

ALICE



Weekly report

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ACO
meeting

8 de octubre 2016

Outline

- We start replying the EPJC questions of the article.
- Visualizations were found at extreme values for selected primary particles (no secondaries):
 - $S_0 < 0.02$, $dN/d\eta > 40$, $N_{ch} > 64$ ($\eta = 1.6$)
 - $S_0 > 0.9$, $dN/d\eta > 40$, $N_{ch} > 64$ ($\eta = 1.6$)
- Jobs for MC and data are running to get the spectra for new sphericity bins
- Some requirements of Antonio to compare efficiency for different bins of multiplicity and and different sphericity selection.

Analysis and run selection

Software: Aliroot:v5-07-20 Aliphysics:vAN-20160204

Event shape classes: (PWGLF/SPECTRA/Spherocity)

Analysis macros: AddTransverseEventShapeTask.C

AliAnaTransverseEventShapeTask.cxx

AliAnaTransverseEventShapeTask.h

LHC15f pass2: (44.6 mill of evts) (after all ev selection)

LHC15g3a3 Monash Tune (43.2 mill of evts) (after all ev selection)

good runs*:

226500, 226495, 226483, 226476, 226472, 226468, 226466,
226452, 226445, 226444, 226225, 226220, 226170, 226062,
225768, 225766, 225763, 225762, 225757, 225753, 225719,
225717, 225716, 225710, 225709, 225708, 225707, 225705,
225587, 225586, 225579, 225578, 225576, 225322, 225315,
225314, 225313, 225310, 225309, 225307, 225305, 225106,
225052, 225051, 225050, 225043, 225041, 225037, 225035,
225031, 225026

(*) <http://twiki.cern.ch/twiki/bin/viewauth/ALICE/PWGLF13TeVanalysis>

Event, track and physics selection

Event Selection

Trigger: KINT7

Rejection of AliESDEvent::IsIncompleteDAQ

Vertex selection

SPD Pile-up rejection

Background rejection

Multivertex Pile-up rejection

low diagonal cut OFO & V0M applied

Vertex conditions for 2015 data (**NEW added**) (this reduce the sample of evts)

<https://twiki.cern.ch/twiki/bin/view/ALICE/PWGPPEvSelRun2pp>

******https://twiki.cern.ch/twiki/bin/view/ALICE/AliceHMTFCodeSnippets#Physics_Selection

Physics Selection

- MinNCrossedRowsTPC = 120; *
- MinRatioCrossedRowsOverFindableClustersTPC=0.8;
- MaxFractionSharedTPCcluster = 0.4;
- Maxchi2perTPCcl=4.;
- Max dcaz ITSTPC=2.0;
- SetDCAToVertex2D(kFALSE);
- SetRequireSigmaToVertex(kFALSE);
- RequireTPCRefit(kTRUE);
- RequireITSRefit(kTRUE);
- AcceptKinkDaughters(kFALSE);
- MaxDCAToVertexXYPtDep("0.0182+0.0350/pt^1.01"); *
- SetMaxChi2TPCConstrainedGlobal(36.);

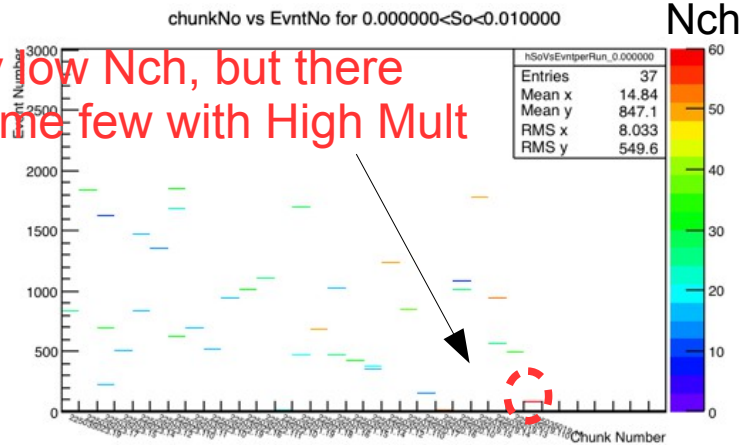
Track selection taken for each analysis

- So Analysis, Hybrid-track cuts for primary charged particles with $|\eta| < 0.8$ and $0.15 < p_T < 10$ GeV/c.
- $\langle p_T \rangle$ Analysis, Golden-track cuts with $|\eta| < 0.8$ and $0.15 < p_T < 10$ GeV/c.
- Multiplicity:
 - Reference multiplicity selection with $|\eta| < 0.8$

