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Subject: Usage of Dirc in concord with certain detectors

Posted by [donghee](#) on Tue, 28 Jul 2009 15:33:14 GMT

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Dear Dirc experts,

The Dirc module must carefully be used in the MC simulation, if you really want to put dirc detector into full chain MC simulation e.g, any kind of physics analysis with all detectors.

When you introduce Dirc in your simulation, take care calling the Dirc class.  
You have to put PndDrc at the end of your script in runsimulation.C

If you can do for example like this, then should be filled all info.

Quote:

```
FairDetector *Gem = new PndGemDetector("GEM", kTRUE);
FairDetector *Dch = new PndDchDetector("DCH", kTRUE);
FairDetector *Lumi = new PndLumi("Lumi", kTRUE);
PndDrc      *Drc = new PndDrc("DIRC", kTRUE);
```

But if you ignore the position of Drc, like following, then losing your task for GEM, Dch and Lumi.

Quote:

```
PndDrc      *Drc = new PndDrc("DIRC", kTRUE);
FairDetector *Gem = new PndGemDetector("GEM", kTRUE);
FairDetector *Dch = new PndDchDetector("DCH", kTRUE);
FairDetector *Lumi = new PndLumi("Lumi", kTRUE);
```

I think that Dirc experts have to clean up this mess.

If you make the digitization procedure from differently produced simulation files, you can simply check what happen.

But I'm not sure whether it depends on the event topology.

I'm just guessing that some tracking is abandoned due to the Dirc part, then cannot goes to next detectors.

Quote:

```
*** GTRACK *** More than 10000 steps, tracking abandoned!
```

Maybe this should be some potential problem in the future.

Best wishes,  
Donghee Kang

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Subject: Re: Usage of Dirc in concord with certain detectors

Posted by [StefanoSpataro](#) on Tue, 28 Jul 2009 15:41:52 GMT

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I have not understood why the simulation should be affected by the order of detectors.

Could you please show some sample, some plots, where you can see this effect?

In general the killed particles are just cherenkov photons reflected thousand of times inside the rods. And dch/gem/lumi are outside the dirc acceptance, then particles hitting the dirc will never enter inside those detectors.

Could you please give further informations?

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Subject: Re: Usage of Dirc in concord with certain detectors

Posted by [donghee](#) on Tue, 28 Jul 2009 16:11:32 GMT

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Dear Dirc expert and Stefano,

I have tested to understand what is happening in the Dirc part.

I prepared two codes, one is including Dirc and other one is excluding Dirc during the simulation using runSim.C and runDigi.C

After digitization or hit producing, the final statistics in every part of any detectors are clearly different in two cases.

But in principle, the hit in MVD or TPC detector must be same, regardless of using Dirc.

The reason is following.

If the Dirc task failed in the running MC, all information are thrown away even though other detectors are correctly worked.

I can give you some number

without Dirc -> Entries of PndTpcDigi.fBits is 24577

with Dirc -> Entries of PndTpcDigi.fBits is 8844

These two numbers must be 24577 in any case.

That means, despite Dirc is incompetent to judge, the statistics are greatly influenced by this wrong decision in the Dirc session.

This is apparently misconception!!!

Best wishes,  
Donghee Kang

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Subject: Re: Usage of Dirc in concord with certain detectors

Posted by [StefanoSpataro](#) on Tue, 28 Jul 2009 16:18:49 GMT

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Could you please send your macros, so that we can test them exactly?

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Subject: Re: Usage of Dirc in concord with certain detectors  
Posted by [Carsten Schwarz](#) on Tue, 28 Jul 2009 18:23:41 GMT

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Dear debuggers,

I'm listening carefully your discussion in order to fix the problem. I thought the exiting of GTRACKS refers only to photons. I'm grateful for every information.

Best regards  
Carsten (barrel-DIRC)

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Subject: Re: Usage of Dirc in concord with certain detectors  
Posted by [donghee](#) on Wed, 29 Jul 2009 08:39:19 GMT

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Dear PANDA colleague,

find attached the MC scripts and small mount of data produced by pseudo-DVCS events generator with exclusive electron + gamma + anti-proton particle. Anti-proton goes to very forward direction, responding detector should be dch or lumi and partly gem. electron has mostly an opposite direction, i.e, backward direction. Gamma is distributed in the forward and central part of spectrometer.

