

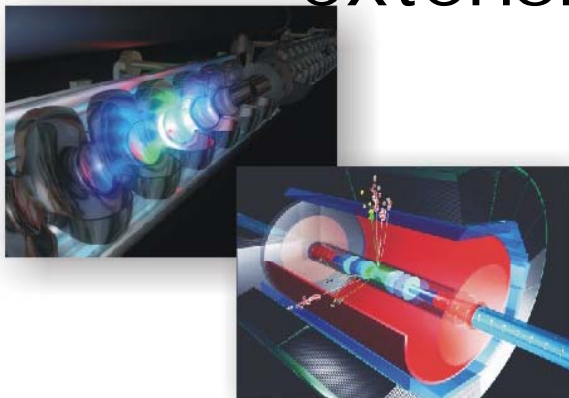
# Why should we use SLIC for the simulation

- What is it?

SLIC: Simulator for the Linear Collider: <http://lcsim.org/software/slic/>

- Available on ILCSIM

- Geant 4 simulation with useful extension:





# LCDD

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- Linear Collider detector description xml based: an example ecal.lcdd is attached to the agenda representing a calorimeter of 200 layers of lead glass and scintillator. <http://lcsim.org/software/lcdd/>
- Can be visualized with root (geometry) or Wired/JAS (full event display) <http://jas.freehep.org/jas3/> <http://confluence.slac.stanford.edu/display/ilc/lcsim+Getting+Started>
- Easy to implement read out segmentation (sensitive detectors) example has 1 cm readout cells for both scintillator and lead glass.
- No recompiling necessary when geometry changes.
- Easy to integrate 'our' calorimeter with existing detector concepts e.g. What happens when we replace the SID calorimeter with a dual readout calorimeter.



# LCIO

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- Persistency framework for linear collider studies <http://lcio.desy.de/>
- Can be browsed/analyzed within jas.
- Lcsim.org analysis framework (JAVA based)  
<http://confluence.slac.stanford.edu/display/ilc/lcsim+Tutorials>



# SimDist

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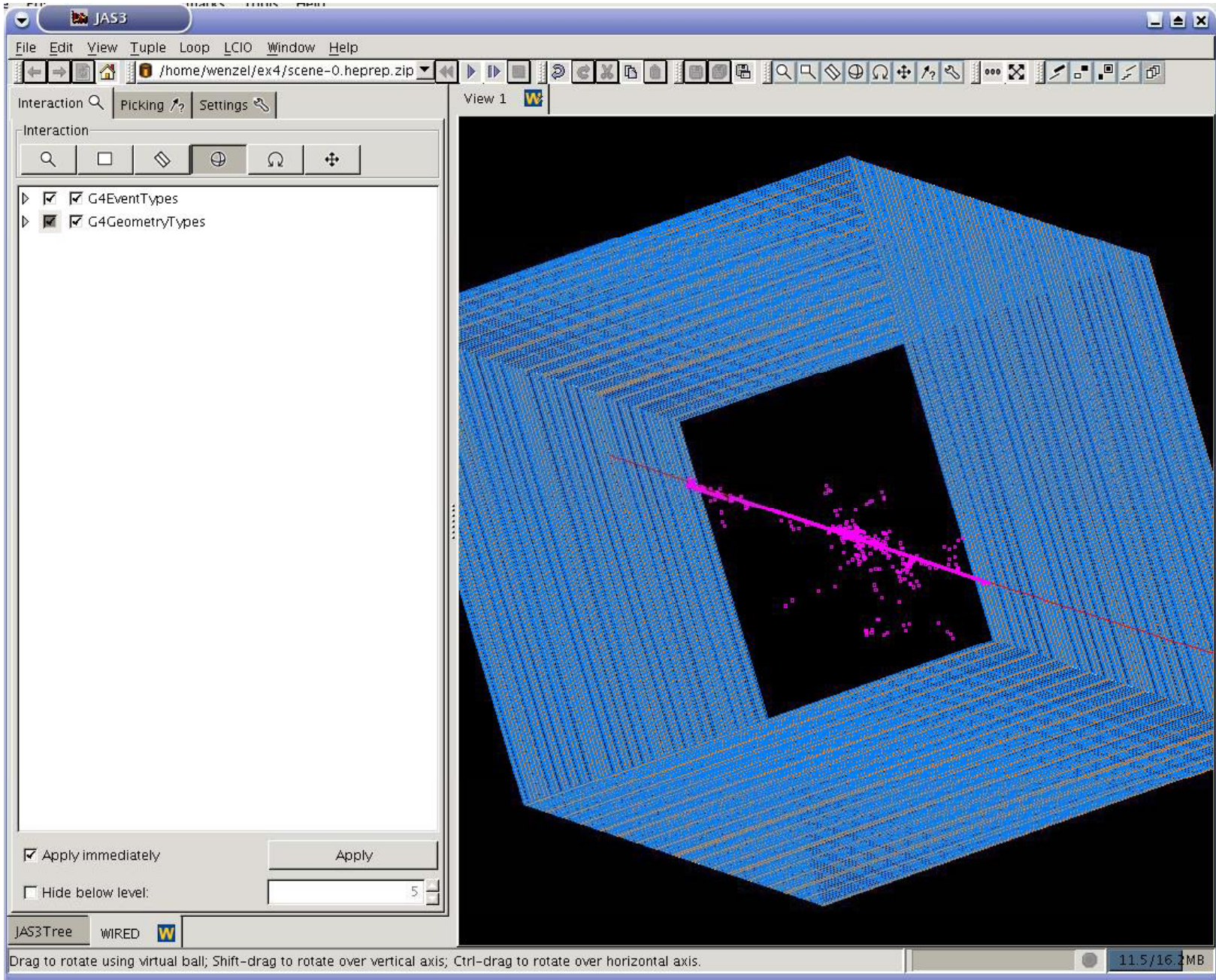
- <http://confluence.slac.stanford.edu/display/ilc/Simulation+Software+Distribution>
- Just run one script to compile and link.