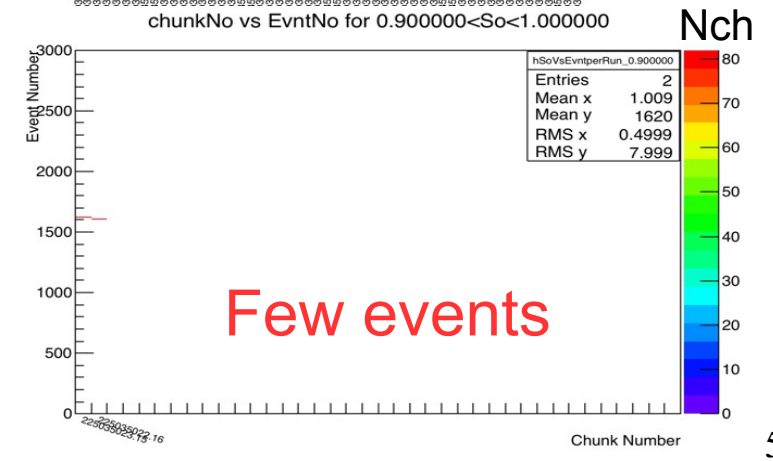
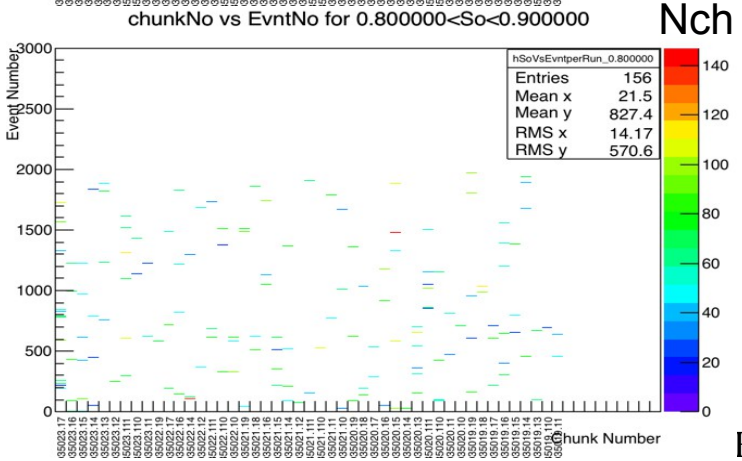
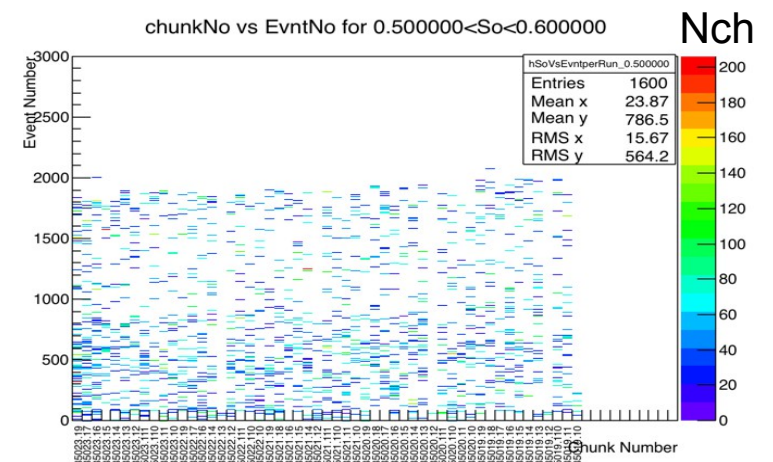
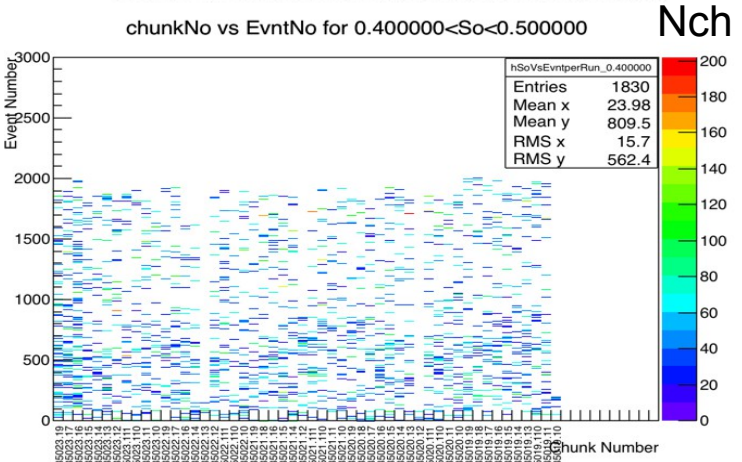
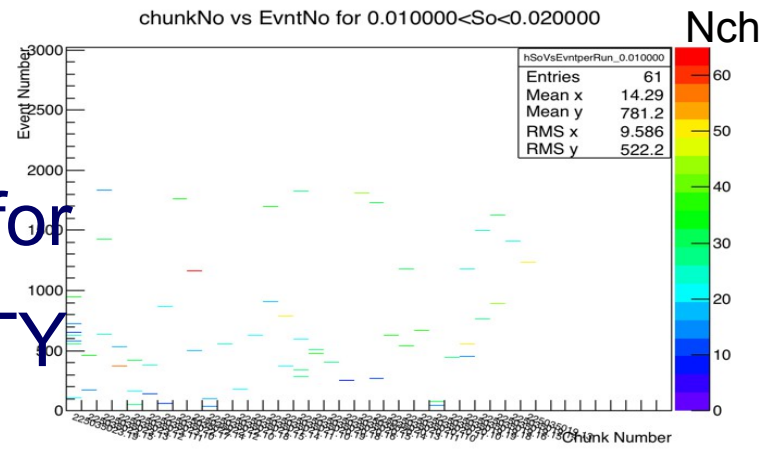
V0M percentil selection

