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Subject: problem in running demo/runMC.C

Posted by [Anonymous Poster](#) on Mon, 17 Mar 2008 14:42:14 GMT

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Hi all,

I was trying to run recotasks/demo/runMC.C and runDemo.C for my vertex fitter. It was running during KVI workshop and after that also. But last Friday runDemo.C didn't run anymore but runMC.C was running.

Today I tried with the latest version of PANDAROOT (version: 2319), but today even runMC.C didn't run. Could you please let me what is the problem or I have to make some changes somewhere?

Best Regards,

Dipak

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I got the following errors:

```
root [1] .x recotasks/demo/runMC.C
```

```
===== CbmRunSim: Initialising simulation run =====
Info in <TGeoManager::TGeoManager>: Geometry CBMGeom, CBM geometry created
-I- CbmGeoMedia Read media
Loading Geant4 granular libraries ...
dlopen error: /misc/cbmsoft/Debian3.1/new/transport/geant4/lib/Linux-g++/libG4detutils .so:
undefined symbol: _ZN18G4VPrimitiveScorer8GetIndexEP6G4Step
Load Error: Failed to load Dynamic link library
/misc/cbmsoft/Debian3.1/new/transport/geant4/lib/Linux-g++/libG4detutils .so
(int)(-1)
*** Interpreter error recovered ***
Error: Symbol TG4RunConfiguration is not defined in current scope
/d/panda02/dipak/pandaroot0308/pandaroot/gconfig/g4Config.C:29:
Error: Symbol TG4RunConfiguration is not defined in current scope
/d/panda02/dipak/pandaroot0308/pandaroot/gconfig/g4Config.C:29:
Error: type TG4RunConfiguration not defined
FILE:/d/panda02/dipak/pandaroot0308/pandaroot/gconfig/g4Config.C LINE:29
Warning: Automatic variable TG4RunConfiguration* runConfiguration is allocated
/d/panda02/dipak/pandaroot0308/pandaroot/gconfig/g4Config.C:29:
Error: Undeclared variable TG4RunConfiguration* runConfiguration
/d/panda02/dipak/pandaroot0308/pandaroot/gconfig/g4Config.C:29:
*** Interpreter error recovered ***

*** Break *** segmentation violation
Using host libthread_db library "/lib/libthread_db.so.1".
Attaching to program: /proc/22283/exe, process 22283
Failed to read a valid object file image from memory.
done.
done.
[Thread debugging using libthread_db enabled]
[New Thread 16384 (LWP 22283)]
done.
done.
done.
```

done.

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Subject: Re: problem in running demo/runMC.C  
Posted by [Mohammad Al-Turany](#) on Mon, 17 Mar 2008 14:54:07 GMT  
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Hallo Dipak,

This is because of the changes in Geant4.9.1 which is now in the new external packages! any way at the GSI the new packages are already installed, just set your SIMPATH to /misc/cbmsoft/Debian3.1/mar08/fairsoft/ and run cmake again in a clean (new) build directory !

Mohammad

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Subject: Re: problem in running demo/runMC.C  
Posted by [Anonymous Poster](#) on Tue, 18 Mar 2008 10:13:26 GMT  
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Hi Mohammad,

I changed the SIMPATH as you suggested but still the reciotasks/demo/runMC.C doesn't run for GEANT4 case. But it is running for GEANT3. If I put the option `fRun->SetName("TGeant4");`  
Then I got the following errors:

```
===== CbmRunSim: Initialising simulation run =====  
Info in <TGeoManager::TGeoManager>: Geometry CBMGeom, CBM geometry created  
-I- CbmGeoMedia Read media  
Loading Geant4 granular libraries ...  
Error in <TUnixSystem::DynamicPathName>: libG4OpenGL[.so | .sl | .dl | .a | .dll] does not  
exist in ./misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib:/misc/cbmsoft/D  
ebian3.1/mar08/fairsoft/tools/root/lib:/usr/lib:/usr/X11R6/lib:/d/panda0  
2/dipak/pndroot0308/build/lib:/usr/lib:/usr/X11R6/lib:/misc/cbmsoft/Debi  
an3.1/mar08/fairsoft/tools/root/lib:/misc/cbmsoft/Debian3.1/mar08/fairso  
ft/generators/lib:/misc/cbmsoft/Debian3.1/mar08/fairsoft/generators/lib:  
/misc/cbmsoft/Debian3.1/mar08/fairsoft/transport/geant3/lib/tgt_linux:/m  
isc/cbmsoft/Debian3.1/mar08/fairsoft/transport/geant4/lib/Linux-g++:/mis  
c/cbmsoft/Debian3.1/mar08/fairsoft/transport/geant4_vmc/lib/tgt_linux:/m  
isc/cbmsoft/Debian3.1/mar08/fairsoft/transport/vgm/lib:/misc/cbmsoft/Deb  
ian3.1/mar08/fairsoft/cern/clhep/lib  
Loading VGM libraries ...  
Loading libraries ... finished  
Info in <TGeoManager::SetTopVolume>: Top volume is cave. Master volume is cave  
--- Building TPC Geometry ---  
Material silicon is not defined  
Create Medium silicon  
Material carbon is not defined
```

