Subject: Re: Problems with integer FairTrackPar charge
Posted by Mohammad Al-Turany on Mon, 21 Sep 2009 12:46:11 GMT
View Forum Message <> Reply to Message

Hi,

I manage to repruduce 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 mashines:

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