
Subject: New SLIC and LCDD Releases
Posted by [jeremy](#) on Wed, 07 Sep 2005 21:00:29 GMT
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I have release two packages today.

SLIC Release v1r10p0

http://www.lcsim.org/software/slic/release_notes_v1r10p0.htm I

LCDD Release v1r8p0

http://www.lcsim.org/software/lcdd/release_notes_v1r8p0.html

Subject: Range Cuts in SLIC
Posted by [karyotak](#) on Thu, 08 Sep 2005 14:10:14 GMT
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Hi all,

I run SLIC and try to find out the range cuts for gammas
Running dumpRegion I find this:

Region DefaultRegionForTheWorld

Materials : Air Tungsten G10 Silicon Steel235 Iron PyrexGlass RPCGasDefault Polystyrene
Beryllium Aluminum

Production cuts : gamma 1 mm e- 1 mm e+ 1 mm

Region TrackingRegion

Materials : Air CarbonFiber Rohacell31 Beryllium PolystyreneFoam Aluminum G10 Copper PEEK
Epoxy Silicon Kapton Titanium

Production cuts : gamma 1 cm e- 1 cm e+ 1 cm

Does the first region correspond to the Silicon of the calorimeter ?? In this case isn't it too big ??

I can change it by /run/setCut or setCutForRegion. The attached plot shows the energy deposited by 1 GeV gammas at 90 degrees in the 30 layers of Si using cdcaug05 geometry. I think this behavior is well known.

Yannis

File Attachments

1) [Eraw.png](#), downloaded 1874 times

Subject: [Q&A]Running SLIC at SLAC (Linear Collider): Extrated from email communication

Posted by [wpark](#) on Fri, 11 Nov 2005 02:49:49 GMT

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Hello Woochun,

Jeremy is on vacation for the next week, so I will answer your question. I would strongly advise you, however, to post future questions to the forum at <http://forum.linearcollider.org>. That way they can be seen by a wider array of people who could answer your question in a timely fashion. Also, the topic is then available to others who might experience a similar situation. You should never change the lccd file since those changes are only communicated to slic. Any interaction with the output slcio file later by org.lcsim code will only communicate with the compact.xml file. Also, any changes you make, no matter how trivial (such as changing the magnetic field value), should cause you to rename the detector. You will then need to provide an alias for this new detector which points to the location of your new files.

Hope this helps,

Norman

From: Woochun Park [mailto:wpark@slac.stanford.edu]

Sent: Thu 11/10/2005 4:18 PM

To: McCormick, Jeremy

Cc: Graf, Norman; Johnson, Tony S.

Subject: RE: FW: [confluence] Comment added to: Running SLIC at SLAC (Linear Collider)

Hi, Jeremy,

I manually replace lcsim.jar and GeomConverter.jar following your instructions. In some reason, the file size is different. After replacing them, I can see as you saw. Thanks a bunch.

I appreciate your help and I progress some which brought more questions. I present my questions at

<http://hep.physics.sc.edu/~wpark/lc/question2Jeremy111005.pdf>

and please help me to understand it.

Thanks, Woochun

On Thu, 10 Nov 2005, McCormick, Jeremy wrote:

> Hi, Woochun.

>

> Assuming you have command-line CVS and Java/Maven installed, this is the basic procedure to install the JARs from scratch on your XP laptop:

>

> export CVSROOT=:pserver:anonymous@cvs.freehep.org:/cvs/lcd

> cvs co GeomConverter

> cd GeomConverter

> maven jar:install

> cd ..

> cvs co lcsim

> cd lcsim

> maven jar:install jas:install

>

> Now confirm that you see lcsim.jar and GeomConverter.jar at

>

> C:\Documents and Settings\wpark\.JAS3\extensions

>

> if "wpark" is your Windows login name.

>

> Also make sure that no other versions of org.lcsim or GeomConverter JARs are hanging around in this dir, as it may cause conflicts.

>

> I just rebuilt using this procedure on my Windows XP laptop, and your file appears okay (just 1 event). I am using JAS3 0.8.2. You also need the WIRED4, WIRED4 Base Library, and HepRep plugins installed.

>

> Is there an additional traceback message that you can find, maybe under the "Details" button of the error box? The one you gave me is generic and occurs whenever there is an exception in the event processing loop.

>

> I'm not at SLAC until Nov 17th, so maybe Norman Graf or Tony Johnson could help you out one-on-one if you have additional problems or questions.

> _____

>
>
> Jeremy McCormick <jeremym@slac.stanford.edu>
> Stanford Linear Accelerator Center
> office phone: 650-926-8794
> cell phone: 415-385-8282
>
>
>
> -----Original Message-----
> From: Woochun Park [mailto:wpark@slac.stanford.edu]
> Sent: Wed 11/9/2005 1:26 PM
> To: McCormick, Jeremy
> Subject: Re: FW: [confluence] Comment added to: Running SLIC at SLAC (Linear Collider)
>
> Dear Jeremy,
>
> I appreciate your prompt answer. Also, lcio-dumpevent works fine
> and it convince me my generation works.
>
> But, still I am not able to look at the LCIO file using WIRED4 and
> the LCSim Event Browser. I am running JAS3 in window XP. I looked at
> plugin manager to verify the version of org.lcsim and it's 0.9. I also
> followed your instruction in "Installing Custom JARs into JAS3" in noric
> area. I found that "org.lcsim" version from there is also 0.9. I also
> found that Geomconverter version is 0.6 which is not able to check in JAS3
> window XP.
>
> I also tried to remove org.lcsim and reinstall it but that doesn't
> help me. The most recent version of JAS3 is still 0.8.2 (newer than
> v0.8.2rc1).
>
> Maybe, I need to wait for your new version, right?
>
> -----
> Question::
>
> Currently, we are trying to do track finding and we need track
> hits information. Your given lcio-dumpevent works well for this purpose.
> I understand that we need to use x,y,z coordinate from pixel and tracker.
> But, I don't understand what to do with dEdx and time information. Are we
> going to use these information to do track finding? Then, could you

