Status on SDT simulation

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Update

- Try to run the CEPCSW, by following the README

- Have a look the CEPCSW structure and added small test changes in the code

- A quick confirmation of the tracks（by making a plot）

Procedure

- Run the example script

-- Examples/options/helloalg.py

-- Examples/options/tut_detsim.py

➢ As described in the Readme,

> cd ./build/

> ./run/gaudirun.py ../Examples/options/tut_detsim.py

- For trials, change "tut_detsim.py" (execution script) and/or "ExampleAnaElemTool.cpp"

- Geometry option :

-- geometry_option = "CepC_v4-onlyVXD.xml"

-- geometry_option = "CepC_v4-onlyTracker.xml"

(./Detector/DetCEPCv4/compact/***.xml)

try to swap the setting

Input Data

```
# gun = GtGunTool("GtGunTool")
# gun.Particles = ["pi+"]
# gun.Energies = [100.] # GeV

# gun.ThetaMins = [] # rad; 45deg
# gun.ThetaMaxs = [] # rad; 45deg

# gun.PhiMins = [] # rad; 0deg
# gun.PhiMaxs = [] # rad; 360deg

stdheprdr = StdHepRdr("StdHepRdr")
stdheprdr.Input = "/cefs/data/stdhep/CEPC250/2fermions/E250.Pbhabha.e0.p0.whizard195/bhabha.e0.p0.00001.stdhep"