Events (Run 225035 Grid) Spherocity and high Multiplicity

Mostly low Nch, but there are some few with High Mult



Looking for HM JETTY EVENTS

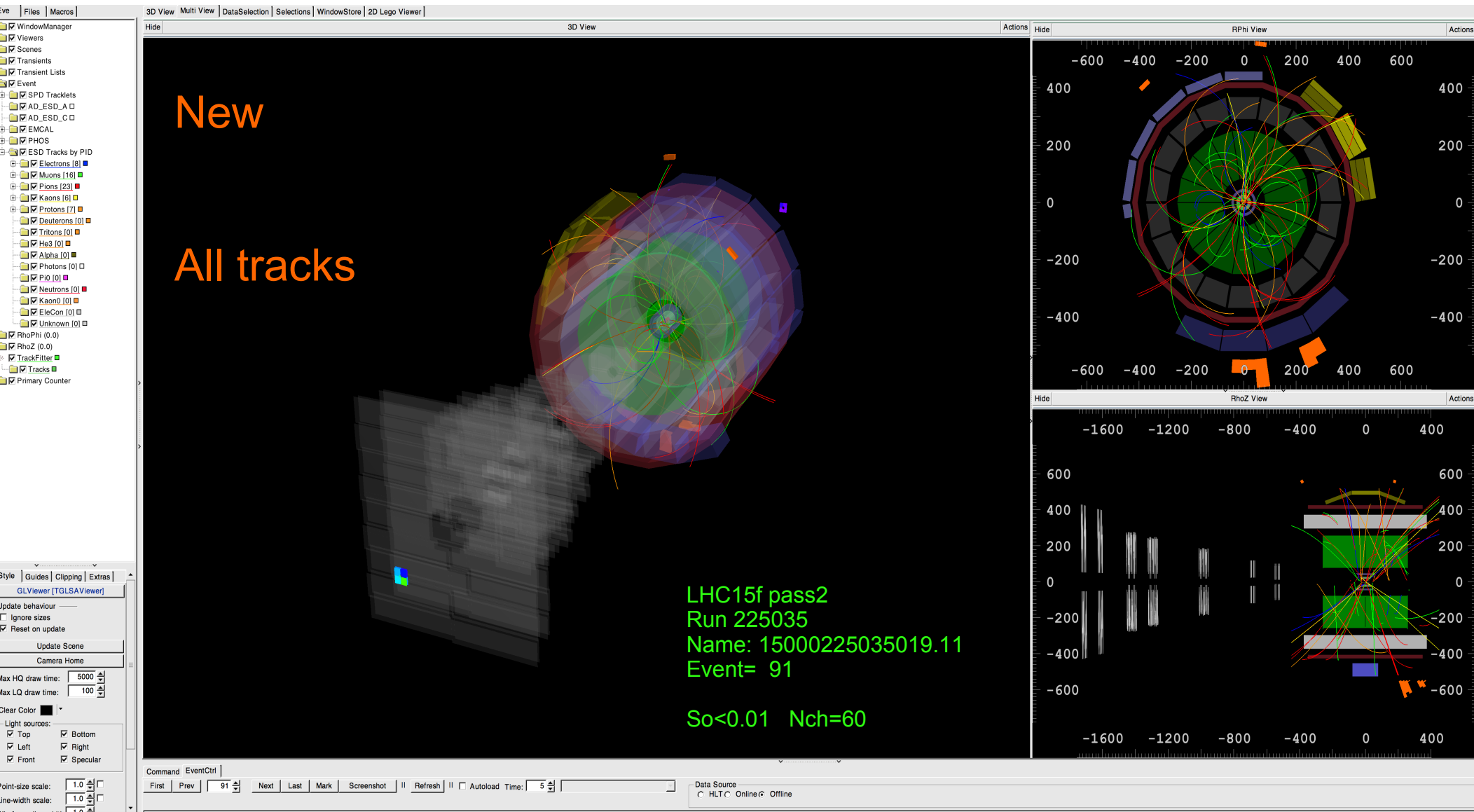


