Subject: Re: Urgent fixes in FairGeanePro.cxx needed
Posted by Felix Boehmer on Tue, 31 Mar 2009 14:16:55 GMT
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Hi all,

let me show you an example:

Quote:*** PndTpcSPHit positions ***
(16, -3.5, -5.6); (17, -3.8, -6); (18, -4.3, -6.3); (19, -4.9, -6.8); (20, -5.3, -7.1);
(21, -5.7, -7.4); (21, -5.9, -7.6); (22, -6.3, -7.8); (22, -6.5, -7.9);
(23, -6.7, -8.1); (23, -7, -8.3); (24, -7.5, -8.6); (25, -8.1, -9);
(26, -8.7, -9.4); (27, -9.3, -9.8); (27, -9.6, -10); (28, -9.9, -10);
(29, -11, -11); (29, -11, -11); (30, -12, -11); (31, -12, -11);
(31, -13, -12); (32, -13, -12); (33, -14, -12); (34, -15, -13);
(34, -15, -13); (34, -16, -13); (35, -16, -13); (36, -17, -14);
(36, -17, -14); (37, -18, -14); starting fit
Position : (5.2, -0.13, -1.9)
Slopes : dx/dz = -3.2e-17, dy/dz = 3.1e-17
q/p = 2.5
Propagate in flight direction

Error in ERTRAK : particle type 0 unknown in GEANT
sighandler for sig 8

This is the associated backtrace from the core dump:

Quote:#0 0xffffe410 in __kernel_vsyscall ()
#1 0xb6d72811 in raise () from /lib/tls/i686/cmov/libc.so.6
#2 0xb6d73fb9 in abort () from /lib/tls/i686/cmov/libc.so.6
#3 0xb31e67c4 in sighandler (sig=8) at
/afs/e18/panda/SIM/fboehmer/trunk/recotasks/KalmanTask.cxx:56
#4 <signal handler called>
#5 0xb2b1162d in FairGeanePro::Track2ToPoint (this=0xe106188, x1=@0xbfdcde28,
x2=@0xbfdcde04, w1=@0xbfdcdde0, Pfinal=@0xe106388,
Dist=@0xe106380, Length=@0xbfdcdd70) at
/afs/e18/panda/SIM/fboehmer/trunk/geane/FairGeanePro.cxx:762
#6 0xb2b14ca2 in FairGeanePro::FindPCA (this=0xe106188, pca=1, PDGCode=1000010020,
point=@0xbfdceb84, wire1=@0xbfdceb60,
wire2=@0xbfdceb3c, maxdistance=23.679142069207522, Rad=@0xe106378,
vpf=@0xe106388, vwi=@0xe1063ac, Di=@0xe106380, trklength=@0xe1063d0)
at /afs/e18/panda/SIM/fboehmer/trunk/geane/FairGeanePro.cxx:554
#7 0xb2b180f5 in FairGeanePro::Propagate (this=0xe106188, TStart=0xbfdcf18c,
TEnd=0xbfdced60, PDG=1000010020)
at /afs/e18/panda/SIM/fboehmer/trunk/geane/FairGeanePro.cxx:180
#8 0xb394482e in GeaneTrackRep::extrapolateToPoca (this=0x119f2268, pos=@0xbfdcfd0c,
poca=@0xbfdcfce8, dirInPoca=@0xbfdcfcc4)
at /afs/e18/panda/SIM/fboehmer/trunk/trackrep/GeaneTrackRep.cxx:272

Specifically, in frame 5:

Quote:#5 0xb2b1162d in FairGeanePro::Track2ToPoint (this=0xe106188, x1=@0xbfdcde28, x2=@0xbfdcde04, w1=@0xbfdcdde0, Pfinal=@0xe106388,
    Dist=@0xe106380, Length=@0xbfdcdd70) at /afs/e18/panda/SIM/fboehmer/trunk/geane/FairGeanePro.cxx:762
762   a= 1./(x2-x1).Mag();
(gdb) print x1
$4 = (class TVector3 &) @0xbfdcde28: {<TObject> = {_vptr.TObject = 0xb4ae6b88, fUniqueID = 0, fBits = 33554432, static fgDtorOnly = 0,
    static fgObjectStat = false, static fgIsA = 0x84367d8}, fX = 0, fY = 0, fZ = 0, static fgIsA = 0x88ba2b8}
(gdb) print x2
$5 = (class TVector3 &) @0xbfdcde04: {<TObject> = {_vptr.TObject = 0xb4ae6b88, fUniqueID = 0, fBits = 33554432, static fgDtorOnly = 0,
    static fgObjectStat = false, static fgIsA = 0x84367d8}, fX = 0, fY = 0, fZ = 0, static fgIsA = 0x88ba2b8

As you can see, at FairGeanePro.cxx:762 division by zero is performed, both x1 and x2 are zero in all coordinates. I don't know if this is associated with the error message directly above the crash concerning an unknown particle type. Looking at frame 6 of the backtrace, the pdg ID appears to be 1000010020, which is the one of the deuteron, I think.

So it looks like GEANE doesn't recognize the deuteron (as it probably doesn't have to) but does not treat the case of an unidentified particle correctly ...

Thanks for your effort and any replies in advance

Felix