There are 2 main scripts as you can expect: runMC.C and runDigi.C

Quote:

```
pandaroot/macro>tar -xvzf dvcs.tar.gz
pandaroot/macro>root runMC.C
pandaroot/macro>root runDigi.C
```

I would like to confirm two things.

At First:

In the runMC.C, the Dirc part is located at the end in order to store all detector information. If you move dirc part into the middle part of the runMC script, then the MC info. of detectors, which are calling below the dirc part, could not record anymore when you go to digitization. The output can produce but content should be empty!  
Therefore I suggested that you have to put Dirc part at the end of script.

Second :

As I already mentioned.  
If you try to run simulation and digitization without Dirc and with Dirc, you can find the different result in both output.  
Please open your digi output, and have a look any detector info.

Both statistics should be different.

Best wishes,  
Donghee Kang

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## File Attachments

1) [dvcs.tar.gz](#), downloaded 446 times

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Subject: Re: Usage of Dirc in concord with certain detectors  
Posted by [StefanoSpataro](#) on Thu, 06 Aug 2009 12:58:58 GMT  
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Hello,

I have tried to study this behaviour.

First I have run tutorials/lhetrack/run\_sim\_tpccombi\_pgun.C"(100,13,1)" with the standard macro, where Drc is at the end, and everything was running fine.

Then I have moved the Drc part just before Tpc, almost at the beginning, and after 10 events I have a crash in geometry (TGeoNode::Safety).

This is the backtrace:

Toggle Spoiler

```
root [0] .x run_sim_tpccombi_pgun.C(200,13,1)
Note: File "/home/stefano/july08/cbuild/lib/libDrc.so" already loaded
- RTDB container factory PndPidContFact
-l- FairRun::SetMaterials() Media file used:
/home/stefano/july08/pandaroot/geometry/media_pnd.geo
- l - PndMvdDetector: fListOfSensitives contains:
  Disk-Sensor
  Barrel-Sensor
  PixelActive
  StripActive
  StripSensor
  SensorActiveArea
  StripActive
  PixelActive
---> _new_ Forward End-Cap has been used:
/home/stefano/july08/pandaroot/geometry/emc_module3new.root
```

MDT version used: torino

```

===== FairRunSim: Initialising simulation run =====
Info in <TGeoManager::TGeoManager>: Geometry FAIRGeom, FAIR geometry created
-l- FairGeoMedia Read media
FairRunSim::Init() create visualisation manager
-l- PndFieldMap: Reading field map from ROOT file
/home/stefano/july08/pandaroot/input/TransMap.root
-l- PndFieldMap: Reading field map from ROOT file
/home/stefano/july08/pandaroot/input/DipoleMap.root
-l- PndFieldMap: Reading field map from ROOT file
/home/stefano/july08/pandaroot/input/SolenoidMap.root
----- Standard Config is called -----
Loading Geant3 libraries ...
Loading Geant3 libraries ... finished

```

```

MZSTOR. ZEBRA table base TAB(0) in /MZCC/ at adr 764000863 2D89BA5F HEX

```

```

MZSTOR. Initialize Store 0 in /GCBANK/
with Store/Table at absolute adrs 764109709 764000863
HEX 2D8B638D 2D89BA5F
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
-l- G3Config: Geant3 with TGeo has been created.

