
Subject: Re: Problems with integer FairTrackPar charge
Posted by [Mohammad Al-Turany](#) on Mon, 21 Sep 2009 12:46:11 GMT
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Hi,

I manage to reproduce the crash on Debian Etch 32, and it is in the FairGeaneUtil:

Quote:Program received signal SIGFPE, Arithmetic exception.
[Switching to Thread -1229228352 (LWP 18037)]
0xb3fe5bc1 in FairGeaneUtil::FromSDToMars (this=0xbfc1e124, PC=0xbfc1e0d8,
RC=0xbfc1dfd0, H=0xbfc1e0f0, CH=0, SP1=1, DJ1=0xbfc1e6a0, DK1=0xbfc1e6b8,
PD=0xbfc1e108, RD=@0xbfc1deb0)
at /misc/turany/svn/pandaroot/trackbase/FairGeaneUtil.cxx:1485
1485 M65[0][0] = - SPU*PM2*PC[1]/(CH*PVW);

So as you can see it is a division by zero! and this comes from the CH = 0 which comes in this case from FairTrackParP:

```
fq= int (P * fQp);
```

As Stefano suggested replacing this with

```
fq = (int)TMath::Sign(1.0, fQp)
```

Solves the problem. I tried to print out the values for these two functions using 32 and 64 bit machines:

on 32-bit:

```
Quote:FairTrackParP::FairTrackParP fq = (int)TMath::Sign(1.0, fQp); P =2.046 fQp =  
-0.4887 fq = -1  
FairTrackParP::FairTrackParP fq= int (P * fQp); P =2.046 fQp = -0.4887 fq = 0
```

and the same code on 64 bit:

```
Quote: FairTrackParP::FairTrackParP fq = (int)TMath::Sign(1.0, fQp); P =1.957 fQp = -0.5109  
fq = -1  
FairTrackParP::FairTrackParP fq= int (P * fQp); P =1.957 fQp = -0.5109 fq = -1
```

which explain why I could not reproduce this problem before!

Anyway, the change suggested by Stefano is now in SVN (-r 6568)

regards

Mohammad
