
Subject: Re: Time-based EMC simulation

Posted by [StefanoSpataro](#) on Fri, 13 Sep 2013 15:06:20 GMT

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Done! Now with the emc macro:

```
MacBook-Pro-di-Stefano:emc spataro$ pwd
/Users/spataro/apr13/pandaroot/macro/emc
MacBook-Pro-di-Stefano:emc spataro$ svn info
Path: .
URL: https://subversion.gsi.de/fairroot/pandaroot/trunk/macro/emc
Repository Root: https://subversion.gsi.de/fairroot
Repository UUID: 0381ead4-6506-0410-b988-94b70fbc4730
Revision: 21697
Node Kind: directory
Schedule: normal
Last Changed Author: dimam
Last Changed Rev: 21680
Last Changed Date: 2013-09-11 14:50:34 +0200 (Mer, 11 Set 2013)
MacBook-Pro-di-Stefano:emc spataro$ root -l sim_emc.C
root [0]
Processing sim_emc.C...
Error in <TClonesArray::SetClass>: called with a null pointer
FairRootManager::OpenOutFile("sim_emc.root")
[INFO ] Media file used : /Users/spataro/apr13/pandaroot/geometry/media_pnd.geo
-l container name PndEmcGeoPar
[INFO ] ===== FairRunSim: Initialising simulation run =====
Info in <TGeoManager::TGeoManager>: Geometry FAIRGeom, FAIR geometry created
-l- FairGeoMedia Read media
-l container name PndEmcDigiPar
-l container name PndEmcDigiNonuniformityPar

*****
initialisation for run id 1379084142
*****
-l- FairRunTimeDB::InitContainer() PndEmcGeoPar
[ERROR ] init() PndEmcGeoPar not initialized
-l- FairRunTimeDB::InitContainer() PndEmcDigiPar
PndEmcDigiPar initialized from Ascii file
-l- FairRunTimeDB::InitContainer() PndEmcDigiNonuniformityPar
[ERROR ] init() PndEmcDigiNonuniformityPar not initialized
Error in <FairRuntimeDb::initContainers()>: Error ocured during initialization
[INFO ] PndFieldMap: Reading field map from ROOT file
/Users/spataro/apr13/pandaroot/input/TransMap.1500.root
[INFO ] PndFieldMap: Reading field map from ROOT file
/Users/spataro/apr13/pandaroot/input/DipoleMap1.1500.root
[INFO ] PndFieldMap: Reading field map from ROOT file
/Users/spataro/apr13/pandaroot/input/DipoleMap2.1500.root
[INFO ] PndFieldMap: Reading field map from ROOT file
/Users/spataro/apr13/pandaroot/input/SolenoidMap1.root
[INFO ] PndFieldMap: Reading field map from ROOT file
/Users/spataro/apr13/pandaroot/input/SolenoidMap2.root
```

[INFO] PndFieldMap: Reading field map from ROOT file
/Users/spataro/apr13/pandaroot/input/SolenoidMap3.root
[INFO] PndFieldMap: Reading field map from ROOT file
/Users/spataro/apr13/pandaroot/input/SolenoidMap4.root
[INFO] ----- Standard Config is called -----
Loading Geant3 libraries ...
Loading Geant3 libraries ... finished

MZSTOR. ZEBRA table base TAB(0) in /MZCC/ at adr 88041159 53F66C7 HEX

MZSTOR. Initialize Store 0 in /GCBANK/
with Store/Table at absolute adrs 88191925 88041159
HEX 541B3B5 53F66C7
HEX 24B32 0
relative adrs 150322 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= 2000400000, 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
Info in <TGeoNavigator::BuildCache>: --- Maximum geometry depth set to 100
fwendcap & bwendcap flags == 1 / 1

=====
EMC 2):: ConstructASCIIGeometry() ===
=====
PndEmcReader: EMC geometry file ==
/Users/spataro/apr13/pandaroot/geometry/emc_module12.dat
Emc module = 1