> explain how? If hits are from the same track, then is there correlation in
> time information or dEdx?
>
> I appreciate your comments very much.
>
> Cheers, Woochun
>
>
>
>
>
> On Wed, 9 Nov 2005, McCormick, Jeremy wrote:
>
>> Hi.
>>
>> I am able to look at the LCIO file using WIRED4 and the LCSim Event Browser, and no error
occurs.
>>
>> Your problem most likely results from not having the "bleeding edge" versions of our
development tools, e.g. org.lcsim and its geometry package.
>>
>> To fix, see these instructions
>>
>> <http://confluence.slac.stanford.edu/display/ilc/Building+org.lcsim+software>
>>
>> under "Installing Custom JARs into JAS3".
>>
>> There were some changes to the event model recently, and the default JAS3 plugin versions
were not updated. I'll make sure a new release happens soon to fix this.
(Sorry for the pain!)
>>
>> Also, you can verify valid LCIO event output from noric as follows:
>>
>> `lcio-dumpevent MyLcioFile.slcio 0 0`
>>
>> It will dump info for run 0, event 0.
>>
>> Let me know if you get it working.
>>
>> _____
>>
>> Jeremy McCormick <jeremym@slac.stanford.edu>

> > Stanford Linear Accelerator Center
> > office phone: 650-926-8794
> > cell phone: 415-385-8282
> >
> >
> >
> > -----Original Message-----
> > From: confluence@slac.stanford.edu [mailto:confluence@slac.stanford.edu]
> > Sent: Tue 11/8/2005 5:57 PM
> > To: McCormick, Jeremy
> > Subject: [confluence] Comment added to: Running SLIC at SLAC (Linear Collider)
> >
> > Comment Added : ilc <<http://confluence.slac.stanford.edu/display/ilc>> : Re: Running SLIC at SLAC
> > < <http://confluence.slac.stanford.edu/display/ilc/Running+SLIC+at+SLAC?focusedCommentId=6962#comment-6962>>
> >
> > Running SLIC at SLAC < <http://confluence.slac.stanford.edu/display/ilc/Running+SLIC+at+SLAC?focusedCommentId=6962#comment-6962>> commented on by Anonymous (Nov 08, 2005).
> >
> > Comment:
> >
> >
> > Hi, Jeremy,
> > I tested it in SLAC noric. I followed "Batch job submission" and
> > output file was generated. But, it's not readable by JAS3. My JAS3
> > version is v0.8.2 and slcio file is at
> > http://www.slac.stanford.edu/~wpark/sidaug05_4_Zh120-0-1.slc.io
> > < http://www.slac.stanford.edu/~wpark/sidaug05_4_Zh120-0-1.slc.io>
> > Error message is as follows:
> > -----
> > org.freehep.record.source.NoSuchRecordException
> > at org.lcsim.util.loop.LCIOEventSource.getCurrentRecord(LCIOEventSource.java:45)
> > at hep.wired.heprep.plugin.WiredPlugin\$LoopHandler.loopEnded(WiredPlugin.java:536)
> > at org.freehep.jas.extensions.recordloop.InteractiveRecordLoop.
endLoop(InteractiveRecordLoop.java:477)
> > at org.freehep.jas.extensions.recordloop.RecordLoopManager\$End.
run(RecordLoopManager.java:251)
> > at java.awt.event.InvocationEvent.dispatch(Unknown Source)
> > at java.awt.EventQueue.dispatchEvent(Unknown Source)
> > at org.freehep.jas.util.waitcursor.WaitCursorEventQueue.dispatch

```
hEvent(WaitCursorEventQueue.java:47)
> > at java.awt.EventQueue.pumpOneEventForHierarchy(Unknown Source)
> > at java.awt.EventQueue.pumpEventsForHierarchy(Unknown Source)
> > at java.awt.EventQueue.pumpEvents(Unknown Source)
> > at java.awt.EventQueue.pumpEvents(Unknown Source)
> > at java.awt.EventQueue.run(Unknown Source)
> >
> >
> >
> > < http://confluence.slac.stanford.edu/images/border/spacer.gif>
> > Powered by Atlassian Confluence <
http://www.atlassian.com/software/confluence/default.jsp?cli cked=footer> (Version: 1.4.1
Build:#212 Jun 02, 2005) - Bug/feature
request < http://jira.atlassian.com/secure/BrowseProject.jspa?id=10470>
> >
> > Unsubscribe or edit your notifications preferences <
http://confluence.slac.stanford.edu/users/viewnotifications. action>
> >
> >
> >
>
>
>
```

Subject: More Question::Re: [Q&A]Running SLIC at SLAC (Linear Collider):
Extrated from email communicatio
Posted by [wpark](#) on Fri, 11 Nov 2005 02:56:37 GMT
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Hi, Norman,

So, if I still want to change lcdd file, e.g., no magnetic field applied, is it still allowed?