Few events

Events in white don't pass the physics selection

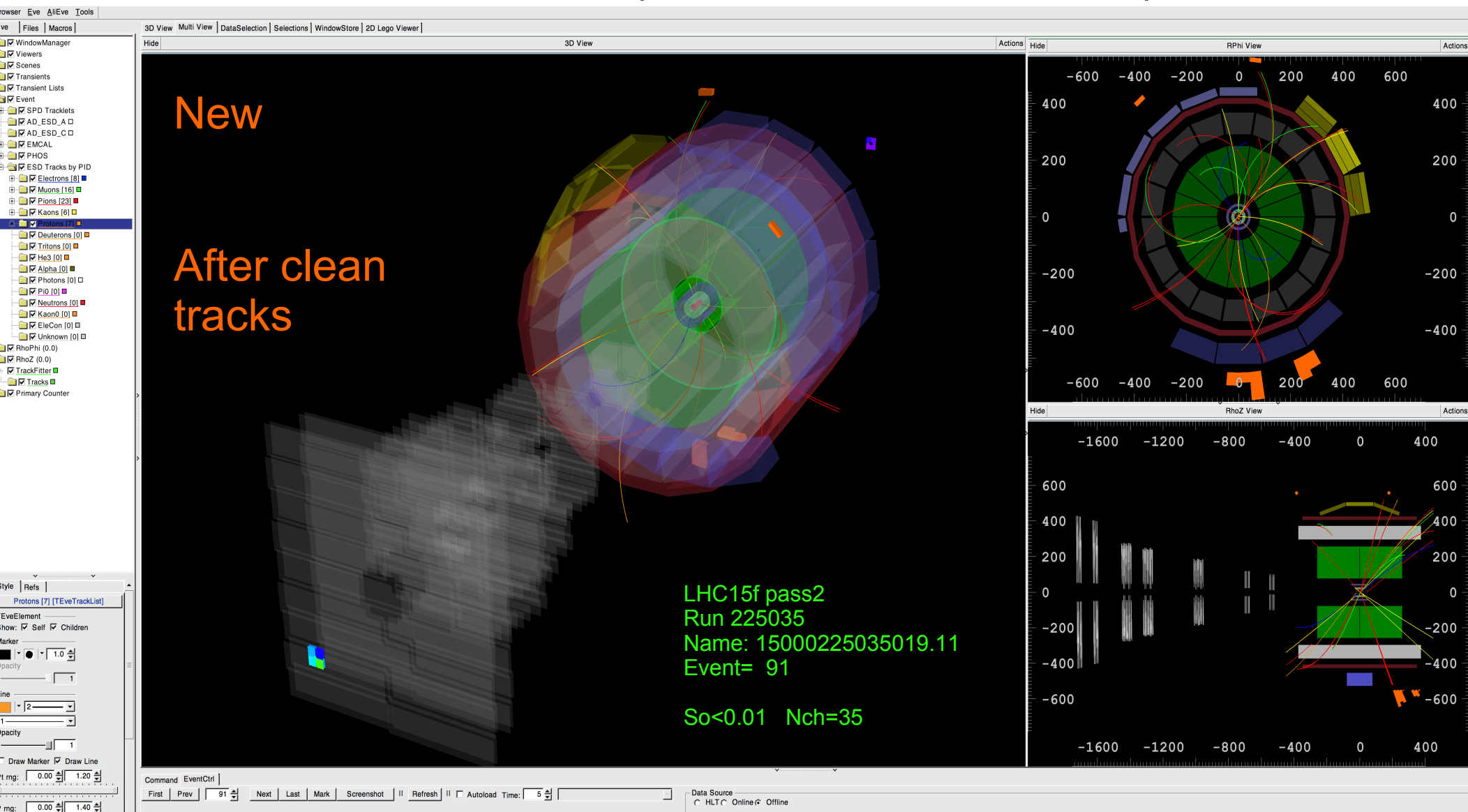
Visualization for events selected with Sphericity R 225035