# lciordr = SLCIORdr("SLCIORdr")
# lciordr.Input = "/cefs/data/stdhep/lcio250/signal/Higgs/E250.Pbbh.whizard195/E250.Pbbh_X.e0.p0.whizard195/Pbbh_X.e0.p0.00001.slcio"

# hepmcrdr = HepMCRdr("HepMCRdr")
# hepmcrdr.Input = "example_UsingIterators.txt"

genprinter = GenPrinter("GenPrinter")

genalg = GenAlgo("GenAlgo")
# genalg.GenTools = ["GtGunTool"]
genalg.GenTools = ["StdHepRdr"]
# genalg.GenTools = ["StdHepRdr", "GenPrinter"]
# genalg.GenTools = ["SLCIORdr", "GenPrinter"]
# genalg.GenTools = ["HepMCRdr", "GenPrinter"]
```
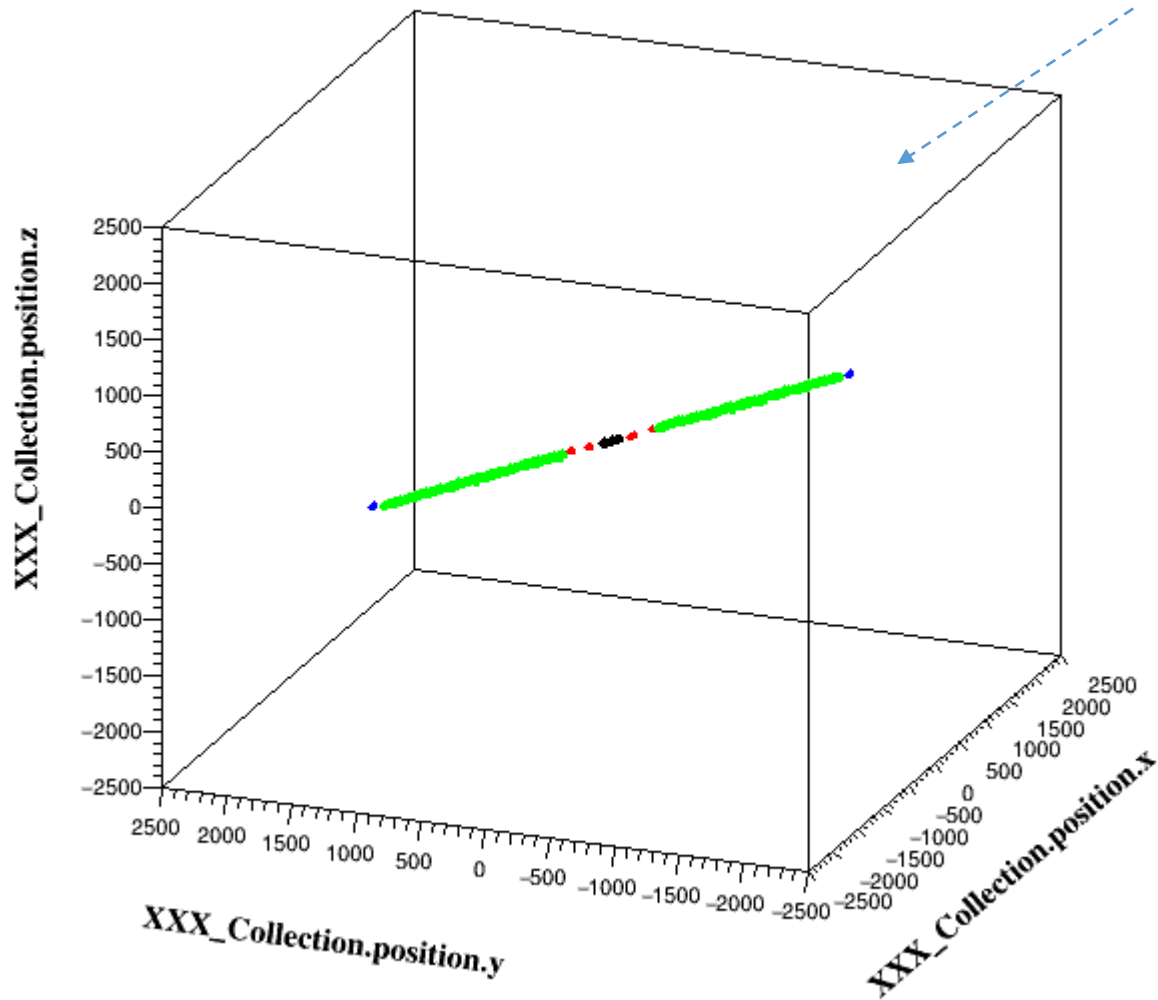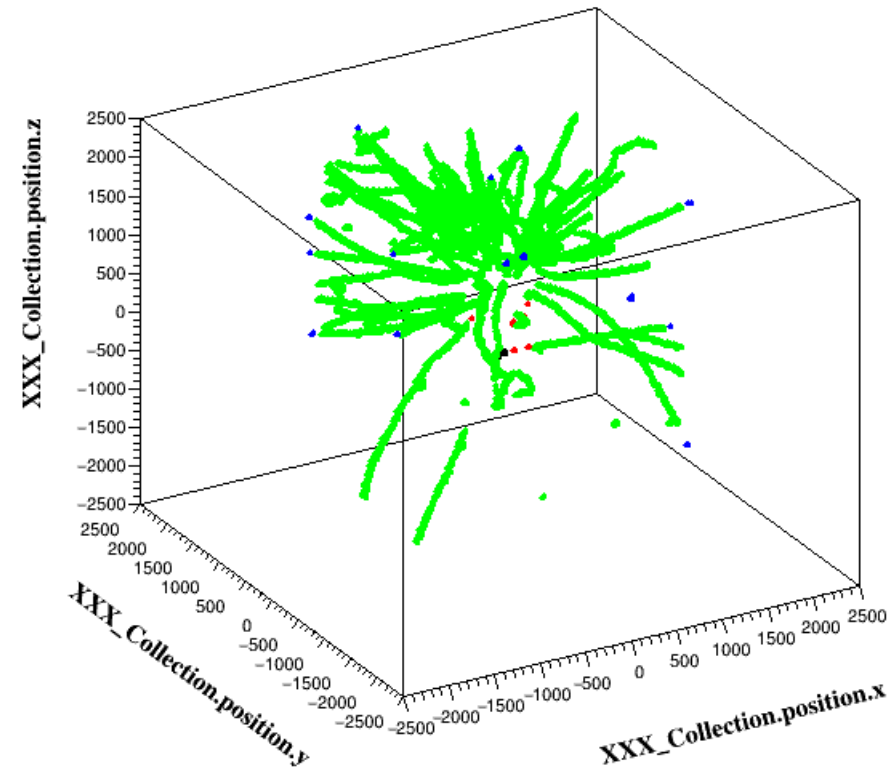
particle "gun" setting ?

change sample to
$e^+e^- -> \mu^+\mu^-$
(@ 240 GeV)

particle "gun" setting ?

Check the hit position

Black: VXD, Red: SIT, Green: TPC, Blue: SET

Hit Position（an example event）

Hit Position（another event）

Next step

To estimate the IP/momentum resolution of the tracker

- Conversion (fitting) : detector hits → track(s)

  -- is there any module(s) in the CEPCSW for that ?

  -- … or refer the code used in the LDT , or

- Need to compare those (with MCparticle)

  -- particle gun might be suitable for the first step