Create Medium carbon  
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 <TGeoNavigator::BuildCache>: --- Maximum geometry depth set to 100  
Info in <TGeoManager::CloseGeometry>: 9410 nodes/ 122 volume UID's in CBM geometry  
Info in <TGeoManager::CloseGeometry>: -----modeler ready-----  
Info in <TG4RootNavMgr::SetNavigator>: TG4RootNavigator created and registered to  
G4TransportationManager

Running TVirtualMCApplication::ConstructGeometry

\*\*\*\*\*

Geant4 version Name: geant4-09-01 (14-December-2007)

Copyright : Geant4 Collaboration

Reference : NIM A 506 (2003), 250-303

WWW : <http://cern.ch/geant4>

\*\*\*\*\*

Info in <TG4RootNavMgr::Initialize>: Creating G4 hierarchy ...  
Info in <TGeoManager::ConvertReflections>: Converting reflections in: CBMGeom - CBM  
geometry ...  
Info in <TGeoManager::ConvertReflections>: Done  
==> GEANT4 materials created and mapped to TGeo ones...  
==> GEANT4 physical volumes created and mapped to TGeo hierarchy...  
### INFO: TG4RootDetectorConstruction::Construct() finished  
TG4PostDetConstruction::Initialize  
G4 Stat: instantiated 129 logical volumes  
331 physical volumes  
Info in <TG4RootNavMgr::ConnectToG4>: ROOT detector construction class connected to  
G4RunManager  
Adding HadronPhysicsList QGSP\_BERT\_EMV

<<< Geant4 Physics List engine packaging library: PACK 5.4  
<<< Geant4 Physics List simulation engine: QGSP\_BERT\_EMV 1.0

Adding OpticalPhysicsList  
Adding SpecialPhysicsList  
Debug mode is switched on.  
Visualization Manager instantiating...  
Visualization Manager initialising...  
Registering graphics systems...

You have successfully registered the following graphics systems.

Current available graphics systems are:

- ASCIITree (ATree)
- DAWNFILE (DAWNFILE)
- G4HepRepFile (HepRepFile)
- G4HepRep (HepRepXML)
- RayTracer (RayTracer)
- VRML1FILE (VRML1FILE)
- VRML2FILE (VRML2FILE)

Registering model factories...

You have successfully registered the following model factories.

Registered model factories:

drawByCharge  
drawByParticleID

Registered filter factories:

None

Geant4 has been created.

-I g4Config() using g4conf macro:

/d/panda02/dipak/pndroot0308/pandaroot/gconfig/g4config.in

Physics cuts with script

/d/panda02/dipak/pndroot0308/pandaroot/gconfig/SetCuts.C

### Adding Neutron tracking cut for neutron

### cut value is 10 microseconds

### Hadron physics constructed.

G4Cerenkov::G4Cerenkov constructor

NOTE: this is now a G4VDiscreteProcess!

Required change in UserPhysicsList:

change: pmanager->AddContinuousProcess(theCerenkovProcess);

to: pmanager->AddProcess(theCerenkovProcess);

pmanager->SetProcessOrdering(theCerenkovProcess,idxPostStep);

### Optical physics constructed.

### Processes mapped to VMC controls ok.

### Step limiter physics constructed.

### User particles physics constructed.

### Processes mapped to VMC codes ok.

-I- Initializing PndMvdDetector()

-I- CbmMCAApplication -> simulation RunID: 6934679

\*\*\*\*\*

GEANT4 Geometry statistics:

129 logical volumes

331 physical volumes

10 materials

10 user limits

122 sensitive detectors

\*\*\*\*\*

-I- CbmMCAApplication:: Monte carlo Engine Initialisation with TGeant4

create PndFieldPar container PndConstPar

RuntimeDb: write container CbmBaseParSet

\*\*\* CbmBaseParSet written to ROOT file version: 2

RuntimeDb: write container PndGeoPassivePar

\*\*\* PndGeoPassivePar written to ROOT file version: 2

RuntimeDb: write container PndTpcGeoPar

\*\*\* PndTpcGeoPar written to ROOT file version: 2

RuntimeDb: write container PndConstPar

\*\*\* PndConstPar written to ROOT file version: 2

```

-----
----- actual containers in runtime database -----
CbmBaseParSet          Test class for parameter io
PndGeoPassivePar       Passive Geometry Parameters
PndTpcGeoPar           PndTpc Geometry Parameters
PndConstPar            Const Field parameter container
----- runs, versions -----

```

```

run id
  container          1st-inp  2nd-inp  output
run: 6934679
  CbmBaseParSet          6934679    -1      2
  PndGeoPassivePar       6934679    -1      2
  PndTpcGeoPar           6934679    -1      2
  PndConstPar            6934679    -1      2

```

```

----- input/output -----

```

```

first input: none
second input: none
output:
OBJ: CbmParRootFile   demo.param.root : 0 at: 0x9bfba58
Root file I/O demo.param.root is open
detector I/Os: CbmGenericParlo

```

phot: Total cross sections from Sandia parametrisation.  
 Sampling according PhotoElectric model

compt: Total cross sections has a good parametrisation from 10 KeV to (100/Z) GeV  
 Sampling according Klein-Nishina model  
 tables are built for gamma  
 Lambda tables from 100 eV to 100 GeV in 90 bins.

conv: Total cross sections has a good parametrisation from 1.5 MeV to 100 GeV for all Z;  
 sampling secondary e+e- according Bethe-Heitler model  
 tables are built for gamma  
 Lambda tables from 1.022 MeV to 100 GeV in 100 bins.

msc: Model variant of multiple scattering for e-  
 Lambda tables from 100 eV to 100 TeV in 120 bins.  
 LateralDisplacementFlag= 1 Skin= 0  
 Boundary/stepping algorithm is active with RangeFactor= 0.2 Step limit type 0

eloni: tables are built for e-  
 dE/dx and range tables from 100 eV to 100 TeV in 120 bins.  
 Lambda tables from threshold to 100 TeV in 120 bins.  
 Delta cross sections and sampling from MollerBhabha model  
 Good description from 1 KeV to 100 GeV.  
 Step function: finalRange(mm)= 1, dRoverRange= 0.8, integral: 1, fluct: 1

eBrem: tables are built for e-  
 dE/dx and range tables from 100 eV to 100 TeV in 120 bins.  
 Lambda tables from threshold to 100 TeV in 120 bins.  
 Total cross sections and sampling from StandBrem model (based on the EEDL data library)

Good description from 1 KeV to 100 GeV, log scale extrapolation above 100 GeV. LPM flag 1

eloni: tables are built for e+

dE/dx and range tables from 100 eV to 100 TeV in 120 bins.

Lambda tables from threshold to 100 TeV in 120 bins.

Delta cross sections and sampling from MollerBhabha model

Good description from 1 KeV to 100 GeV.

Step function: finalRange(mm)= 1, dRoverRange= 0.8, integral: 1, fluct: 1

eBrem: tables are built for e+

dE/dx and range tables from 100 eV to 100 TeV in 120 bins.

Lambda tables from threshold to 100 TeV in 120 bins.

Total cross sections and sampling from StandBrem model (based on the EEDL data library)

Good description from 1 KeV to 100 GeV, log scale extrapolation above 100 GeV. LPM flag 1

annihil: Sampling according eplus2gg model

tables are built for e+

Lambda tables from 100 eV to 100 TeV in 120 bins.

msc: Model variant of multiple scattering for proton

Lambda tables from 100 eV to 100 TeV in 120 bins.

LateralDisplacementFlag= 1 Skin= 0

Boundary/stepping algorithm is active with RangeFactor= 0.2 Step limit type 0

hloni: tables are built for proton

dE/dx and range tables from 100 eV to 100 TeV in 120 bins.

Lambda tables from threshold to 100 TeV in 120 bins.

Scaling relation is used from proton dE/dx and range.

Delta cross sections and sampling from BetheBloch model for scaled energy > 2 MeV

Parametrisation from Bragg for protons below.

