

*Physics Channels*

*Some Issues*

*Summary*

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# *Software version & Physics Channels*

Simulation: **ILD\_15\_v02**  
Reconstruction : **ILD\_15\_o2\_v02**

## **E250 GeV, no overlay**

I106485, I106486	higgs
I106551, I106552	WW_hadronic
I106573, I106574	ZZ_hadronic
I106575, I106576	ZZ_semileptonic
I106577, I106578	WW_semileptonic
I106607, I106608	Z_hadronic

# *MC-Production*

- ❑ **ILCDIRAC ~ 61000 jobs**
- ❑ **> 11,3 millions events , split 200 events /job**  
→ reasonable SIM, REC file sizes (~500-800 MB), DST(~8-15 MB)
- ❑ **results saved at CERN-SRM & IN2P3-SRM (partially)**
- ❑ **LFN:**  
**/ilc/user/k/kurca/grid/ilc/prod/ilc/mc-dbd/MyProd\_v02-00/E250-TDR/higgs**  
resp. ... /WW\_h, /WW\_sl, /ZZ\_h, /ZZ\_sl, /ZZ\_h
- ❑ **DST-files not merged yet ....**

# Simulation Issue

- **seen the same issue as reported already by Akiya:**  
in semileptonic tau decay channels

```
Sensitive type: Geant4ScintillatorCalorimeterAction----- EEEE ----- G4Exception-
START ----- EEEE -----*** G4Exception : had005    issued by :
G4HadronicProcess::PostStepDoItIn
/cvmfs/ilc.desy.de/sw/x86_64_gcc49_sl6/geant4/10.03.p02/source/processes/hadronic/manag
ement/src/G4EnergyRangeManager.cc, line 129: ==> GetHadronicInteraction: No Model
foundTarget element HYDROGEN Z= 1 A= 1Unrecoverable error in the method
ChooseHadronicInteraction of pi-InelasticTrackID= 127014 ParentID= 15 pi-
Ekin(GeV)= 2.92368e+20; direction= (-0.846332,0.200693,0.493402)Position(mm)= (-
2.00131,0.475711,1.1311); material beamPhysicalVolume
<av_47_impr_1_tube_IPInnerTube_pv_0> No HadronicInteraction found out*** Fatal
Exception *** core dump ***----- EEEE ----- G4Exception-END ----- EEEE -----
*** G4Exception: Aborting execution ***./DDSim_ILCSoft-02-00_gcc49_Run_1.sh: line
10: 25802 Aborted
```

# Reconstruction Issue

```
[ VERBOSE "MyPfoAnalysis"] PfoAnalysis::end() MyPfoAnalysis processed 195 events in 1 runs
2018-05-14 14:04:09 UTC dirac-jobexec/MarlinAnalysis INFO: Status after the application execution is:
134
2018-05-14 14:04:09 UTC dirac-jobexec/MarlinAnalysis ERROR:
=====
StdError:
2018-05-14 14:04:09 UTC dirac-jobexec/MarlinAnalysis ERROR: Info in
<TGeoManager::TGeoManager>: Geometry world, Detector Geometry createdInfo in
<TGeoManager::SetTopVolume>:
Top volume is world_volume. Master volume is world_volumeInfo in <TGeoNavigator::BuildCache>: --
- Maximum geometry depth set to 100Info in <TGeoManager::CheckGeometry>: Fix
ing runtime shapes...Info in <TGeoManager::CheckGeometry>: ...Nothing to fixInfo in
<TGeoManager::CloseGeometry>: Counting nodes...Info in <TGeoManager::Voxelize>: Voxelizin
g...Info in <TGeoManager::CloseGeometry>: Building cache...Info in <TGeoManager::CountLevels>:
max level = 5, max placements = 440Info in <TGeoManager::CloseGeometry>: 70918
3 nodes/ 9221 volume UID's in Detector GeometryInfo in <TGeoManager::CloseGeometry>: -----
--modeler ready-----Info in <TGeoShapeAssembly::DistFromInside>
: Cannot compute distance from inside the assembly (but from a component)Info in
<TGeoShapeAssembly::DistFromInside>: Cannot compute distance from inside the assembly (but f
rom a component)*** glibc detected *** Marlin: corrupted double-linked list: 0x000000002a0dc550
***===== Backtrace: =====/lib64/libc.so.6[
```

# Summary

- **MC-production for SDHCAL studies @ 250 GeV done**  
Simulation: ILD\_15\_v02  
Reconstruction : ILD\_15\_o2\_v02
- **SIM, DST, REC (partially) available @**  
CERN-SRM, IN2P3-SRM
- **Simulation problem : geant4**  
rerunning with different random number usually succeeded
- **Reconstruction problem: geometry issue?**  
~ mainly Z<sub>qq</sub> ~ 0.5 % of jobs; ZZ<sub>s1</sub> ~0.3% ; others ~0.02%  
in very few cases rerunning succeeded