JETTY EVENT $S_o < 0.01$ (now HM event has been found)



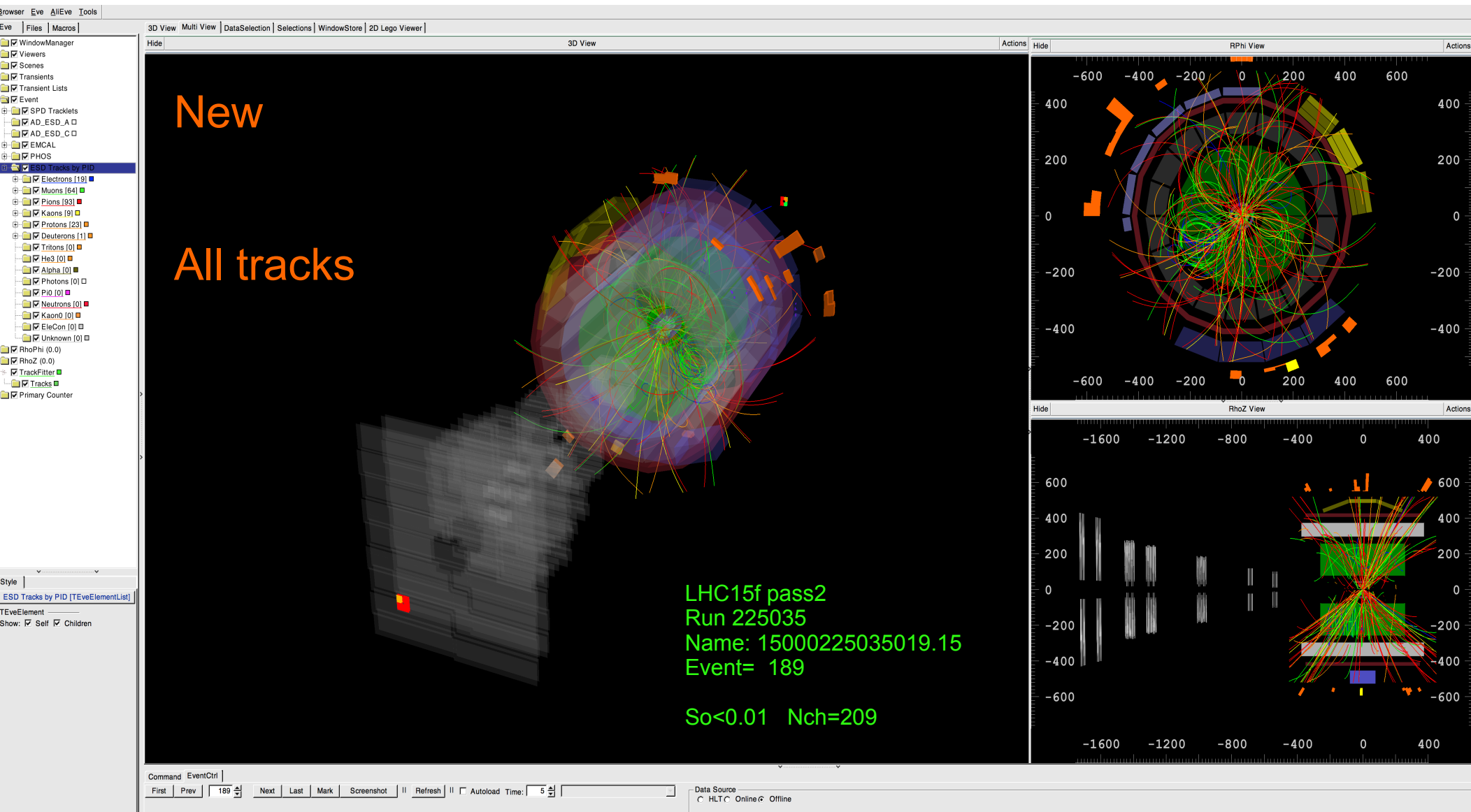
Visualization for events selected with Sphericity R 225035