```

```

SetCuts Macro: Setting Processes..
SetCuts Macro: Setting cuts..
Info in <TGeoManager::SetTopVolume>: Top volume is cave. Master volume is cave
Material aluminium is not defined
Create Medium aluminium
Material iron is not defined
Create Medium iron

```

```

===== DRC:: ConstructGeometry() =====
=====
DIRC min. radius = 50.35
DIRC max. radius = 53.0364
sob_shift = -150
sob_radius2 = 104.012

```

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>: 566 nodes/ 110 volume UID's in FAIR geometry  
Info in <TGeoManager::CloseGeometry>: -----modeler ready-----  
--- Building TPC Geometry ---  
Material silicon is not defined  
Create Medium silicon  
Material carbon is not defined  
Create Medium carbon  
fwendcap & bwendcap flags == 1 / 0

=====  
=====

PndEmcReader: EMC geometry file ==  
/home/stefano/july08/pandaroot/geometry/emc\_module1245.dat  
Emc module = 1  
\*\*\*\*\*  
Emc module = 2  
\*\*\*\*\*  
Emc module = 3  
\*\*\*\*\*  
Emc module = 4  
\*\*\*\*\*  
Emc module = 5  
\*\*\*\*\*

=====  
=====

File name = /home/stefano/july08/pandaroot/geometry/emc\_module3new.root  
You do not provide a ROOT file  
FairMCApplication::ConstructGeometry() : Now closing the geometry  
Warning in <TGeoManager::CloseGeometry>: geometry already closed  
-I- PndDrc: Switching OFF Cherenkov Propagation  
-I- PndDrc: Intialization successfull  
-I- Initializing PndMvdDetector()

\*\*\*\*\*  
initialisation for run id 482956479  
\*\*\*\*\*

-I FairParSet::init() 2 0  
Error in <FairBaseParSet::init()>: FairBaseParSet not initialized  
-I FairParSet::init() 2 0  
Error in <PndGeoPassivePar::init()>: PndGeoPassivePar not initialized  
-I FairParSet::init() 2 0  
Error in <PndTpcGeoPar::init()>: PndTpcGeoPar not initialized  
-I FairParSet::init() 2 0  
Error in <PndGeoTofPar::init()>: PndGeoTofPar not initialized  
-I FairParSet::init() 2 0

Error in <PndGeoDrcPar::init(>: PndGeoDrcPar not initialized  
 -l FairParSet::init() 2 0  
 Error in <PndGeoMdtPar::init(>: PndGeoMdtPar not initialized  
 Error in <FairRuntimeDb::initContainers(>: Error occured during initialization  
 -l- FairMCApplication -> simulation RunID: 482956479

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

Cross section calculation concluded successfully

-l- FairMCApplication:: Monte carlo Engine Initialisation with TGeant3TGeo  
 create PndFieldPar container PndMultiFieldPar  
 create PndFieldPar container PndTransPar  
 create PndFieldPar container PndDipolePar  
 create PndFieldPar container PndSolenoidPar  
 RuntimeDb: write container FairBaseParSet  
 \*\*\* FairBaseParSet 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 PndGeoTofPar  
 \*\*\* PndGeoTofPar written to ROOT file version: 2  
 RuntimeDb: write container PndGeoDrcPar  
 RuntimeDb: write container PndGeoMdtPar  
 RuntimeDb: write container PndMultiFieldPar  
 \*\*\* PndMultiFieldPar written to ROOT file version: 2  
 RuntimeDb: write container PndTransPar  
 RuntimeDb: write container PndDipolePar  
 RuntimeDb: write container PndSolenoidPar

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

|                  |                                    |
|------------------|------------------------------------|
| FairBaseParSet   | Test class for parameter io        |
| PndGeoPassivePar | Passive Geometry Parameters        |
| PndTpcGeoPar     | PndTpc Geometry Parameters         |
| PndGeoTofPar     | tof Geometry Parameters            |
| PndGeoDrcPar     | Drc Geometry Parameters            |
| PndGeoMdtPar     | MDT Geometry Parameters            |
| PndMultiFieldPar | Multiple Field parameter container |
| PndTransPar      | Trans. Field parameter container   |
| PndDipolePar     | Dipole Field parameter container   |
| PndSolenoidPar   | Solenoid Field parameter container |