If so, I will rename the detector and provide an alias for this new detector which points to the location of your new files. Then, how can I let my org.lcsim notify my new definition of detector? Should I do some kind of cvs ci ??

Thanks, again.

Cheers, Woochun

Subject: Re: More Question::Re: [Q&A]Running SLIC at SLAC (Linear Collider):
Extrated from email communic
Posted by [NormanGraf](#) on Fri, 11 Nov 2005 04:17:05 GMT
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Hello Woochun,

You should not modify the lcdd file. Make all necessary changes in the compact.xml file and use the GeomConverter utilities to create the lcdd file.

Once you have defined your new detector and assigned it a name, that name will be stored in the event header. When you later process the slcio file using code in org.lcsim, this detector name is used to look up the geometrical description plus whatever other files are needed for the event display or analysis. How it does so is detailed at <http://confluence.slac.stanford.edu/display/ilc/Conditions+Database+Overview>. Specifically, read the section on "Detector Alias Files". Your alias file should look something like:

```
sdjan03: file:/path/to/my/sdjan03/
```

The compact.xml file describing your geometry should be in this directory. That file, and not the lcdd file, is what provides the information to the org.lcsim analysis software.

Norman

Subject: Re: More Question::Re: [Q&A]Running SLIC at SLAC (Linear Collider):
Extrated from email communic
Posted by [wpark](#) on Mon, 14 Nov 2005 06:06:27 GMT
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Dear Norman,

Your comments are just clear to me but I have not made it yet.
Let me tell you what I did.

- (1) Modify compact.xml and convert it by GeomConverter. My Detector name is sidaug_0tesla for instance.
- (2) By using slic, I generate an event. By lcio-dumpevent, I verify event-header contains sidaug_0tesla as a detector name.
- (3) I copy and paste compact.xml in c:/Documents and Settings/wpark/.lcsim/detectors/sidaug05_0tesla/

(4) I put alias.properties file in c:/Documents and Settings/wpark/.lcsim/ with sidaug05_0tesla: file:/c:/Documents and Settings/wpark/.lcsim/detectors/sidaug05_0tesla/
(5) I download my slcio file into local and open it with JAS3.

But, it doesn't work for me to read event.

I tried \\ rather than //. I also tried C:/ rather than c/.

It's somewhat confusing what's convention of path expression in windows XP. Maybe, that's the key to figure it out.

I appreciate your help very much in advance.

Cheers, Woochun

Subject: Solved completely with correct path
Posted by [wpark](#) on Mon, 14 Nov 2005 07:35:50 GMT
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Dear Norman,

The case is now resolved after modifying alias.properties as follows:

sidaug05_0tesla: file:C:/Documents and Settings/wpark/.lcsim/detectors/sidaug05_0tesla/

Thanks Norman.

Cheers, Woochun

Subject: Sanity checks on my installation
Posted by [ebenavid](#) on Thu, 08 Jun 2006 22:20:02 GMT
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I would like to do some simple sanity checks to my installation of SLIC to see that it is running correctly. I've recently installed SLIC (from the CVS head) with Jeremy's help on a system with the following configuration:

OS: Scientific Linux 4.3
Compiler: gcc 3.4.5
Geant4 version: 8.0p01
CLHEP version: 1.9.2.2
Xerces-C version: 2.7.0

Everything else from the CVS head (slic, lcio, lcdd, lcphys, gdml)

I'd like to do some simple sanity checks with known data because some of these tools (especially Geant4) are newer than what SLIC has been tested with.

I tried out the SLIC-LCDD tutorial written by Tony Johnson at <https://confluence.slac.stanford.edu/display/ilc/SLIC-LCDD+Tutorial>. I ran the first part of the tutorial (with the HepRep output), and after fixing the mistakes that I saw, I only get one hit.

(If the image does not show up, please see attached file.)

This is a problem because the screen shot on the tutorial shows multiple hits.

The mistakes that I found are:

In ecal.lcdd: Change the 9 to 8 in line 278, so that it reads:
"<positionref ref="ecal_lay8_pos" />"

In vis1.mac: Remove the negative sign in line 9, so that it reads:
"/gps/direction 0 0 1"

I emailed Tony Johnson about this, since he is the author of the tutorial, so that he could tell me if I found all the deliberate bugs.

I like this tutorial, since it has some data analysis and data against which I can compare my results.

I was wondering this:

Is there another bug that I need to fix in the tutorial code to get multiple hits?

Is there another good resource for a quick sanity check on SLIC, so that I can see that SLIC will work well with my configuration?

Thanks

Eric Benavidez

File Attachments

1) [slic-tutorial.jpg](#), downloaded 1582 times

Subject: Re: Sanity checks on my installation
Posted by [jeremy](#) on Fri, 09 Jun 2006 00:09:07 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi, Eric.

Another good source of LCDD files is the examples/ directory in the slic checkout directory. These were all hand-coded by myself and demonstrate some different geometries, including test beams, sdjan03 full detector, simple blocks, etc. There are also examples of sensitive detectors, magnetic fields, and physics limits.

