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Subject: Geant 3 crashes on hadron events

Posted by [Dmitry Morozov](#) on Wed, 30 May 2007 07:35:09 GMT

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Hello, G3-G4-VMC experts!

I have the following problem running simulation. I throw particles on my detector and collect edep. When I use electromagnetic particles i get no problems at all. But if i use hadrons (neutrons, pions) Geant3 crashes at some event number... In Geant4 I don't have such a problem (the results are funny in g4, but at least it works ).

Here is the output of my sim script:

-----  
PSaid instance created... access via gSaid->f()

- RTDB container factory CbmBaseContFact  
- RTDB container factory CbmFieldContFact  
- RTDB container factory CbmPassiveContFact  
SetStoreTraj1  
-I CbmAsciiGenerator: Opening input file output2.evt

=====  
Info in <TGeoManager::TGeoManager>: Geometry CBMGeom, CBM geometry created  
Loading Geant3 libraries ...  
Loading Geant3 libraries ... finished  
CbmMCApplication::InitMC

MZSTOR. ZEBRA table base TAB(0) in /MZCC/ at adr 42186663 283B7A7 HEX

MZSTOR. Initialize Store 0 in /GCBANK/  
with Store/Table at absolute adrs 42209213 42186663  
HEX 2840FBD 283B7A7  
HEX 5662 0  
relative adrs 22114 0  
with 1 Str. in 2 Links in 5300 Low words in 4999970 words.  
This store has a fence of 16 words.

MZLOGL. Set Log Level 0 for store 0  
1\*\*\*\*\* GEANT Version 3.21/11 Released on 100298  
0\*\*\*\*\* Correction Cradle Version 0.1100

MZDIV. Initialize Division Constant in Store 0  
NW/NWMAX= 20004000000, MODE/KIND= 1 2  
Division 20 initialized.

MZLINK. Initialize Link Area /GCLINK/ for Store 0 NL/NS= 20 20

MZLINK. Initialize Link Area /GCSLNK/ for Store 0 NL/NS= 100 100  
-I- G3Config: Geant3 with TGeo has been created.  
Info in <TGeoManager::SetTopVolume>: Top volume is cave. Master volume is cave

Mixture Air Aeff=15.1708 Zeff=7.52797 rho=0.00125 radlen=28819.7 index=1  
 Element #0 : O Z= 8.00 A= 16.00 w= 0.229  
 Element #1 : N Z= 7.00 A= 14.01 w= 0.744  
 Element #2 : AR Z= 18.00 A= 39.95 w= 0.027  
 Mixture Polysterene Aeff=11.1591 Zeff=5.61287 rho=1.032 radlen=42.0434 index=2  
 Element #0 : H Z= 1.00 A= 1.01 w= 0.077  
 Element #1 : C Z= 6.00 A= 12.01 w= 0.923  
 Material W A=183.84 Z=74 rho=19.3 radlen=0.350706 index=3  
 Info in <TGeoManager::CheckGeometry>: Fixing runtime shapes...  
 Info in <TGeoManager::CheckGeometry>: ...Nothing to fix  
 Info in <TGeoManager::CloseGeometry>: Counting nodes...  
 Info in <TGeoManager::Voxelize>: Voxelizing...  
 Info in <TGeoManager::CloseGeometry>: Building cache...  
 Info in <TGeoManager::BuildCache>: --- Maximum geometry depth set to 100  
 Info in <TGeoManager::CloseGeometry>: 69 nodes/ 6 volume UID's in CBM geometry  
 Info in <TGeoManager::CloseGeometry>: -----modeler ready-----

-I- CbmMCApplication -> simulation RunID: 256747476

Calculating cross section tables, see gphysi.dat for more information

Cross section calculation concluded successfully

-I- CbmMCApplication:: Monte carlo Engine Initialisation  
 \*\*\*\* GTRIGI: IEVENT= 1 IDEVT= 1 Random Seeds = 4357 0  
 -I CbmAsciiGenerator: Event 0, vertex = (0,0,0) cm, multiplicity 4  
 -I CbmPrimaryGenerator: 4 primary tracks from vertex (0, 0, 0)  
 -I- U70Guard: 22 points registered in this event.  
 \*\*\*\* GTRIGI: IEVENT= 2 IDEVT= 2 Random Seeds = 4357 0  
 -I CbmAsciiGenerator: Event 1, vertex = (0,0,0) cm, multiplicity 7  
 -I CbmPrimaryGenerator: 7 primary tracks from vertex (0, 0, 0)  
 -I- U70Guard: 22 points registered in this event.  
 \*\*\*\* GTRIGI: IEVENT= 3 IDEVT= 3 Random Seeds = 4357 0  
 -I CbmAsciiGenerator: Event 2, vertex = (0,0,0) cm, multiplicity 5  
 -I CbmPrimaryGenerator: 5 primary tracks from vertex (0, 0, 0)  
 -I- U70Guard: 17 points registered in this event.

blah... blah... blah....

\*\*\*\* GTRIGI: IEVENT= 286 IDEVT= 286 Random Seeds = 4357 0  
 -I CbmAsciiGenerator: Event 287, vertex = (0,0,0) cm, multiplicity 3  
 -I CbmPrimaryGenerator: 3 primary tracks from vertex (0, 0, 0)

\*\*\* Break \*\*\* floating point exception  
 (no debugging symbols found)  
 Using host libthread\_db library "/lib/tls/libthread\_db.so.1".  
 Attaching to program: /proc/20265/exe, process 20265  
 (no debugging symbols found)...done.  
 (no debugging symbols found)...done.  
 (no debugging symbols found)...done.  
 (no debugging symbols found)...done.  
 (no debugging symbols found)...done.

