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Subject: Tracklength from GEANE

Posted by [Sebastian Neubert](#) on Mon, 14 Apr 2008 13:17:27 GMT

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Hi Lia,

I am implementing the function that you get the tracklength between two point on the track at the moment. Concerning this topic I found the following post:

Quote:

concerning geane, in the case of propagation to closest approach to the wire/point, there is a function of CbmGeanePro called GetlengthAtPCA() which returns the track length at the point of closest approach. This returns the complete track length (not only the xy projection).

Concerning the propagation to a defined volume or plane this function does not work, since the variable trklength is not filled.

Indeed if I use GetLengthAtPCA inside GeaneTrackRep (where we only extrapolate to planes) I always get 0.

So how can we have trklength be filled also for propagation to planes?

Cheers! Sebastian.

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Subject: Re: Tracklength from GEANE

Posted by [Sebastian Neubert](#) on Mon, 14 Apr 2008 14:57:26 GMT

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Hi!

I have checked in a new version of CbmGeanePro where I added the following:

```
void CbmGeanePro::Propagate(Int_t PDG) {
    // main propagate call to fortran ERTRAK

    GeantCode=fdbPDG->ConvertPdgToGeant3(PDG);

    gMC3->Ertrak(x1,p1,x2,p2,GeantCode, fPropOption.Data());
    std::cout<<"gMC3->TrackLength="<<gMC3->TrackLength()<<std::endl;
    trklength=gMC3->TrackLength();
}
```

So now trklength is set for every Propagation. But I think there was some issue, that when we do it this way, the precision of trklength is limited to the stepsize??

In the recotasks/demo there is now a DemoToolsTask, which demonstrates how to get the tracklength between two points.

Cheers!  
Sebastian.

Cheers! Sebastian.

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Subject: Re: Tracklength from GEANE  
Posted by [Andrea Fontana](#) on Mon, 14 Apr 2008 16:41:53 GMT  
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Hello Sebastian,  
I have spoken with Lia and I think that this is the correct solution: we actually did the same for the PCA extrapolation in the EUFILL function.  
The tracklength value depends on the stepsize, but I do not see other ways to do it: by propagating to a plane, GEANE has a step calculated so to finish on the plane and the number should be quite correct.

Ciao,  
Andrea

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Subject: Re: Tracklength from GEANE  
Posted by [asanchez](#) on Tue, 15 Apr 2008 16:18:36 GMT  
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Hi Sebastian, i was trying to run the macros in demo directory.  
But after having run runDemo.C with geane switched ON,  
i get nothing.  
Do you know why?

my best regards  
ALicia.

43 libraries loaded

```
=====
-I- CbmRunAna: Opening Input file: demo.mc.root
Info in <TGeoManager::TGeoManager>: Geometry Geometry, Geane geometry created
Info: TGeoManager::Import : Reading geometry from file: demo.mc.root
Info in <TGeoManager::CloseGeometry>: Geometry loaded from file...
Info in <TGeoManager::SetTopVolume>: Top volume is cave. Master volume is cave
Info in <TGeoManager::Voxelize>: Voxelizing...
Info in <TGeoNavigator::BuildCache>: --- Maximum geometry depth set to 100
Info in <TGeoManager::CloseGeometry>: 9 nodes/ 9 volume UID's in CBM geometry
```

Info in <TGeoManager::CloseGeometry>: -----modeler ready-----  
Loading Geant3 libraries ...  
Loading Geant3 libraries ... finished

MZSTOR. ZEBRA table base TAB(0) in /MZCC/ at adr 282026719 10CF62DF HEX

MZSTOR. Initialize Store 0 in /GCBANK/  
with Store/Table at absolute adrs 282135565 282026719  
HEX 10D10C0D 10CF62DF  
HEX 1A77A 0  
relative adrs 108410 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 for Geane.  
Energy straggling area parameter from user set to: 0.9996  
CbmMCApplication::ConstructGeometry() : Now closing the geometry  
Warning in <TGeoManager::CloseGeometry>: geometry already closed

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

Cross section calculation concluded successfully  
-I- CbmMCApplication:: Monte carlo Engine Initialisation with TGeant3TGeo  
I- CbmGeane::CbmGeane: Geane is Initialized  
OBJ: CbmRuntimeDb CbmRuntimeDb Class for runtime database

-I- CbmRunAna::Init :  
demo.mc.root is connected with:

PndFieldCreator::SetParm()  
create PndFieldPar container PndFieldPar  
create PndFieldPar container PndSolenoidPar  
create PndFieldPar container PndDipolePar  
create PndFieldPar container PndTransPar  
create PndFieldPar container PndConstPar  
create PndFieldPar container PndMultiFieldPar

\*\*\*\*\*  
initialisation for run id 1705800566  
\*\*\*\*\*  
Container CbmBaseParSet initialized from ROOT file.

Error in <PndFieldPar::init():>: PndFieldPar not initialized  
 Error in <PndSolenoidPar::init():>: PndSolenoidPar not initialized  
 Error in <PndDipolePar::init():>: PndDipolePar not initialized  
 Error in <PndTransPar::init():>: PndTransPar not initialized  
 Container PndConstPar initialized from ROOT file.  
 Error in <PndMultiFieldPar::init():>: PndMultiFieldPar not initialized  
 Error in <CbmRuntimeDb::initContainers():>: Error occurred during initialization  
 PndFieldCreator::createCbmField()

----- actual containers in runtime database -----

CbmBaseParSet	Test class for parameter io
PndFieldPar	Field parameter container
PndSolenoidPar	Solenoid Field parameter container
PndDipolePar	Dipole Field parameter container
PndTransPar	Trans. Field parameter container
PndConstPar	Const Field parameter container
PndMultiFieldPar	Multiple Field parameter container

----- runs, versions -----

run id	container	1st-inp	2nd-inp	output
run: 1705800566	CbmBaseParSet	-1	-1	0
	PndFieldPar	-1	-1	0
	PndSolenoidPar	-1	-1	0
	PndDipolePar	-1	-1	0
	PndTransPar	-1	-1	0
	PndConstPar	-1	-1	0
	PndMultiFieldPar	-1	-1	0

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

first Input:  
 OBJ: CbmParRootFile demo.param.root : 0 at: 0x9b9e6b0  
 Root file I/O demo.param.root is open  
 detector I/Os: CbmGenericParlo  
 second input: none  
 output: none  
 DemoPatternRecoTask::Exec  
 0 tracks created  
 DemoKalmanTask::Exec Event 0  
 DemoToolsTask::Exec Event 0

Macro finished succesfully.  
 Output file is demo.mcreco.root  
 Parameter file is demo.param.root  
 Real time 3.41002 s, CPU time 3.34 s