

# Software Coordinators Report

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ILD SW&Ana Meeting, Mar 21, 2018

- Generator
- Simulation
- Reconstruction
- Monte Carlo Production

- MB is working on GuineaPig setup for pair simulation (new beam parameters 250 GeV)
  - found differences to old files created by T.Hartin and A.Schuetz
  - tracked down to configuration parameters:
    - setting of beamspread, beam spot size
    - believes to have correct settings
    - will create pair-bg simulation files soon
- has created see-able pairs file (500 GeV) w/ all events
  - put this to the Grid for AM to simulate for the production



- bug in *ddsim/DDG4* resulted in particles with **more than one parent** (assigned to grand parents)
  - fixed in DD4hep HEAD (M.Frank)
- also fixed inconsistent *end-points* of short lived particles/resonances (A.Sailer)
  - had caused an intermediate bug that prevented the simulation (**fixed**)
- missing implementation of QD0 (and other downstream items) in simulation models
  - fixed by DJ -> see talk in this meeting
- fixed step limiting in *ddsim* (MF)

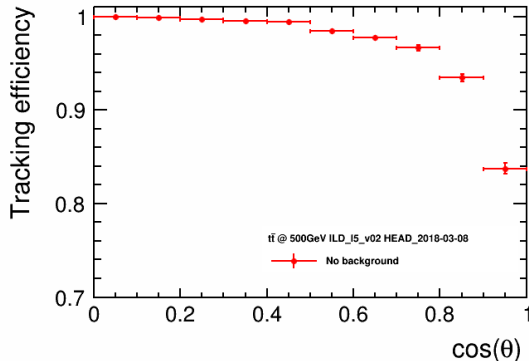
- additional models for background studies:
  - **same detector geometry as v02 models**

model	B-Field	anti-DID	energy (fwd magnets)
ILD_I(s)5_v06	solenoid field map 3.5 (4) T	yes	500 GeV
ILD_I(s)5_v05	solenoid field map 3.5 (4) T	yes	250 GeV
ILD_I(s)5_v04	solenoid field map 3.5 (4) T	no	500 GeV
ILD_I(s)5_v03	solenoid field map 3.5 (4) T	no	250 GeV

- times o1, o2, o3, o4 reconstruction options
  - might not really need to create all of these variants !?
  - o1 might be enough for dedicated *background* and *tracking* studies

- fixed issue and improved *dEdxProcessor*
  - see talk U.Einhaus
- started to implement *BeamCalReconstruction*
  - see talk R.Ete
- fixed *LCFIPlus* flavor tag for new simulation
  - adopted to smearing of z-position of vertex
  - still working on issue w/ vertex mass
- *missing* processor to write out TOF information for clusters
  - FG

- major issue observed in tracking performance for recent version: HEAD-2018-03-08
  - very low *tracking efficiency*
  - degraded *pull distributions*



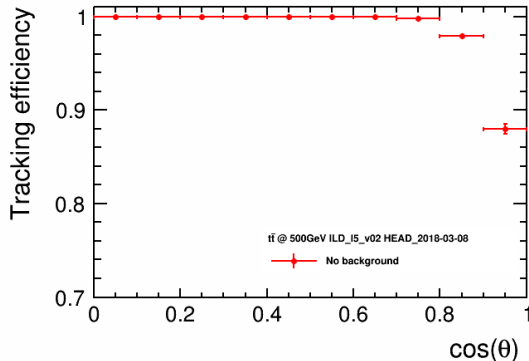
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- tracked down to new Geant4 field stepper

```
-SIM.field stepper = "HelixSimpleRunge"  
+SIM.field stepper = "G4ClassicalRK4"  
## Geant4 default !!
```

- under investigation ...







- created new production directory:

```
/ilc/prod/ilc/mc-opt-2
```

- with *tape backend* at DESY
- to be used for optimization production
- test and implementation in *ILCDirac* pending

- many issues identified at Ichinoseki meeting addressed
- some new issues found (and partly fixed)
- need to put everything together and start to prepare a **pre-production release**

will need one additional (smaller) test production

- verify that all major performance benchmarks are OK
- try to get the production going **ASAP**