(no debugging symbols found)...done.  
[Thread debugging using libthread\_db enabled]  
[New Thread -1218599296 (LWP 20265)]  
(no debugging symbols found)...done.  
(no debugging symbols found)...done.  
(no debugging symbols found)...done.  
(no debugging symbols found)...done.  
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(no debugging symbols found)...done.  
(no debugging symbols found)...done.  
(no debugging symbols found)...done.

0x0518f23e in \_\_waitpid\_nocancel () from /lib/tls/libc.so.6  
Thread 1 (Thread -1218599296 (LWP 20265)):  
#0 0x0518f23e in \_\_waitpid\_nocancel () from /lib/tls/libc.so.6  
#1 0x05123fa4 in do\_system () from /lib/tls/libc.so.6  
#2 0x05a72c3f in system () from /lib/tls/libpthread.so.0  
#3 0x007556fd in TUnixSystem::Exec ()  
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCore.so.5.14  
#4 0x00755b2d in TUnixSystem::StackTrace ()  
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCore.so.5.14  
#5 0x00753c23 in TUnixSystem::DispatchSignals ()  
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCore.so.5.14  
#6 0x00751d1b in SigHandler ()  
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCore.so.5.14  
#7 0x0075835f in sighandler ()  
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCore.so.5.14  
#8 <signal handler called>  
#9 g3thion\_ () at gtrak/gthion.F:71  
#10 0x0968d994 in g3track\_ () at gtrak/gtrack.F:264  
#11 0x097453fe in gutrak\_ () at TGeant3/TGeant3gu.cxx:555  
#12 0x0968e0ef in gtreveroot\_ () at gtrak/gtreveroot.F:171  
#13 0x0974542e in gutrev\_ () at TGeant3/TGeant3gu.cxx:575  
#14 0x0973335f in jumpt0\_ (iadr=0x4c369a) at minicern/jumptn.c:77  
#15 0x095d38d1 in g3trig\_ () at gbase/gtrig.F:65  
#16 0x0973db16 in TGeant3::Gtrig (this=0xb74dcfe0) at TGeant3/TGeant3.cxx:2925  
#17 0x09741f25 in TGeant3::ProcessEvent (this=0xb74dcfe0)  
    at TGeant3/TGeant3.cxx:5914  
#18 0x09741e86 in TGeant3::ProcessRun (this=0xb74dcfe0, nevent=2300)  
    at TGeant3/TGeant3.cxx:5884  
#19 0x0178bafb in CbmMCApplication::RunMC (this=0x9403630, nofEvents=2300)  
    at ../pandaroot/base/CbmMCApplication.cxx:228  
#20 0x0179d09a in CbmRunSim::Run (this=0x9320928, NStart=2300, NStop=0)  
    at ../pandaroot/base/CbmRunSim.cxx:129  
#21 0x017cb949 in G\_\_CbmDict\_774\_0\_7 (result7=0xbffecf50,  
    funcname=0x931b1d8 "\001", libp=0xbffe99a0, hash=0) at CbmDict.cxx:9482  
#22 0x00147d92 in Cint::G\_\_ExceptionWrapper ()  
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCint.so.5.14

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#23 0x001e2fdc in G__call_cppfunc ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCint.so.5.14
#24 0x001d1daf in G__interpret_func ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCint.so.5.14
#25 0x001c0b9a in G__getfunction ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCint.so.5.14
#26 0x00242652 in G__getstructmem ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCint.so.5.14
#27 0x0023c23c in G__getvariable ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCint.so.5.14
#28 0x001b7af7 in G__getitem ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCint.so.5.14
#29 0x001b677b in G__getexpr ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCint.so.5.14
#30 0x001fa0d8 in G__exec_function ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCint.so.5.14
#31 0x0020106c in G__exec_statement ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCint.so.5.14
#32 0x0019d94a in G__exec_tempfile_core ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCint.so.5.14
#33 0x0019db6a in G__exec_tempfile ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCint.so.5.14
#34 0x0020920c in G__process_cmd ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCint.so.5.14
#35 0x006c8e23 in TCint::ProcessLine ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCore.so.5.14
#36 0x006c8f84 in TCint::ProcessLineSynch ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCore.so.5.14
#37 0x00604588 in TApplication::ProcessFile ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCore.so.5.14
#38 0x00603c57 in TApplication::ProcessLine ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCore.so.5.14
#39 0x0048cd9b in TRint::HandleTermInput ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libRint.so.5.14
#40 0x0048b798 in TTermInputHandler::Notify ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libRint.so.5.14
#41 0x0048d650 in TTermInputHandler::ReadNotify ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libRint.so.5.14
#42 0x00754058 in TUnixSystem::CheckDescriptors ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCore.so.5.14
#43 0x00752f44 in TUnixSystem::DispatchOneEvent ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCore.so.5.14
#44 0x00683788 in TSystem::InnerLoop ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCore.so.5.14
#45 0x0068372d in TSystem::Run ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCore.so.5.14
#46 0x006047aa in TApplication::Run ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libCore.so.5.14
#47 0x0048c82c in TRint::Run ()
    from /afs/ihep.su/sw/scharm/fairroot/cbmsoft/tools/root/lib/libRint.so.5.14
#48 0x08048909 in main ()
Root >
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Does anybody know how to beat this?

Thank you.

Dmitry.

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