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

| run id         | container        | 1st-inp   | 2nd-inp | output |
|----------------|------------------|-----------|---------|--------|
| run: 482956479 |                  |           |         |        |
|                | FairBaseParSet   | 482956479 | -1      | 2      |
|                | PndGeoPassivePar | 482956479 | -1      | 2      |
|                | PndTpcGeoPar     | 482956479 | -1      | 2      |
|                | PndGeoTofPar     | 482956479 | -1      | 2      |
|                | PndGeoDrcPar     | -1        | -1      | 0      |
|                | PndGeoMdtPar     | -1        | -1      | 0      |
|                | PndMultiFieldPar | 482956479 | -1      | 2      |

|                |           |    |   |
|----------------|-----------|----|---|
| PndTransPar    | 482956479 | -1 | 0 |
| PndDipolePar   | 482956479 | -1 | 0 |
| PndSolenoidPar | 482956479 | -1 | 0 |

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

first input: none

second input: none

output:

OBJ: FairParRootFile params\_tpccombi.root : 0 at: 0xc19f2e8

Root file I/O params\_tpccombi.root is open

detector I/Os: FairGenericParlo

\*\*\*\* GTRIGI: IEVENT= 1 IDEVT= 1 Random Seeds = 4357 0

FairMCApplication::GeneratePrimaries()

-I FairPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)Event Time = 0(ns)

-I- PndStack: Filling MCTrack array...

-I- PndStack: Number of primaries = 1

Total number of particles = 2006

Number of tracks in output = 1953

-I- PndStack: Updating track indizes.....stack and 8 collections updated.

\*\*\*\* GTRIGI: IEVENT= 2 IDEVT= 2 Random Seeds = 4357 0

FairMCApplication::GeneratePrimaries()

-I FairPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)Event Time = 0(ns)

-I- PndStack: Filling MCTrack array...

-I- PndStack: Number of primaries = 1

Total number of particles = 1875

Number of tracks in output = 1842

-I- PndStack: Updating track indizes.....stack and 8 collections updated.

\*\*\*\* GTRIGI: IEVENT= 3 IDEVT= 3 Random Seeds = 4357 0

FairMCApplication::GeneratePrimaries()

-I FairPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)Event Time = 0(ns)

-I- PndStack: Filling MCTrack array...

-I- PndStack: Number of primaries = 1

Total number of particles = 1051

Number of tracks in output = 1031

-I- PndStack: Updating track indizes.....stack and 8 collections updated.

\*\*\*\* GTRIGI: IEVENT= 4 IDEVT= 4 Random Seeds = 4357 0

FairMCApplication::GeneratePrimaries()

-I FairPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)Event Time = 0(ns)

-I- PndStack: Filling MCTrack array...

-I- PndStack: Number of primaries = 1

Total number of particles = 2678

Number of tracks in output = 2640

-I- PndStack: Updating track indizes.....stack and 8 collections updated.

\*\*\*\* GTRIGI: IEVENT= 5 IDEVT= 5 Random Seeds = 4357 0

FairMCApplication::GeneratePrimaries()

-I FairPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)Event Time = 0(ns)

-I- PndStack: Filling MCTrack array...

-I- PndStack: Number of primaries = 1

Total number of particles = 1715

Number of tracks in output = 1677

-I- PndStack: Updating track indizes.....stack and 8 collections updated.

\*\*\*\* GTRIGI: IEVENT= 6 IDEVT= 6 Random Seeds = 4357 0

FairMCApplication::GeneratePrimaries()

```

-I FairPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)Event Time = 0(ns)
-I- PndStack: Filling MCTrack array...
-I- PndStack: Number of primaries      = 1
      Total number of particles = 2291
      Number of tracks in output = 2272
-I- PndStack: Updating track indizes.....stack and 8 collections updated.
**** GTRIGI: IEVENT=  7 IDEVT=  7 Random Seeds =  4357      0
FairMCApplication::GeneratePrimaries()
-I FairPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)Event Time = 0(ns)
-I- PndStack: Filling MCTrack array...
-I- PndStack: Number of primaries      = 1
      Total number of particles = 1541
      Number of tracks in output = 1504
-I- PndStack: Updating track indizes.....stack and 8 collections updated.
**** GTRIGI: IEVENT=  8 IDEVT=  8 Random Seeds =  4357      0
FairMCApplication::GeneratePrimaries()
-I FairPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)Event Time = 0(ns)
-I- PndStack: Filling MCTrack array...
-I- PndStack: Number of primaries      = 1
      Total number of particles = 2451
      Number of tracks in output = 2408
-I- PndStack: Updating track indizes.....stack and 8 collections updated.
**** GTRIGI: IEVENT=  9 IDEVT=  9 Random Seeds =  4357      0
FairMCApplication::GeneratePrimaries()
-I FairPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)Event Time = 0(ns)
-I- PndStack: Filling MCTrack array...
-I- PndStack: Number of primaries      = 1
      Total number of particles = 1713
      Number of tracks in output = 1678
-I- PndStack: Updating track indizes.....stack and 8 collections updated.
**** GTRIGI: IEVENT= 10 IDEVT= 10 Random Seeds =  4357      0
FairMCApplication::GeneratePrimaries()
-I FairPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)Event Time = 0(ns)

