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Subject: HepMC

Posted by [Oleg Kiselev](#) on Tue, 05 Apr 2005 09:32:45 GMT

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Dear colleagues,

does someone have a description of HepMC interface.

We need to make and read an ASCII file generated by the external event generators and we need to know the formate of ASCII file.

Where to find it?

Regards, Oleg Kiselev.

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Subject: Re: HepMC

Posted by [Kilian Schwarz](#) on Wed, 06 Apr 2005 13:58:08 GMT

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Dear Oleg,

HepMC has been installed for gcc323 at GSI at the location

/usr/local/pub/debian3.0/gcc323-00/sim/HepMC\_Version1.25

with examples at

/usr/local/pub/debian3.0/gcc323-00/sim/HepMC\_Version1.25/examples

See

[http://www.gsi.de/informationen/wti/dvee/software/simulations\\_sw.html](http://www.gsi.de/informationen/wti/dvee/software/simulations_sw.html)

a description of the generated ASCII files can be found at

[http://mdobbs.home.cern.ch/mdobbs/HepMC/html\\_reference/IO\\_\\_Ascii\\_8cxx-source.html](http://mdobbs.home.cern.ch/mdobbs/HepMC/html_reference/IO__Ascii_8cxx-source.html)

it stores

ASCII-File output-extract

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HepMC::IO\_Ascii-START\_EVENT\_LISTING

E 0 -1.0000000000000000e+00 -1.0000000000000000e+00 -1.0000000000000000e+00 0 0  
164 0

0

V -1 0 0 0 0 0 1 2 0

P 1 2212 0 0 6.9999999371178146e+03 7.0000000000000000e+03 3 0 0 -1 0

P 3 1 1.8207711891212544e-01 1.8064803338823676e-01 1.0686638074933117e+02

1.0686668854348508e+02 3 0 0 -3 0

...

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According to my understanding, the

(rough) explanation is:

when

'E' = EVENT it stores:

- event\_number,
- event\_scale [energy],
- alphaQCD,
- alphaQED,
- signal\_process\_id,

```
        signal_process_vertex,  
        signal_process_vertex->barcode,  
        vertices_size,  
        weights  
when  
'V' = VERTICES it stores  
vertex->barcode  
vertex->id  
    position(x)  
    position(y)  
    position(z)  
    time  
    particles_out_size  
    weights  
when  
'P' = PARTICLE it stores  
particle->barcode  
    pdg_id  
    momentum.px  
    momentum.py  
    momentum.pz  
    momentum.e  
    status  
    polarization.theta  
    polarization.phi  
    end_vertex
```

Cheers,

Kilian