## Miscellaneous:

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- Statically linked: easy to run on the grid/batch farm. I have scripts available seems very stable.
- Easy command line interface + Geant 4 macros.
- Some of the tools (e.g. interface with random generator that we are using were taken from SLIC already)



March 20<sup>th</sup> 2007

Hans Wenzel



JAS3

File Edit View Tuple Loop LCIO Window Help

ldglass.slcio

Interaction Picking Settings

Interaction

View 1 LCSim Event x

Run:0 Event: 0

Collection: CerenHits size: 486 flags:e0000000

	id	raw energy ...	corrected e ...	x (mm)	y (mm)	z (mm)	time (ns)
MCPHits	0	.0092065	NaN	5.0000	-5.0000	-876.00	.40574
MCPParticle	0	.0047376	NaN	5.0000	-5.0000	-866.00	.43769
MCPParticleEndl	0	.0052708	NaN	5.0000	-5.0000	-856.00	.47049
ScintHits	0	.0044950	NaN	5.0000	-5.0000	-846.00	.50883
MCPParticleTree	0	.0039928	NaN	5.0000	-5.0000	-836.00	.54265
	0	.0066100	NaN	5.0000	-5.0000	-826.00	.57307
	0	.0056382	NaN	5.0000	-5.0000	-816.00	.60482
	0	.0048611	NaN	-5.0000	-5.0000	-806.00	.64098
	0	1.2113E-4	NaN	15.0000	5.0000	-616.00	1.4821
	0	5.8311E-5	NaN	-5.0000	15.0000	-616.00	1.3934
	0	1.0274E-4	NaN	-45.0000	45.0000	-686.00	1.1286
	0	.0014375	NaN	-25.0000	35.0000	-716.00	.99922
	0	1.1617E-4	NaN	-25.0000	-5.0000	-736.00	1.0324
	0	2.2700E-4	NaN	-35.0000	5.0000	-726.00	.96424
	0	2.1749E-4	NaN	-15.0000	15.0000	-766.00	.82476
	0	1.0714E-4	NaN	-15.0000	5.0000	-766.00	.80195
	0	.0075285	NaN	-5.0000	5.0000	-806.00	.63779
	0	8.8005E-5	NaN	-135.00	35.0000	-546.00	1.8968
	0	1.2617E-4	NaN	-125.00	35.0000	-546.00	1.8969
	0	8.0509E-5	NaN	-145.00	15.0000	-526.00	1.7978
	0	3.3811E-4	NaN	-135.00	15.0000	-516.00	1.7664
	0	4.6271E-4	NaN	-45.0000	35.0000	-636.00	1.2635
	0	9.3142E-4	NaN	-35.0000	15.0000	-666.00	1.1318
	0	8.8005E-5	NaN	-25.0000	-25.0000	-756.00	.98365
	0	2.5833E-4	NaN	-35.0000	-35.0000	-756.00	.98395
	0	.0013176	NaN	5.0000	-15.0000	-746.00	.85486
	0	.0015914	NaN	5.0000	-15.0000	-796.00	.69301
	0	2.2330E-4	NaN	15.0000	5.0000	-806.00	.80644
	0	8.7041E-5	NaN	-5.0000	-5.0000	-796.00	.74285
	0	2.0066E-4	NaN	-5.0000	-15.0000	-796.00	.70446
	0	2.4935E-4	NaN	-5.0000	-35.0000	-656.00	1.2483
	0	.0016180	NaN	5.0000	-45.0000	-646.00	1.2016
	0	1.5861E-5	NaN	5.0000	-35.0000	-646.00	1.2811
	0	6.9275E-5	NaN	5.0000	-15.0000	-646.00	1.2812
	0	2.8915E-4	NaN	-5.0000	-145.00	-506.00	1.9693
	0	6.3684E-5	NaN	-5.0000	-135.00	-496.00	1.9214
	0	1.9787E-5	NaN	-15.0000	-115.00	-496.00	1.8681
	0	1.9101E-4	NaN	-25.0000	-75.0000	-506.00	1.7134
	0	6.0643E-4	NaN	-5.0000	-65.0000	-526.00	1.6286
	0	9.9158E-4	NaN	5.0000	-75.0000	-546.00	1.5328
	0	8.8005E-5	NaN	-5.0000	-125.00	-476.00	1.9753
	0	1.7787E-4	NaN	-15.0000	-135.00	-476.00	1.9754
	0	4.5877E-4	NaN	25.0000	-105.00	-466.00	1.8399
	0	.0034864	NaN	5.0000	-15.0000	-816.00	.60736