JETTY EVENT $S_o < 0.01$ (not so HM after clean)



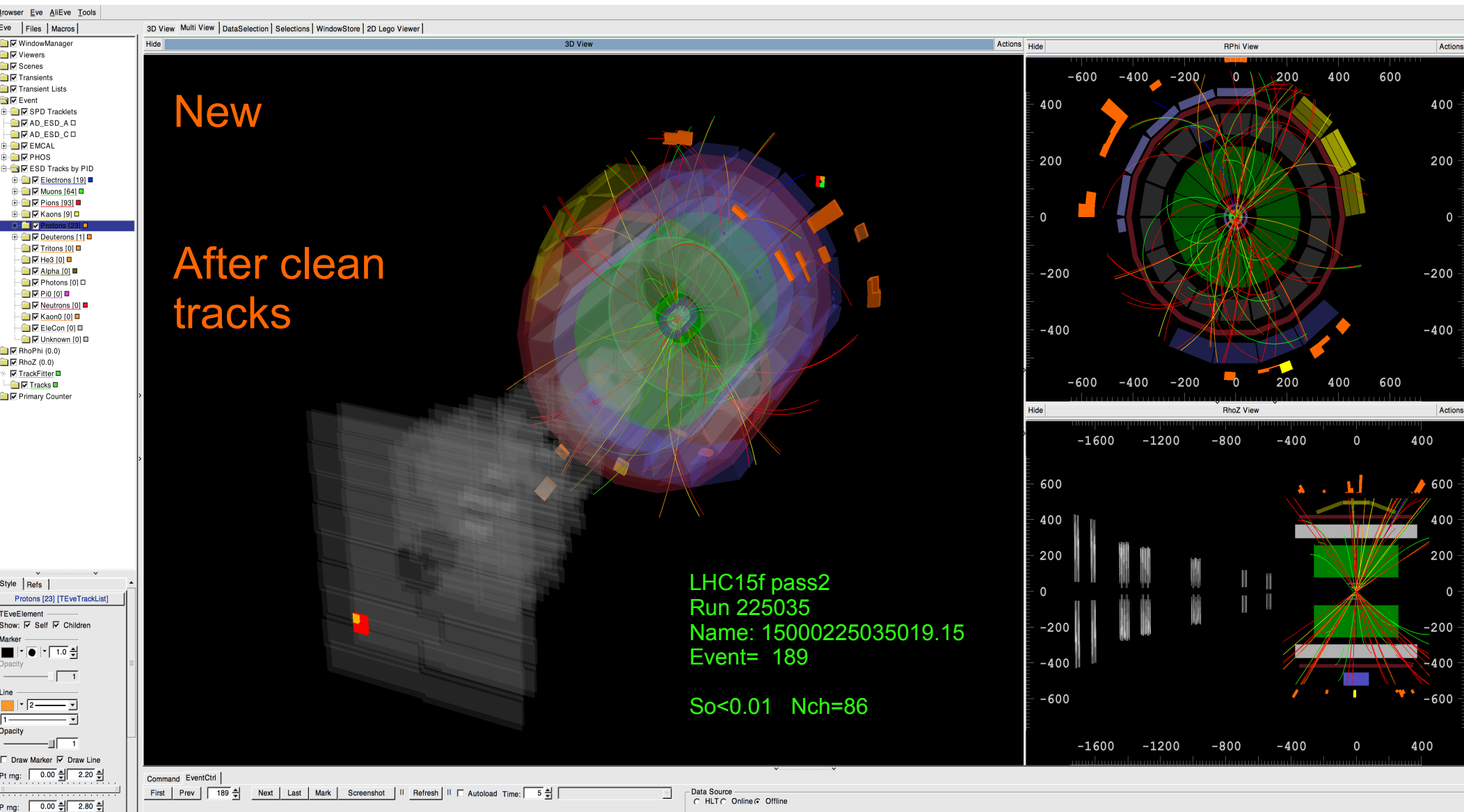
Visualization for events selected with Sphericity R 225035