Step function: finalRange(mm)= 1, dRoverRange= 0.2, integral: 1, fluct: 1

msc: Model variant of multiple scattering for Genericlon

LateralDisplacementFlag= 0 Skin= 0

Boundary/stepping algorithm is active with RangeFactor= 0.2 Step limit type 1

ionloni: tables are built for Genericlon

dE/dx and range tables from 100 eV to 100 TeV in 120 bins.

Lambda tables from threshold to 100 TeV in 120 bins.

Scaling relation is used from proton dE/dx and range.

Delta cross sections and sampling from BetheBloch model for scaled energy > 2 MeV

Parametrisation from Bragg for protons below. NuclearStopping 1

Stopping Power data for 8 ion/material pairs are used.

Step function: finalRange(mm)= 0.1, dRoverRange= 0.1, integral: 1, fluct: 1

hloni: tables are built for anti\_proton

dE/dx and range tables from 100 eV to 100 TeV in 120 bins.

Lambda tables from threshold to 100 TeV in 120 bins.

Scaling relation is used from proton dE/dx and range.  
Delta cross sections and sampling from BetheBloch model for scaled energy > 2 MeV  
Parametrisation from Bragg for protons below.  
Step function: finalRange(mm)= 1, dRoverRange= 0.2, integral: 1, fluct: 1

msc: Model variant of multiple scattering for mu+  
Lambda tables from 100 eV to 100 TeV in 120 bins.  
LateralDisplacementFlag= 1 Skin= 0  
Boundary/stepping algorithm is active with RangeFactor= 0.2 Step limit type 0

muloni: tables are built for mu+  
dE/dx and range tables from 100 eV to 100 TeV in 120 bins.  
Lambda tables from threshold to 100 TeV in 120 bins.  
Bether-Bloch model for E > 0.2 MeV, parametrisation of Bragg peak below,  
radiative corrections for E > 1 GeV  
Step function: finalRange(mm)= 1, dRoverRange= 0.2, integral: 1, fluct: 1

muBrems: tables are built for mu+  
dE/dx and range tables from 100 eV to 100 TeV in 120 bins.  
Lambda tables from threshold to 100 TeV in 120 bins.  
Parametrised model

muPairProd: tables are built for mu+  
dE/dx and range tables from 100 eV to 100 TeV in 120 bins.  
Lambda tables from threshold to 100 TeV in 120 bins.  
Parametrised model

muloni: tables are built for mu-  
dE/dx and range tables from 100 eV to 100 TeV in 120 bins.  
Lambda tables from threshold to 100 TeV in 120 bins.  
Bether-Bloch model for E > 0.2 MeV, parametrisation of Bragg peak below,  
radiative corrections for E > 1 GeV  
Step function: finalRange(mm)= 1, dRoverRange= 0.2, integral: 1, fluct: 1

muBrems: tables are built for mu-  
dE/dx and range tables from 100 eV to 100 TeV in 120 bins.  
Lambda tables from threshold to 100 TeV in 120 bins.  
Parametrised model

muPairProd: tables are built for mu-  
dE/dx and range tables from 100 eV to 100 TeV in 120 bins.  
Lambda tables from threshold to 100 TeV in 120 bins.  
Parametrised model

G4UHadronElasticProcess for neutron PDGcode= 2112 Elow(MeV)= 19 Elowest(eV)= 0

hloni: tables are built for pi+  
dE/dx and range tables from 100 eV to 100 TeV in 120 bins.  
Lambda tables from threshold to 100 TeV in 120 bins.  
Scaling relation is used from proton dE/dx and range.  
Delta cross sections and sampling from BetheBloch model for scaled energy > 0.297504 MeV

Parametrisation from Bragg for protons below.

Step function: finalRange(mm)= 1, dRoverRange= 0.2, integral: 1, fluct: 1

msc: Model variant of multiple scattering for pi-

Lambda tables from 100 eV to 100 TeV in 120 bins.

LateralDisplacementFlag= 1 Skin= 0

Boundary/stepping algorithm is active with RangeFactor= 0.2 Step limit type 0

hloni: tables are built for pi-

dE/dx and range tables from 100 eV to 100 TeV in 120 bins.

Lambda tables from threshold to 100 TeV in 120 bins.

Scaling relation is used from proton dE/dx and range.