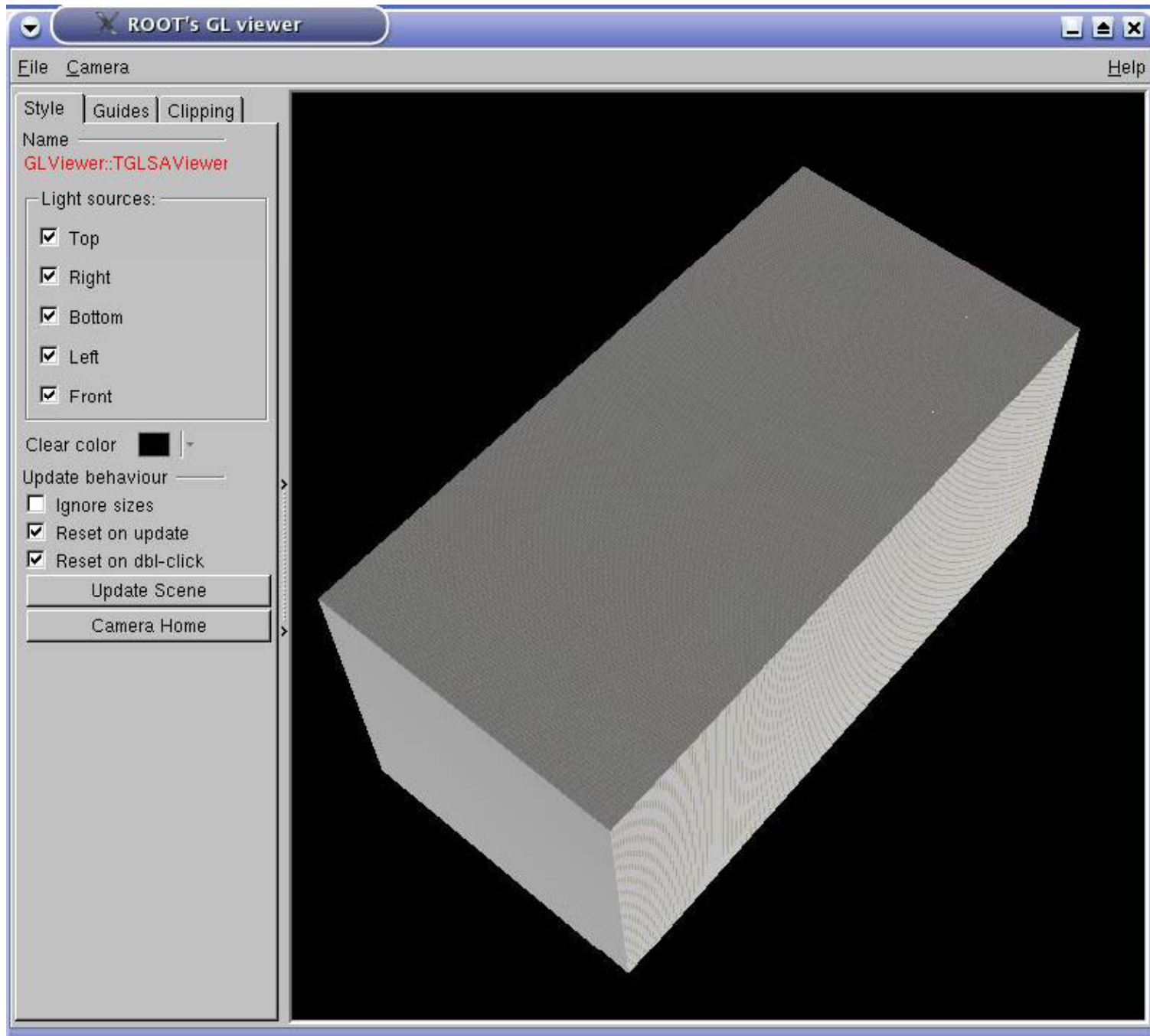
Apply immediately

Hide below level:

JAS3Tree WIRED W

Analyzed 1 records in 6826ms

15.1/16.2MB



March 20<sup>th</sup> 2007





## What's next:

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- Modify sensitive detector to score only Cerenkov light in lead glass like we are doing now in G4Stackingaction.
- Add root analysis.