If you give more details about what you're trying to accomplish, I can maybe point you to some more specific materials.

--Jeremy

Subject: Re: Sanity checks on my installation
Posted by [ebenavid](#) on Fri, 09 Jun 2006 17:52:13 GMT
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I'm basically trying to do some verification of my setup. Here is what I am looking for: a simulation that was already run for which there is known input (lcdd and macro files) and output (slcio file). I'd like to run SLIC with the known input and statistically compare my output with the known output (with JAS3 for instance).

The purpose of this is to see whether or not I can generate results consistent with known good results.

EDIT: I think that I found something on the Confluence Wiki that will help me out - Full Detector Simulation using SLIC. Thanks for your help, Jeremy. I will reply here and mention if that helped me out or not.

Subject: Re: Sanity checks on my installation
Posted by [NormanGraf](#) on Wed, 14 Jun 2006 16:55:52 GMT
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Hello Eric,

We run single particles through each new detector and repeat the process for major upgrades of slic. These datasets are described at <http://lcsim.org/datasets/ftp.html> and are available via anonymous ftp. The detectors are described at <http://lcsim.org/detectors>, where you can also

access the lcmd files. We are planning to automate this QA process and post histograms of the resulting distributions but this is currently limited by lack of manpower.
Please let us know if you have any questions or encounter any difficulties.
Norman

Subject: Re: Sanity checks on my installation
Posted by [ebenavid](#) on Mon, 19 Jun 2006 17:55:09 GMT
[View Forum Message](#) <> [Reply to Message](#)

Thanks, Norman. I'm giving that a whirl right now. Hopefully, I get some good consistency between versions of SLIC and Geant4.

Subject: slic 2.0
Posted by [jeremy](#) on Mon, 13 Nov 2006 20:31:33 GMT
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Hello, SLIC users.

SLIC version 2.0 has been released, in the interests of consolidating a number of minor changes since around May 2006 into a single version.

I am planning to make more regular releases in the future and will be posting updates to the lcd-dev mailing list that point to forum postings.

I have attached the release notes to this posting, in HTML format.

Release notes are also available from the slic website.

http://www.lcsim.org/software/slic/release_notes_v2r0p7.html

Please let me know of any questions or concerns.

File Attachments

1) [release_notes_v2r0p7.html](#), downloaded 1485 times

Subject: slic 2.1 released
Posted by [jeremy](#) on Tue, 19 Dec 2006 23:11:22 GMT

[View Forum Message](#) <> [Reply to Message](#)

Hello.

I would like to announce the release of SLIC version 2.1 . The release notes can be found here.

http://www.lcsim.org/software/slic/slic_release_notes_2_1_0.html

You can find binaries for your platform at this URL.

<http://www.lcsim.org/dist/slic/>

I have currently posted only the Linux binaries. The Windows and OSX versions are in the works.

This release is fully compatible with Geant4 version 8.2, which was released on December 15, 2006.

Subject: lccd 1.12 released

Posted by [jeremy](#) on Tue, 19 Dec 2006 23:13:49 GMT

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Hello.

I would like to announce the release of LCDD version 1.12, to coincide with the release of SLIC 2.1 .

You can find release notes at this URL.

http://www.lcsim.org/software/lccd/lccd_release_notes_1_12_0.html

Subject: SimDist update

Posted by [jeremy](#) on Tue, 19 Dec 2006 23:50:46 GMT

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The SimDist project, for building slic and all of its dependencies from scratch, has been updated for Geant4 8.2 version compatibility.

Here are the current packages tags being used by SimDist.

bdsim v02
clhep v1r9p3_1
gdml v2r8p1
geant4 v8r2
lcdd v1r12p2
lcio v1r7p2
lcphys v1r1p0
mokka 06-02
slic v2r1p0
xerces v2r7p0

You can get more information about SimDist here.

[http://confluence.slac.stanford.edu/display/ilc/Simulation+S oftware+Distribution](http://confluence.slac.stanford.edu/display/ilc/Simulation+S+oftware+Distribution)

Subject: I need a help !!

Posted by [miengo](#) on Wed, 14 Feb 2007 11:31:01 GMT

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Hi,

I am a student from Congo Brazzaville (central Africa) and for my study project,I must use Mokka for to do simulation but I don't find Mokka guid User's on the worldwide web ; so I want to have somes command to eun Mokka and how generate the particles and to execute simulation.

Thank you for your help

Subject: Re: I need a help !!

Posted by [miengo](#) on Wed, 14 Feb 2007 11:35:15 GMT

[View Forum Message](#) <> [Reply to Message](#)

[quote title=miengo wrote on Wed, 14 February 2007 03:31]Hi,

I am a student from Congo Brazzaville (central Africa) and for my study project,I must use Mokka for to do simulation but I don't find Mokka guid User's on the worldwide web ; so I want to have somes command to eun Mokka and how generate the particles and to execute simulation.

Thank you for your help

Subject: slic 2.3.0

Posted by [jeremy](#) on Mon, 02 Jul 2007 17:38:41 GMT
[View Forum Message](#) <> [Reply to Message](#)

The 2.3.0 version of SLIC has been released. It uses Geant4 version 9.0.

Binaries are available for download from the following URL.