Delta cross sections and sampling from BetheBloch model for scaled energy > 0.297504

MeV

Parametrisation from Bragg for protons below.

Step function: finalRange(mm)= 1, dRoverRange= 0.2, integral: 1, fluct: 1

===== Table of registered couples =====

Index : 0 used in the geometry : Yes recalculation needed : No

Material : air

Range cuts : gamma 1 mm e- 1 mm e+ 1 mm

Energy thresholds : gamma 990 eV e- 990 eV e+ 990 eV

Region(s) which use this couple :

DefaultRegionForTheWorld

Index : 1 used in the geometry : Yes recalculation needed : No

Material : vacuum

Range cuts : gamma 1 mm e- 1 mm e+ 1 mm

Energy thresholds : gamma 990 eV e- 990 eV e+ 990 eV

Region(s) which use this couple :

DefaultRegionForTheWorld

Index : 2 used in the geometry : Yes recalculation needed : No

Material : steel

Range cuts : gamma 1 mm e- 1 mm e+ 1 mm

Energy thresholds : gamma 20.8323 keV e- 1.31192 MeV e+ 1.23361 MeV

Region(s) which use this couple :

DefaultRegionForTheWorld

Index : 3 used in the geometry : Yes recalculation needed : No

Material : Al+Be

Range cuts : gamma 1 mm e- 1 mm e+ 1 mm

Energy thresholds : gamma 4.45676 keV e- 496.074 keV e+ 478.087 keV

Region(s) which use this couple :

DefaultRegionForTheWorld

Index : 4 used in the geometry : Yes recalculation needed : No

Material : iron

Range cuts : gamma 1 mm e- 1 mm e+ 1 mm

Energy thresholds : gamma 20.8323 keV e- 1.28002 MeV e+ 1.21851 MeV

Region(s) which use this couple :



DefaultRegionForTheWorld

Index : 5 used in the geometry : Yes recalculation needed : No  
Material : aluminium  
Range cuts : gamma 1 mm e- 1 mm e+ 1 mm  
Energy thresholds : gamma 6.88731 keV e- 596.68 keV e+ 568.011 keV  
Region(s) which use this couple :  
DefaultRegionForTheWorld

Index : 6 used in the geometry : Yes recalculation needed : No  
Material : copper  
Range cuts : gamma 1 mm e- 1 mm e+ 1 mm  
Energy thresholds : gamma 24.6072 keV e- 1.39521 MeV e+ 1.31192 MeV  
Region(s) which use this couple :  
DefaultRegionForTheWorld

Index : 7 used in the geometry : Yes recalculation needed : No  
Material : TPCmixture  
Range cuts : gamma 1 mm e- 1 mm e+ 1 mm  
Energy thresholds : gamma 990 eV e- 990 eV e+ 990 eV  
Region(s) which use this couple :  
DefaultRegionForTheWorld

Index : 8 used in the geometry : Yes recalculation needed : No  
Material : silicon  
Range cuts : gamma 1 mm e- 1 mm e+ 1 mm  
Energy thresholds : gamma 6.88731 keV e- 540.718 keV e+ 521.113 keV  
Region(s) which use this couple :  
DefaultRegionForTheWorld

Index : 9 used in the geometry : Yes recalculation needed : No  
Material : carbon  
Range cuts : gamma 1 mm e- 1 mm e+ 1 mm  
Energy thresholds : gamma 3.29462 keV e- 568.011 keV e+ 554.196 keV  
Region(s) which use this couple :  
DefaultRegionForTheWorld

=====

### Run 0 start.  
-l CbmPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)  
>>> Event 0

\*\*\* Break \*\*\* floating point exception  
Using host libthread\_db library "/lib/libthread\_db.so.1".  
Attaching to program: /proc/9774/exe, process 9774  
Failed to read a valid object file image from memory.  
done.  
done.  
[Thread debugging using libthread\_db enabled]  
[New Thread 16384 (LWP 9774)]  
done.

done.  
done.  
done.  
done.  
done.  
done.

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Subject: Re: problem in running demo/runMC.C  
Posted by [Mohammad Al-Turany](#) on Tue, 18 Mar 2008 11:34:37 GMT  
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Hallo Dipak,

just remove the optical list in your g4Config.C and it should work, I just test it on the GSI cluster now!

i.e:

Quote: TG4RunConfiguration\* runConfiguration  
= new TG4RunConfiguration("geomRoot", "QGSP\_BERT\_EMV");

regards

Mohammad

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