JETTY EVENT $S_o < 0.01$ (OTHER HM JETTY event)



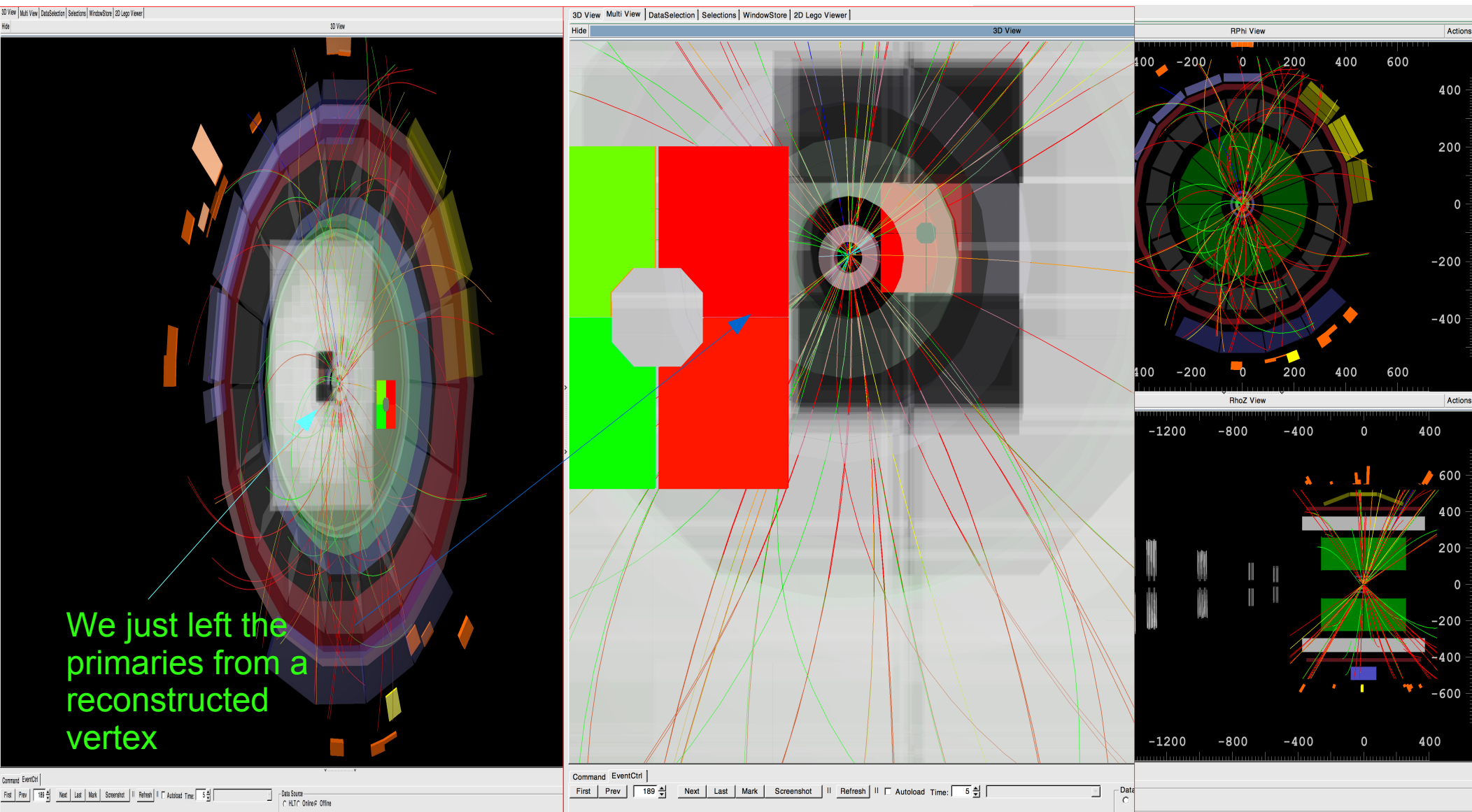
Visualization for events selected with Sphericity R 225035