<http://www.lcsim.org/dist/slic>

Changes since last version:

- removed deprecated physics lists
- added new physics lists
- removed deprecated GAGTree visualization driver

Any questions can be sent to jeremym@slac.stanford.edu or posted to this forum.

Subject: Phi Inversion?
Posted by [jgill](#) on Mon, 24 Sep 2007 17:40:51 GMT
[View Forum Message](#) <> [Reply to Message](#)

I'm running slic using a macro.

```
# isometric angular distribution  
/gps/ang/type iso
```

```
# phi range  
/gps/ang/minphi 90 deg  
/gps/ang/maxphi 91.5 deg
```

I get momentum vectors that look like this:

Direction: (0.0136482,-0.999903,-0.00282306)

Which seems to me like -90 degrees, since a macro file with this command:

```
/gps/direction 0 1 0
```

Produces this momentum vector:

Direction: (0,1,0)

I realize this is a fairly arbitrary issue about how you define your coordinate system, but I was wondering if perhaps there was some standard coordinate system I didn't know about, or if this was just a bug.

Thanks,
Jack Gill
University of Colorado

Subject: compact.xml for a very simple test case
Posted by [wenzel](#) on Mon, 15 Oct 2007 20:26:26 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi

I tried to work with the compact description for geometry, sensitive detectors and readout segmentation. I thought the easiest would be a block of material that is readout as one calorimeter cell. I used the TestBeamCalorimeter class (see attached .xml file) and assumed that setting the Grid size in x and y equal to the size of the x and y dimension of the block would give me a calorimeter with only one cell. Instead the smallest number of cells I got is 4.

Is there a way to make the segmentation visible in wired?

The other problem is that there seems to be no way to add arrays with properties to a material (e.g. refraction index) (which can be done in lcmd/gdml) or declare the calorimeter type optical.

thanks

hans

File Attachments

1) [compact_lh.xml](#), downloaded 589 times

Subject: Re: compact.xml for a very simple test case
Posted by [NormanGraf](#) on Mon, 15 Oct 2007 20:38:13 GMT

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Hello Hans,

Please check that the dimensions you entered for the detector are not half-lengths. This would result in getting four cells per layer, as you describe. We do not currently support visualization of the individual cell shapes in the event display, but the SimCalorimeterHits are displayed at the center of the cell's position.

As for the other problems you mention, there are limitations on how much information can be generically supported in the compact description. I believe this is still work in progress.

Norman

Subject: Re: compact.xml for a very simple test case
Posted by [wenzel](#) on Mon, 15 Oct 2007 21:15:18 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi

Thanks for the quick response.

Actually that was my first guess too and so I just set the grid size to twice that much or even bigger. I always get 4 cells but as I set the cell size bigger the hit center is clearly located outside of the volume that the segmentation is set for.

It looks to me like there is no boundary or consistency check

Sorry I didn't have the time to actually look at the code in detail.

hans

Subject: Re: compact.xml for a very simple test case
Posted by [NormanGraf](#) on Mon, 15 Oct 2007 21:58:57 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hello Hans,

The default segmentation assumes a cartesian coordinate system, where the edge of the cell starts at 0,0 in the x,y plane. That is why you always get four cells. I believe there is an attribute which allows you to shift this. I will check and get back to you. There is no explicit checking that the requested segmentation "fits" the volume. This was intentionally allowed so that one could accomodate odd combinations of geometries and readout schemes.

Norman

Subject: energy not conserved
Posted by [wenzel](#) on Wed, 07 Nov 2007 23:50:43 GMT
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Hi

I am probably doing something wrong. I was shooting different particles with a kinetic energy of 10 GeV onto a dense hydrogen target configured as one sensitive detector with 4 cells.

When I sum up the raw uncorrected energy in the 4 cells I find that the distribution has tails where more energy is deposited than what we shoot in (even accounting for the rest mass of the incident particle)

While I can think of several reasons where energy can get lost (e.g. leakage or nuclear break up in case of high A targets) getting more out than what we shoot in seems wrong. The default physics list (lcphys) is used. I have attached a tar file with the plots, java analysis file and the detector description files.

Please advice

hans

The tar file contains the following files:

run_lh_e.mac ! mac file to shoot 10 Gev electrons on hydrogen target

run_lh_k.mac ! mac file to shoot 10 Gev electrons on hydrogen target

run_lh.mac ! mac file to shoot 10 Gev electrons on hydrogen target

lh.lcdd ! lcdd file created by GeomConverter

compact_lh.xml ! compact description

AnalyzeCaloHits.java ! Analysis program to create the plots

10GeV_e_on_hydrogen.jpg ! plot energy deposit of 10 Gev electrons

10GeV_k-_on_hydrogen.jpg ! plot energy deposit of 10 Gev kaons

10GeV_Pions_on_hydrogen.jpg ! plot energy deposit of 10 Gev pions

File Attachments

1) [message.tgz](#), downloaded 1286 times

Subject: SimDist not everything is set up to select different physics lists
Posted by [wenzel](#) on Tue, 13 Nov 2007 16:19:49 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi

I tried to follow up on the issues I had with energy not conserved when using the default physics lists (lcphys). It was suggested to try QGSP_BERTINI
So with the slic version created from source using SimDist I added the following line to the mac file.

```
/physics/select QGSP_BERT
```

This resulted in:

Photon-evaporation data are needed.
Please set the environmental variable G4LEVELGAMMADATA to point to your PhotonEvaporation directory.
Data are available from the Geant4 download page.