```

Program received signal SIGSEGV, Segmentation fault.

[Switching to Thread -1208748352 (LWP 14287)]

0x031773c9 in TGeoNode::Safety () from /home/stefano/july08/tools/root/lib/libGeom.so  
(gdb) bt

#0 0x031773c9 in TGeoNode::Safety () from /home/stefano/july08/tools/root/lib/libGeom.so

#1 0x031956f4 in TGeoShapeAssembly::Safety () from  
/home/stefano/july08/tools/root/lib/libGeom.so

#2 0x031773fd in TGeoNode::Safety () from /home/stefano/july08/tools/root/lib/libGeom.so

#3 0x031717f9 in TGeoNavigator::Safety () from  
/home/stefano/july08/tools/root/lib/libGeom.so

#4 0x03174c6f in TGeoNavigator::FindNextBoundary () from  
/home/stefano/july08/tools/root/lib/libGeom.so

#5 0x0315a7f3 in TGeoManager::FindNextBoundary () from  
/home/stefano/july08/tools/root/lib/libGeom.so

#6 0xb5fc7302 in gtnextTGeo () from  
/home/stefano/july08/transport/geant3/lib/tgt\_linux/libgeant321.so

#7 0xb5fc126d in gtnext\_ () from  
/home/stefano/july08/transport/geant3/lib/tgt\_linux/libgeant321.so

