<GenVertex>();
v2->add_particle_in(p3);
v2->add_particle_out(p4);
evt.add_vertex(v2);
```

```
GenVertexPtr v3 = std::make_shared<GenVertex>();
v3->add_particle_in(p2);
v3->add_particle_in(p4);
evt.add_vertex(v3);
```

```
GenParticlePtr p5 = std::make_shared<GenParticle>( FourVector(-3.813, 0.113, -1.833, 4.233), 22, 1 );
GenParticlePtr p6 = std::make_shared<GenParticle>( FourVector( 1.517,-20.68, -20.605,85.925), -24, 3 );
```

```
v3->add_particle_out(p5);
v3->add_particle_out(p6);
```

```
GenVertexPtr v4 = std::make_shared<GenVertex>();
v4->add_particle_in(p6);
evt.add_vertex(v4);
```

```
GenParticlePtr p7 = std::make_shared<GenParticle>( FourVector(-2.445, 28.816, 6.082,29.552), 1, 1 );
GenParticlePtr p8 = std::make_shared<GenParticle>( FourVector( 3.962,-49.498,-26.687,56.373), -2, 1 );
```

```
v4->add_particle_out(p7);
v4->add_particle_out(p8);
```

http://hepmc.web.cern.ch/hepmc/basic_tree_8cc-example.html