Once I had downloaded the data file from the geant 4 web site and set the variable G4LEVELGAMMADATA things work ok (haven't looked at the energy yet)

Wouldn't it make sense to install the data files and set the necessary variables in the installation process? It's kind of annoying to select an option and your process bombs

Subject: I am coming
Posted by [zhangqm](#) on Fri, 18 Jan 2008 20:45:38 GMT
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wish have more chances to communicate with you!

Subject: step size in slic
Posted by [wenzel](#) on Mon, 17 Mar 2008 03:48:45 GMT
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How can I set the step size in slic so that I can use smaller steps in select volumes

Subject: Re: step size in slic

Posted by [NormanGraf](#) on Mon, 17 Mar 2008 05:05:26 GMT
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Hello Hans,

Jeremy has done a very nice job of making this straightforward. You can do this quite easily from within the compact.xml detector description.

First, define the limits via:

```
<limits>
  <limitset name="cal_limits">
    <limit name="step_length_max" particles="*" value="5.0" unit="mm" />
  </limitset>
</limits>
```

This has to come before the <detectors> element.

Then, assign them to a volume:

```
<detector id="2" name="EMBarrel" type="CylindricalBarrelCalorimeter"
readout="EcalBarrHits">
  <dimensions inner_r = "EmBarrelInnerRadius" outer_z = "EmBarrelZMax" />
  <layer repeat="1">
    <slice material = "Silicon" thickness = "0.032*cm" sensitive = "yes" limits="cal_limits" />
    <slice material = "Copper" thickness = "0.005*cm" />
    <slice material = "Kapton" thickness = "0.030*cm" />
    <slice material = "Air" thickness = "0.033*cm" />
  </layer>
```

In this example, I have limited the max step length for all particles in the sensitive silicon layer of an EM calorimeter to 5mm.

Please let me know if you encounter any difficulties or have any further questions.

For more documentation, please see <http://confluence.slac.stanford.edu/display/ilc/ILC+Detector+Simulation+FAQ>

Norman

Subject: Re: step size in slic
Posted by [jeremy](#) on Tue, 18 Mar 2008 01:09:13 GMT

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Subject: Re: SimDist not everything is set up to select different physics lists

Posted by [jeremy](#) on Mon, 24 Mar 2008 21:10:02 GMT

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I am packaging all required data files with slic now. You can get the binaries in the usual place (lcsim.org/dist/slic). The environment is setup by the slic.sh run script, so if you want to write your own script, you can base it on that.

Subject: slcio woe

Posted by [AWest](#) on Thu, 16 Jul 2009 22:17:13 GMT

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Hi,

My name is Andrew West, I'm an undergraduate at CU Boulder. I am working for Steve Wagner this summer doing generation, reconstruction and simulation analysis. I have encountered a puzzling occurrence with the slcio files I'm generating. It seems that in the process of converting the stdhep file into an slcio file, the decay length of a particular bottom baryon (the Lambda B, pdgid 5122) becomes corrupted, and is represented as zero. I generated multiple files to see if it was just a fluke. The problem does not occur in the stdhep files that pythia produces; it seems only to surface after running those stdhep files through slic. I was hoping that maybe someone had already run into this little bug and found a way around it. Any guidance or information that anyone has would be very much appreciated.

Cheers,
A.West

Subject: Re: slcio woe

Posted by [NormanGraf](#) on Thu, 16 Jul 2009 22:28:21 GMT

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Hello Andrew,

Welcome to the effort! A number of key individuals are currently on vacation, so I cannot answer your question definitively. However, I will run some diagnostics and make sure that your report is

handled as soon as possible. Could you please point me to the input stdhep and output slcio files that you have been using?

Norman

Subject: Re: slcio woe

Posted by [AWest](#) on Fri, 17 Jul 2009 22:41:19 GMT

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Hello Norman,

Thank you for responding to my post so quickly; I'm sure that you're a busy fellow and I want you to know that your help is very much appreciated. There is a peculiar detail that I forgot to mention in my initial post, and that is that there are some cases where the flight length of this lambda_b particle is indeed NOT zero. However, statistical analysis of a large file revealed that even these flight lengths are in some way, wrong. About 75% have 0 flight length, and the rest have flight lengths

inconsistent with the Lambda_b lifetime. We looked at 100's of B0, B+, and Bs meson decays, and they all have flight length distributions consistent with their known lifetimes (after slic), and no 0 flight length decays (where 0 means < 1 fm).

At any rate, these are two small files that I generated today that clearly display the issue. There are Lambda_b decays with zero length and with non-zero length in the slcio file.

The first event does have a PID=5122 that has non-zero length in the stdhep file and length=0 in the slcio file (MCParticles).

`/afs/slac.stanford.edu/u/ee/stevew/afssub4/ZZtest_slac.stdhep`

`/afs/slac.stanford.edu/u/ee/stevew/afssub4/ZZtest_slac.slcio`

again, I do sincerely appreciate your help, sir.

~A.West

Subject: Re: slcio woe

Posted by [NormanGraf](#) on Wed, 05 Aug 2009 17:36:48 GMT

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Hello Andrew,

Just a quick post to let you know that we are currently working on this, have identified the cause of the problem and are implementing a fix. I'll keep you informed.