Emc module = 2

=====
EMC:: ConstructRootGeometry() m3a ===
=====
File name = /Users/spataro/apr13/pandaroot/geometry/emc_module3_2012_new.root
=====
EMC:: ConstructRootGeometry() m4a ===
=====
fgeoName3:: /Users/spataro/apr13/pandaroot/geometry/emc_module4_StraightGeo24.4.root

File name Bw1=
/Users/spataro/apr13/pandaroot/geometry/emc_module4_StraightGeo24.4.root

```
===== EMC:: ConstructRootGeometry() m5a ===  
=====  
fgeoName4:: /Users/spataro/apr13/pandaroot/geometry/emc_module5_fsc.root  
File name Fsc= /Users/spataro/apr13/pandaroot/geometry/emc_module5_fsc.root  
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::CountLevels>: max level = 5, max placements = 1496  
Info in <TGeoManager::CloseGeometry>: 1833818 nodes/ 761 volume UID's in FAIR geometry  
Info in <TGeoManager::CloseGeometry>: -----modeler ready-----
```

```
PndEmc::SetSpecialPhysicsCuts():  
  using special physics cuts ...
```

```
[INFO ] Initialize Tasks-----  
INITIALIZATION *****
```

```
HitProducer has EnergyHitThreshold of 0.000001 GeV and Use_nonuniformity 0  
-|- PndEmcHitProducer: Intialization successfull  
[INFO ] Simulation RunID: 1379084142
```

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

Cross section calculation concluded successfully

```
[INFO ] Monte carlo Engine Initialisation with : TGeant3TGeo  
[INFO ] *** PndEmcGeoPar written to ROOT file version: 1  
[INFO ] *** PndEmcDigiPar written to ROOT file version: 1  
[INFO ] *** PndEmcDigiNonuniformityPar written to ROOT file version: 1  
[INFO ] *** FairBaseParSet written to ROOT file version: 1  
[INFO ] *** PndMultiFieldPar written to ROOT file version: 1  
[INFO ] *** PndGeoPassivePar written to ROOT file version: 1
```

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

PndEmcGeoPar	Emc Geometry Parameters
PndEmcDigiPar	Emc Digitalization Parameters
PndEmcDigiNonuniformityPar	Emc Nonuniformity Parameters
FairBaseParSet	class for parameter io
PndMultiFieldPar	Multiple Field parameter container
PndTransPar	Trans. Field parameter container
PndDipole1Par	Dipole Field parameter container
PndDipole2Par	Dipole Field parameter container
PndSolenoid1Par	Solenoid 1st region parameter container
PndSolenoid2Par	Solenoid 2nd region parameter container
PndSolenoid3Par	Solenoid 3rd region parameter container
PndSolenoid4Par	Solenoid 4th region parameter container
PndGeoPassivePar	Passive Geometry Parameters

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

```

run id
  container          1st-inp  2nd-inp  output
run: 1379084142
  PndEmcGeoPar      1379084142  -1      1
  PndEmcDigiPar      1      -1      1
  PndEmcDigiNonuniformityPar  1379084142  -1      1
  FairBaseParSet    1379084142  -1      1
  PndMultiFieldPar  1379084142  -1      1
  PndTransPar       1379084142  -1      0
  PndDipole1Par     1379084142  -1      0
  PndDipole2Par     1379084142  -1      0
  PndSolenoid1Par   1379084142  -1      0
  PndSolenoid2Par   1379084142  -1      0
  PndSolenoid3Par   1379084142  -1      0
  PndSolenoid4Par   1379084142  -1      0
  PndGeoPassivePar  1379084142  -1      1

```

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

first Input:

Ascii I/O /Users/spataro/apr13/pandaroot/macro/params/emc.par is open

detector I/Os: FairGenericParlo

second input: none

output:

OBJ: FairParRootFile simpparams.root : 0 at: 0x7fabe99ba3b0

Root file I/O simpparams.root is open

detector I/Os: FairGenericParlo

```

**** GTRIGI: IEVENT= 1 IDEVT= 1 Random Seeds = 4357 0
[INFO ] FairPrimaryGenerator: (Event 1) 1 primary tracks from vertex (0.000000, 0.000000,
0.000000 ) with beam gradient (0.000000, 0.000000) Event Time = 0.000000 (ns)
POINT EXECUTION *****
**** GTRIGI: IEVENT= 2 IDEVT= 2 Random Seeds = 4357 0
[INFO ] FairPrimaryGenerator: (Event 2) 1 primary tracks from vertex (0.000000, 0.000000,
0.000000 ) with beam gradient (0.000000, 0.000000) Event Time = 0.000000 (ns)
POINT EXECUTION *****
**** GTRIGI: IEVENT= 3 IDEVT= 3 Random Seeds = 4357 0
[INFO ] FairPrimaryGenerator: (Event 3) 1 primary tracks from vertex (0.000000, 0.000000,
0.000000 ) with beam gradient (0.000000, 0.000000) Event Time = 0.000000 (ns)
POINT EXECUTION *****
**** GTRIGI: IEVENT= 4 IDEVT= 4 Random Seeds = 4357 0
[INFO ] FairPrimaryGenerator: (Event 4) 1 primary tracks from vertex (0.000000, 0.000000,
0.000000 ) with beam gradient (0.000000, 0.000000) Event Time = 0.000000 (ns)
POINT EXECUTION *****
**** GTRIGI: IEVENT= 5 IDEVT= 5 Random Seeds = 4357 0
[INFO ] FairPrimaryGenerator: (Event 5) 1 primary tracks from vertex (0.000000, 0.000000,
0.000000 ) with beam gradient (0.000000, 0.000000) Event Time = 0.000000 (ns)
POINT EXECUTION *****
**** GTRIGI: IEVENT= 6 IDEVT= 6 Random Seeds = 4357 0
[INFO ] FairPrimaryGenerator: (Event 6) 1 primary tracks from vertex (0.000000, 0.000000,
0.000000 ) with beam gradient (0.000000, 0.000000) Event Time = 0.000000 (ns)
POINT EXECUTION *****
**** GTRIGI: IEVENT= 7 IDEVT= 7 Random Seeds = 4357 0
[INFO ] FairPrimaryGenerator: (Event 7) 1 primary tracks from vertex (0.000000, 0.000000,
0.000000 ) with beam gradient (0.000000, 0.000000) Event Time = 0.000000 (ns)

```

POINT EXECUTION *****

**** GTRIGI: IEVENT= 8 IDEVT= 8 Random Seeds = 4357 0

[INFO] FairPrimaryGenerator: (Event 8) 1 primary tracks from vertex (0.000000, 0.000000, 0.000000) with beam gradient (0.000000, 0.000000) Event Time = 0.000000 (ns)

POINT EXECUTION *****

**** GTRIGI: IEVENT= 9 IDEVT= 9 Random Seeds = 4357 0

[INFO] FairPrimaryGenerator: (Event 9) 1 primary tracks from vertex (0.000000, 0.000000, 0.000000) with beam gradient (0.000000, 0.000000) Event Time = 0.000000 (ns)

POINT EXECUTION *****

**** GTRIGI: IEVENT= 10 IDEVT= 10 Random Seeds = 4357 0

[INFO] FairPrimaryGenerator: (Event 10) 1 primary tracks from vertex (0.000000, 0.000000, 0.000000) with beam gradient (0.000000, 0.000000) Event Time = 0.000000 (ns)

POINT EXECUTION *****

=====

PndEmcHitProducer::FinishTask

Read points # 6067

Produc hits# 265, threshold# 1e-06

Hits above threshhod#192

RealTime=8.087632 seconds, CpuTime=5.430000 seconds

(int)52

root [1]

The same with Linux.

In reality before I had commented out PndEmc. This is the reason why I was not seeing such effect from PndEmc but from PndEmcHitProducer.