#8 0xb5eb55f7 in g3tmuon\_ () from  
 /home/stefano/july08/transport/geant3/lib/tgt\_linux/libgeant321.so  
 #9 0xb5ebab57 in g3track\_ () from  
 /home/stefano/july08/transport/geant3/lib/tgt\_linux/libgeant321.so  
 #10 0xb5fc43ff in gutrak\_ () from  
 /home/stefano/july08/transport/geant3/lib/tgt\_linux/libgeant321.so  
 #11 0xb5ebb46d in gtreveroot\_ () from  
 /home/stefano/july08/transport/geant3/lib/tgt\_linux/libgeant321.so  
 #12 0xb5fc442e in gutrev\_ () from  
 /home/stefano/july08/transport/geant3/lib/tgt\_linux/libgeant321.so  
 #13 0xb5fafb9f in jumpt0\_ () from  
 /home/stefano/july08/transport/geant3/lib/tgt\_linux/libgeant321.so  
 #14 0xb5de0882 in g3trig\_ () from  
 /home/stefano/july08/transport/geant3/lib/tgt\_linux/libgeant321.so  
 #15 0xb5fbc776 in TGeant3::Gtrig () from  
 /home/stefano/july08/transport/geant3/lib/tgt\_linux/libgeant321.so  
 #16 0xb5fc0dc5 in TGeant3::ProcessEvent () from  
 /home/stefano/july08/transport/geant3/lib/tgt\_linux/libgeant321.so  
 #17 0xb5fc0d12 in TGeant3::ProcessRun () from  
 /home/stefano/july08/transport/geant3/lib/tgt\_linux/libgeant321.so  
 #18 0x023cb954 in FairMCApplication::RunMC (this=0x9d21b00, nofEvents=200) at  
 /home/stefano/july08/pandaroot/base/FairMCApplication.cxx:229  
 #19 0x023e4d38 in FairRunSim::Run (this=0x9c96030, NStart=200, NStop=0) at  
 /home/stefano/july08/pandaroot/base/FairRunSim.cxx:289  
 #20 0x02417b63 in G\_\_FairDict\_532\_0\_5 (result7=0xbfce2b0, funcname=0x9c94390 "\001",  
 libp=0xbfec8460, hash=0)  
 at /home/stefano/july08/cbuild/base/FairDict.cxx:9071  
 #21 0x00dee2e7 in Cint::G\_\_ExceptionWrapper () from  
 /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #22 0x00e82497 in G\_\_execute\_call () from /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #23 0x00e826fa in G\_\_call\_cppfunc () from /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #24 0x00e63f67 in G\_\_interpret\_func () from /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #25 0x00e52b28 in G\_\_getfunction () from /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #26 0x00f34055 in G\_\_getstructmem () from /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #27 0x00f2bb3f in G\_\_getvariable () from /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #28 0x00e36b2a in G\_\_getitem () from /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #29 0x00e39abf in G\_\_getexpr () from /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #30 0x00eae4ac in G\_\_exec\_statement () from  
 /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #31 0x00e65a8f in G\_\_interpret\_func () from /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #32 0x00e5296a in G\_\_getfunction () from /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #33 0x00e36e74 in G\_\_getitem () from /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #34 0x00e39abf in G\_\_getexpr () from /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #35 0x00e42dd0 in G\_\_calc\_internal () from /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #36 0x00ebfe34 in G\_\_process\_cmd () from /home/stefano/july08/tools/root/lib/libCint.so.5.20  
 #37 0x0095a8d3 in TCint::ProcessLine () from  
 /home/stefano/july08/tools/root/lib/libCore.so.5.20  
 #38 0x0095aa54 in TCint::ProcessLineSynch () from  
 /home/stefano/july08/tools/root/lib/libCore.so.5.20  
 #39 0x008a15f3 in TApplication::ExecuteFile () from  
 /home/stefano/july08/tools/root/lib/libCore.so.5.20  
 #40 0x008a1916 in TApplication::ProcessFile () from

```
/home/stefano/july08/tools/root/lib/libCore.so.5.20
#41 0x0089f93e in TApplication::ProcessLine () from
/home/stefano/july08/tools/root/lib/libCore.so.5.20
#42 0x00630e8a in TRint::HandleTermInput () from
/home/stefano/july08/tools/root/lib/libRint.so.5.20
#43 0x0062f4e0 in TTermInputHandler::Notify () from
/home/stefano/july08/tools/root/lib/libRint.so.5.20
#44 0x0063177e in TTermInputHandler::ReadNotify () from
/home/stefano/july08/tools/root/lib/libRint.so.5.20
#45 0x00969dfa in TUnixSystem::CheckDescriptors () from
/home/stefano/july08/tools/root/lib/libCore.so.5.20
#46 0x0096e01c in TUnixSystem::DispatchOneEvent () from
/home/stefano/july08/tools/root/lib/libCore.so.5.20
#47 0x008f78b4 in TSystem::InnerLoop () from
/home/stefano/july08/tools/root/lib/libCore.so.5.20
---Type <return> to continue, or q <return> to quit---
#48 0x008f767b in TSystem::Run () from /home/stefano/july08/tools/root/lib/libCore.so.5.20
#49 0x0089fafa in TApplication::Run () from /home/stefano/july08/tools/root/lib/libCore.so.5.20
#50 0x0062fc5e in TRint::Run () from /home/stefano/july08/tools/root/lib/libRint.so.5.20
#51 0x08048d5a in main ()
```

Then I have tried to move it between TPC and MVD, and now the error is in  
TGeoNavigator::FindNextDaughterBoundary :

Toggle Spoiler

Program received signal SIGSEGV, Segmentation fault.