Norman

Subject: Re: slic woe

Posted by [NormanGraf](#) on Mon, 10 Aug 2009 17:27:00 GMT

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We looked at this problem, and it related to Geant4 not knowing about the lambda(b) particles. This should be fixed in the 2.6.1 slic release, which should be the current version in SimDist, if you want to build it yourself.

I also posted a gcc 3.4 binary to lcsim.org/dist/slic

To use this release you need to point to a data table with the extended particles.

```
slic -P ~/myslic/data/particle.tbl [etc.]
```

This file is also included in the dist tarballs that SimDist produces.

Let us know if you can get this running and if it works for you.

Subject: Namespace for material names used in compact.xml detector descriptions

Posted by [rcowan](#) on Thu, 07 Jan 2010 23:57:01 GMT

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Hi,

I wonder where material names such as "Steel235", "PyrexGlass", and "Rohacell31" as used in the sid02 compact.xml file are defined. A couple of quick searches of NIST online databases and the G4 materials list didn't seem to turn up any matches. These names are used in the sid02 compact xml file but are not defined in it.

I'm really looking for a definitive list of material names (and corresponding properties) that can be used in compact detector descriptions.

I found the example names above as either the value of a "material" attribute on a

<slice> tag or as the value of the "ref" attribute on the <fraction> tag inside a <material> element.

Thanks much.
--Ray

Subject: Re: Namespace for material names used in compact.xml detector descriptions

Posted by [NormanGraf](#) on Fri, 08 Jan 2010 00:24:59 GMT

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Ray,

A number of commonly used materials (at least for our LCD simulations) have been made available simply for convenience. These are defined in the materials.xml file which is part of the GeomConverter distribution (specifically, in

resources/org/lcsim/material/materials.xml).

You are, of course, free to define any custom materials in the <materials> section of the compact.xml file.

Norman

Subject: Re: Namespace for material names used in compact.xml detector descriptions

Posted by [jeremy](#) on Mon, 11 Jan 2010 22:33:58 GMT

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Norman gave the location of the XML file where you can find definitions for the materials you mentioned.

BTW, an LCDD file will have all of the materials it uses defined in the <materials> section, even if they are not explicitly defined in the compact description.

LCDD does not reference any external materials database, though material references to names in the built-in Geant4 NIST database should work okay if NIST has been enabled.

Subject: GeomConverter and "reflect=false" objects
Posted by [rcowan](#) on Mon, 11 Jan 2010 23:23:21 GMT
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Hi,

I'm using GeomConverter to prepare a compact.xml file for a simple dark photon detector. I find that when I build some detector types (such as DiskTracker and CylindricalEndcapCalorimeter) with reflect="false" that the detectors that are built with inner_z < 0 build their components in the +Z direction.

For instance, this code snippet builds the "ForwardCalorimeter" as expected--the slices start at inner_z=+50cm and progressively stack in the +z direction--but builds the "BackwardCalorimeter" starting at inner_z=-50cm and still stacks the layers and slices in the +Z direction (inverting the layer structure from what is desired, as well as shifting it by its total thickness).

```
<detector id="1" name="ForwardCalorimeter" reflect="false"
type="CylindricalEndcapCalorimeter" readout="HcalEndcapHits">
  <dimensions inner_r="20*cm" inner_z="50*cm" outer_r="60*cm" />
  <layer repeat="2">
    <slice material="Steel235" thickness="6.0*cm" />
    <slice material="Polystyrene" thickness="2.0*cm" sensitive="yes" />
  </layer>
</detector>
```

```
<detector id="2" name="BackwardCalorimeter" reflect="false"
type="CylindricalEndcapCalorimeter" readout="HcalEndcapHits">
  <dimensions inner_r="30*cm" inner_z="-50*cm" outer_r="60*cm" />
  <layer repeat="2">
    <slice material="Steel235" thickness="6.0*cm" />
    <slice material="Polystyrene" thickness="2.0*cm" sensitive="yes" />
  </layer>
</detector>
```

See the attached file for a plot showing the situation. Note that in the figure, the blue axis (+Z) points to the left, +Y axis in green points upward.

The detector case I am simulating is not symmetric with respect to reflection in the x-y plane, so I cannot use "reflect=true".

I can work around this by shifting inner_z by the thickness of the whole calorimeter and also

inverting the slice order within a layer, but this means (I think) that the layers will be numbered from outside toward the origin rather than the reverse when I get to the reconstruction stage.

Any suggestions on how to make these detector types build "outward" rather than "inward" when inner_z is < 0?

Thanks,
--Ray

File Attachments

1) [g4_20_x.png](#), downloaded 937 times

Subject: Using heprep files with wired in jas3 with variant geometries
Posted by [rcowan](#) on Thu, 28 Jan 2010 03:26:00 GMT
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When viewing events from a variant detector geometry in wired, jas3 will ask for the heprep file for the given geometry either as a direct path to the heprep file or as an alias to the heprep file.

If you give a complete filespec to the correct heprep file, jas3 will give an error concerning line 59 of org.lcsim.util.heprep.MCParticleConverter. The line is:

```
trackingRMax = detector.getConstants().get("tracking_region_radius").getValue();
```

However, this information (the tracking region radius) is not in the heprep file in any case, it's in the compact.xml file. So it seems this particular method of loading the heprep file alone can never work--is this a bug/feature?

