
Subject: Problems with GEANE and trackbase

Posted by [Sebastian Neubert](#) on Fri, 07 Mar 2008 01:40:50 GMT

[View Forum Message](#) <> [Reply to Message](#)

Hi!

After some hours of fruitless debugging I came back to the following problem:

I have a script (look at recotasks/demo/geaneDemo.C) with these lines:

```
// Setup a trackrep which uses geane
CbmGeanePro* gePro=new CbmGeanePro();

TVector3 pos(0.1,0.1,0.1);
TVector3 mom(0.1,0.1,1.);
TVector3 poserr=TVector3(0.1,0.1,0.1);
TVector3 momerr=0.2*mom;

DetPlane initplane(TVector3(pos),TVector3(1.,0.,0.),TVector3(0.,1.,0.));
double q=-1;

CbmTrackParP par(pos,mom,poserr,momerr,q,
    initplane.getO(),initplane.getU(),initplane.getV());
par.Print();
```

Note that $p_x = p_y$!

These lines lead to the following output:

```
=====
Position : (0.1, 0.1, 0.1)
Slopes : dx/dz = 0.0008, dy/dz = 0.0004
q/p = -0.99
+++++
```

Note that $dx/dz \neq dy/dz$. Something is going really wrong!

When I tried to track the problem I stumbled over the following lines. What the hack is meant with y-z-plane???

```
// Transform error matrix
// FROM MASTER          VARIABLES (px, py,pz, x, y, z)
// TO   SD (transverse or local system)
//          VARIABLES (1/p, v', w', v, w)
//
// Method: the MARS system is considered as a detector system SD1 with
// y-z as the detector plane. Hence eq (79) of the
```

```
//      report CMS 2006/001 is used to go from canonical to SD1 variables.  
//      Then, the SD1 to SD routine is used.  
//      In this way the track length variation and the magnetic field  
//      effects are correctly taken into account.  
//  
//      Authors: A. Rotondi and A. Fontana (July 2007)
```

Another issue: trackbase uses the magnetic field. It get's this from the CbmRun singleton object. This construct creates nasty dependencies which make it unnecessarily hard to write tests for the code. It was always advertized that PandaRoot is getting rid of the cross-dependencies.

Best Regards, Sebastian.

PS: Please allow me the comment, that I am quite disappointed, that after one year this is still not in order! And that I have to dig into other people's code while at the same time apparently nobody from the geane community ever even had a look at GeaneTrackRep. It is YOUR responsibility that this works!

I needed to say that. Now let's go and get the damn tracking running!
