again on FWPFCandidate3DProoxyBuilder and Xrays:

dear Alja,

After a couple of weeks of use of the Xray cluster view with sample made of single particles, i noticed that the code (that thanks ot you finally worked :-)) crashes is applied on samples with PU.
I went back to the code then and adding some cout I discovered today 2 things:

1) code seems to loop twice over the PF candidates in the event , and I don't know why (see temp txt file)
Do you know if there is a reason why FWPFCandidate3DBuilder build should be called twice somewhere?

Assuming that elems indicate PF candidates
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const reco::PFCandidate::ElementsInBlocks& elems = iData.elementsInBlocks();
 for( unsigned i = 0 ; i < elems.size(); ++i ) {
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This is true for both the original version of the file and the modified for Xray one.

2) regarding the only version with the Xray clusetr in it.....it is displaying only the first PF candidate over all the available in the event. And still , even considering only the first (a.k.a.PF candidate 0 in teh display), it loops over it twice. You can see it in the temp.txt file I attch.

3) if I run it over "/eos/cms/store/user/azzolini/HGC/620_SLHC18-preECFA/step3_5jet_500E_05MIP_PU.root" PU sample root file it crashes at event 1 with seg id 11.
could you please suggest me what is the best way to debug this crash? (temp_PU.txt log file attch)

I am still working in the same CMSSW_6_2_0_SLHC18 environment

I would be happy to try new tests if some comes to your mind
thanks for any help

virginia

Hi Virginia,

On 10/23/14 08:23, Virginia Azzolini wrote:

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The FWPFCandidate3DProxyBuilder::build() is called for each element in collection. In case of first event this is 9727x. This is a feature of FWSimpleProxyBuilderTemplate.

It is OK you use that, but I would scale hits relative to max energy in event, You can get it from fireworks::Context::getMaxEnergyInEvent(). We use this for example in scaling of Jet lines in: https://github.com/cms-sw/cmssw/blob/CMSSW_7_2_X/Fireworks/Calo/plugins/FWJetProxyBuilder.cc#L251

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The code crashed because there is no recHit collection. I added check here that it works:https://github.com/alja/cmssw/blob/virginia-slhc18/Fireworks/ParticleFlow/plugins/FWPFCandidate3DProxyBuilder.cc#L187

From warning FWGeomtery::getCorners() looks like detId geometry is missing. The import like Sunanda has suggested should work OK.

Alja

Hi Alja,

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The FWPFCandidate3DProxyBuilder::build() is called for each element in collection.

ok, then if in the collection I have 3 elements (a.k.a. EE, HGCEF and HGCEB reco::PFBlockElement), I will see the output of the loop 3 times.
i never noticed before. good to know. :-)

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Why would you recommend this? for a better and cuter look or for a formal need.
as max energy in the event, are you imagining the max energy of all the PF candidate in the event or what?

I am still trying to understand why in the way I used (that probably it's much more manual than the one you suggests) the scale of the energy and the corresponding display does not go over the 1st PF candidate. It does not make sense that only the PFcandidate index0 is shown.
It's like as after the code manages to find a maximum rechit and scale the rest of teh rechits in the cluster depending on it, it "feels happy enough" and forgets to consider the next PF candidates, but there is not suspicious continue line that could justify it

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added thanks. it does not crash any longer.

> From warning FWGeomtery::getCorners() looks like detId geometry is missing. The import like Sunanda has suggested should work OK.

should I change the Fireworks/Geometry/src/FWTGeoRecoGeometryESProducer.ccfile that you discussed with him?
or you mean I should adapt his comment to my FWPFCandidate3DProxyBuilder file. there is no call to getDetValidId here.

ciao and thank you
Virginia

Hi Virginia,

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You could check for the max calorimeter (maxEE, maxHEF, ...) energies just once at the beginning of PFCandididate3DProxyBuilder::build().

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Sorry I was so unclear. This must bee the size of PFCandidate collection.

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It should not be any difference between the first or other elements. Can you send me your fireworks configuration file? The PFCandidate collection is huge. Or, just send me filter that CollectionController,

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The code to produce reco geometry file is OK in 6_2_0_SLHC18 release.

The reco goemery file needs to be produced with 2023HGCalV4 tag:

cmsRun Fireworks/Geometry/python/dumpRecoGeometry_cfg.py tag=2023HGCalV4

.. and then set it in cmsShow, the errors were gone.

I already added 2019 geometry in SLHC releases. Will ask to include 2023HGCalV4 too. I will do that after the offline week took or maybe earlier.

The code FWPFCandidate3DProxyBuilde can be simplified ad optimized. Hope to see you next week and discuss about it.
Cheers,
Alja

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> the PF candidate in the event_ or what?
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I might have a look at that if it's for simplify things. You're right when you say this 3DProxybuilder needs to become simpler.

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EUREKA! I found that "if (iIndex) return;" (I don't remember why it was there) was responsible for cutting off all the P candidates except the first one.(FinallyBlue attch)

Next question is : how can I make the color of each PF candidate be different? Right now they are all shown in blue + shades of blue. So the clouds they look a bit all the same.
I'd like something more random like it was before (randomColored attch screenshot)

That was set by the line: (line 73 of FWPFCandidate3DProxyBuilder_original.txt file)
comp->SetMainColor((unsigned)2.0*myRandom.Uniform(50)); where comp was a compound
(TEveCompound* comp = createCompound(false,true);

Now comp is instead comp is a TEveElement* comp = &oItemHolder;
(FWPFCandidate3DProxyBuilder.cc)
and that SetMainColor does not work any longer.
Do you have any suggestion for me?

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Re-Done again thanks :-)
I then run with :

cmsShow -c conf_13Ott.fwc -g /tmp/azzolini/cmsRecoGeom-2023HGCalV4.root --sim-geom-file /afs/cern.ch/user/l/lgray/work/public/xHGCAL/cmsSimGeom-14-HGCAL.root /tmp/azzolini/preECFA/step3_5jet_500E_05MIP_noPU.root

where the /tmp/azzolini/preECFA/step3_5jet_500E_05MIP_noPU.root is identical to /eos/cms/store/user/azzolini/HGC/620_SLHC18-preECFA/step3_5jet_500E_05MIP_noPU.root

> I already added 2019 geometry in SLHC releases. Will ask to include 2023HGCalV4 too. I will do that after the offline week took or maybe earlier.

great ! thanks

> The code FWPFCandidate3DProxyBuilde can be simplified ad optimized. Hope to see you next week and discuss about it.

right, you'll come to cern. Hope you'll have some time free in a way we could meet. Please let me know

ciao ciao
Virginia

Cheers,
Alja

Hi Virginia,

On 10/28/14 10:14, Virginia Azzolini wrote:

> Next question is : how can I make the color of each PF candidate be different? Right now they are all shown in blue + shades of blue. So the clouds they look a bit all the same.
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I have very busy time for presentation and online event display at P5. I will try to get time soon to help with that.

... Colors are set in FWPFCandidate3DProxyBuilder::localModelChanges(), maybe doing there nothing (just a return from the virtual function) will do the work.

In Fireworks it is a general rule that collections use single color. I have nothing against breaking it :)
Soon,
Alja