[Switching to Thread -1208604992 (LWP 14523)]

```
0x02c86f47 in TGeoNavigator::FindNextDaughterBoundary () from
/home/stefano/july08/tools/root/lib/libGeom.so
```

(gdb) bt

```
#0 0x02c86f47 in TGeoNavigator::FindNextDaughterBoundary () from
/home/stefano/july08/tools/root/lib/libGeom.so
#1 0x02c8aa90 in TGeoNavigator::FindNextBoundary () from
/home/stefano/july08/tools/root/lib/libGeom.so
#2 0x02c707f3 in TGeoManager::FindNextBoundary () from
/home/stefano/july08/tools/root/lib/libGeom.so
#3 0xb517f302 in gtnextTGeo () from
/home/stefano/july08/transport/geant3/lib/tgt_linux/libgeant321.so
#4 0xb517926d in gtnext_ () from
/home/stefano/july08/transport/geant3/lib/tgt_linux/libgeant321.so
#5 0xb506d5f7 in g3tmuon_ () from
/home/stefano/july08/transport/geant3/lib/tgt_linux/libgeant321.so
#6 0xb5072b57 in g3track_ () from
/home/stefano/july08/transport/geant3/lib/tgt_linux/libgeant321.so
#7 0xb517c3ff in gutrak_ () from
/home/stefano/july08/transport/geant3/lib/tgt_linux/libgeant321.so
#8 0xb507346d in gtreveroot_ () from
/home/stefano/july08/transport/geant3/lib/tgt_linux/libgeant321.so
#9 0xb517c42e in gutrev_ () from
/home/stefano/july08/transport/geant3/lib/tgt_linux/libgeant321.so
#10 0xb5167b9f in jumpt0_ () from
```

```
/home/stefano/july08/transport/geant3/lib/tgt_linux/libgeant321.so
#11 0xb4f98882 in g3trig_ () from
/home/stefano/july08/transport/geant3/lib/tgt_linux/libgeant321.so
#12 0xb5174776 in TGeant3::Gtrig () from
/home/stefano/july08/transport/geant3/lib/tgt_linux/libgeant321.so
#13 0xb5178dc5 in TGeant3::ProcessEvent () from
/home/stefano/july08/transport/geant3/lib/tgt_linux/libgeant321.so
#14 0xb5178d12 in TGeant3::ProcessRun () from
/home/stefano/july08/transport/geant3/lib/tgt_linux/libgeant321.so
#15 0x024fb954 in FairMCApplication::RunMC (this=0x8ffebe8, nofEvents=200) at
/home/stefano/july08/pandaroot/base/FairMCApplication.cxx:229
#16 0x02514d38 in FairRunSim::Run (this=0x8f73120, NStart=200, NStop=0) at
/home/stefano/july08/pandaroot/base/FairRunSim.cxx:289
#17 0x02547b63 in G__FairDict_532_0_5 (result7=0xbff30b50, funcname=0x8f71480 "\001",
libp=0xbff2ad00, hash=0)
```

I have removed the pipe, thinking about some overlap between it and the DIRC, but without improvements. I have removed all the detectors, and then the simulation runs. Once I put inside all the detectors one by one (keeping dirc at the top after cave), at emc I have again the crash.

Then, we have some problems with geometry, maybe some conflict between dirc and emc, but I am not sure. What is strange is that the crash depends on the order of detectors. Expert should maybe take a look, trying to understand what is going wrong.

I have done all my tests with geant3 and old external packages. I will try tpo see what will happen with the new ones.

---

Subject: Re: Usage of Dirc in concord with certain detectors

Posted by [asanchez](#) on Thu, 06 Aug 2009 14:27:59 GMT

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Hi stephano,  
so far i remember, the Dirc geometry is a full cylinder  
without gap to place the pellet pipe.  
Maybe the problem is due to this fact.

regards  
Alicia.

---

Subject: Re: Usage of Dirc in concord with certain detectors

Posted by [StefanoSpataro](#) on Thu, 06 Aug 2009 15:02:40 GMT

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If I remember well, Carsten has modified the geometry to avoid the overlap with the pipe.  
It should not be the case.

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Subject: Re: Usage of Dirc in concord with certain detectors  
Posted by [Stefano Spataro](#) on Thu, 06 Aug 2009 17:52:36 GMT  
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I have tried also with july09 external packages, the same problem in geometry appears.

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