Taking the other option--putting an alias to the detector conditions data in your ~/.lcsim/alias.properties file--will work, but only if the directory does contain the compact.xml file.

Just FYI.

Subject: Use of multiple CylindricalBarrelCalorimeters
Posted by [rcowan](#) on Tue, 01 Jun 2010 00:45:09 GMT
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Hi,

I have a detector design that I am modeling using the compact description format and slic. Part of the design is to have four consecutive barrel calorimeter layers with the layers increasing in length as the radius increases. Each calorimeter consists of a single absorber and a single sensitive layer.

I get an error from slic if I use this design and all four barrel calorimeters are producing "HcalBarrHits". To avoid this error, I can change the names--say, HcalBarrHits1, HcalBarrHits2, etc--but I'd like to call them all by the same name for consistency.

Question: Is there a better way to describe four concentric barrel calorimeter layers with differing lengths in the compact description?

While I can make a barrel calorimeter with repeating layers of the same length as a single system (using "layer repeat"), I don't know if there is a way to make four layers repeating with differing lengths.

Thanks. --Ray

Subject: Slic bug for version v03-01-03
Posted by [remiete](#) on Thu, 26 Jun 2014 12:09:58 GMT
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Hi,

I tried to run some examples provided in the slic package v03-01-03 (hcal.lcdd, ecal.lcdd, SteelBox.lcdd, ...).

I got the same error each time :

```
slic -g /gridsoft/ipnls/ilc/v01-17-05/slic/v03-01-03/examples/SteelBox.lcdd
Available UI session types: [ Qt, GAG, tcsh, csh ]
```

```
*****
```

```
Application : Simulation for the Linear Collider
```

```
Version : 3.1.3
```

```
*****
```

```
LCDD URI <../examples/cal/hcal.lcdd>
```

```
Version <>
```

```
***** LCDD Header *****
detectorName <HCAL>
detectorVersion <1.0>
detectorUrl <http://www.example.com>
authorName <Tony Johnson>
authorEmail <tonyj@slac.stanford.edu>
generatorName <DummyGenerator>
generatorVersion <1.0>
generatorFile <DummyCompactFile.xml>
generatorChecksum <0>
comment
ECAL: NIMA 487 (2002) 291-307
end comment
*****
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WARNING: IdSpec for <ECAL> does not exist! Position comparison will be used for hit aggregation instead of id.

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Expression evaluator:: Error registering constant ecal_layer_x

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Expression evaluator:: Error registering constant ecal_layer_y

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Expression evaluator:: Error registering constant ecal_x

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Expression evaluator:: Error registering constant ecal_y

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Abandon (core dumped)

followed by a Geant4 exception thrown saying:

```
----- EEEE ----- G4Exception-START ----- EEEE -----  
*** G4Exception : mat011  
    issued by : G4Element::G4Element()  
Fail to create G4Element N Z= 0 < 1 !  
  
*** Fatal Exception *** core dump ***  
----- EEEE ----- G4Exception-END ----- EEEE -----
```

and

```
*** G4Exception: Aborting execution ***
```

I tried with my personal laptop and on our server (lyoserv) with different version of ilcsoft (17-03 17-04 and 17-05) for different versions of slic dependencies. We also tried with different accounts and terminal environments. No other environment is sourced. This error happens all the time.

Thank you for help.

Cordially

RE

Subject: number of events on command line
Posted by [jfstrube](#) on Tue, 18 Nov 2014 03:47:42 GMT
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I'm trying to produce some single particles to calibrate new detector variants.
This is with SLIC 3.1.4 as installed at CERN.

relevant parameters are

* Geant4 Command Queue *

```
/lcdd/url /afs/cern.ch/user/j/jfstrube/public/ILC_DBD/Detectors/sidloi
3_scint0.5x0.5/sidloi3_scint0.5x0.5.lcdd
/run/initialize
/lcio/filename output.slcio
/control/execute /afs/cern.ch/user/j/jfstrube/public/ILC_DBD/singleParticles/
pi/pi-_10GeV_theta5-175.mac
/run/beamOn 10000
```

<edit>Sorry, it seems that this forum likes to screw up file names. Please remove the space in the path names</edit>

This somehow starts two runs. The first run with 1 event, which is what is specified in the mac file. The second run then starts, but crashes with a core dump, because the output file already exists.

...

```
>>>> BeginRun <1>
LcioManager :: LCIO file already exists: ./output.slcio
RunManager :: Aborting run with return code: 4
PrimaryGeneratorAction :: Run was already aborted. Will not generate events.
>>>> EndEvent <0>
```

```
Run Timer: User=0s Real=0s Sys=0s
```

```
>>>> EndRun <1>
```

```
Tue Nov 18 04:34:13 2014 :: WARNING :: RunManager :: Generated 0 events but 10000 were requested.
```

```
Tue Nov 18 04:34:13 2014 :: OKAY :: SlicApplication :: SLIC is exiting.
return code: 4 => output file already exists
```

This looks like a bug to me. What is the recommended way to specify the number of events on the command line?

Subject: Re: number of events on command line
Posted by [jfstrube](#) on Tue, 18 Nov 2014 03:55:25 GMT
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It seems that the -x option solves this problem.
However, I would still expect that an option specified on the command line overrules whatever is specified in the mac file...