JETTY EVENT $S_o < 0.01$ (now HM event still)

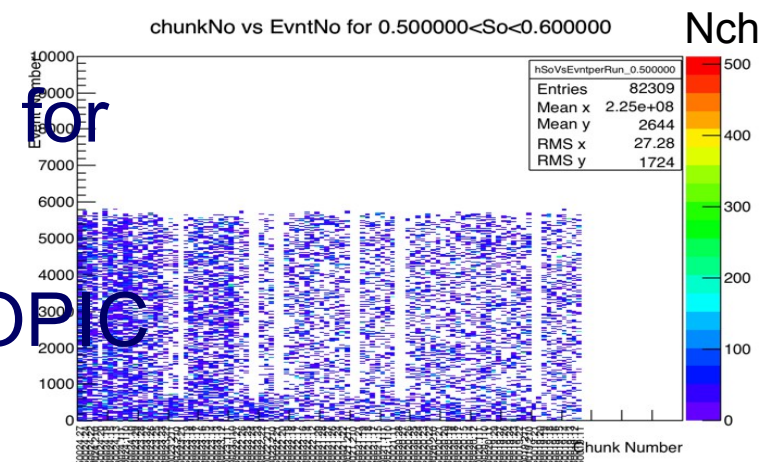
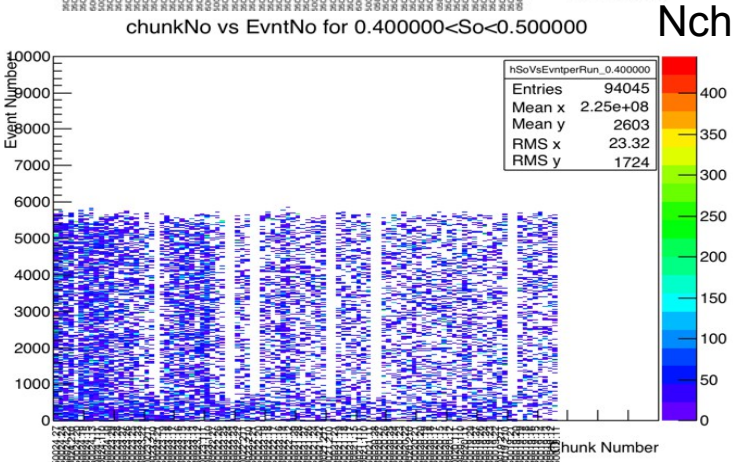
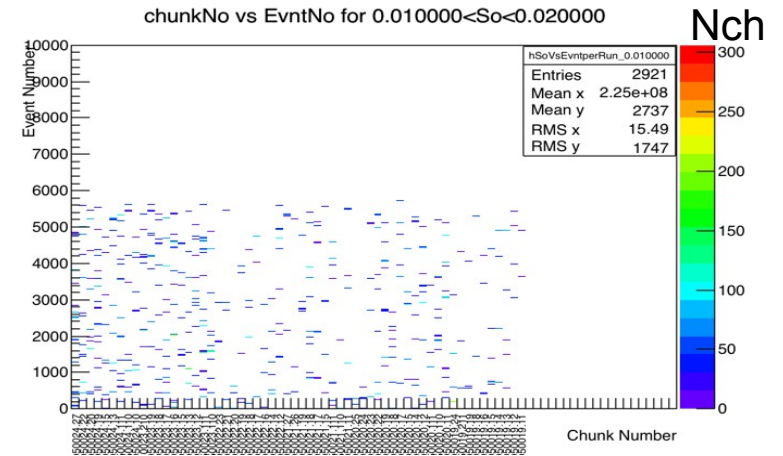
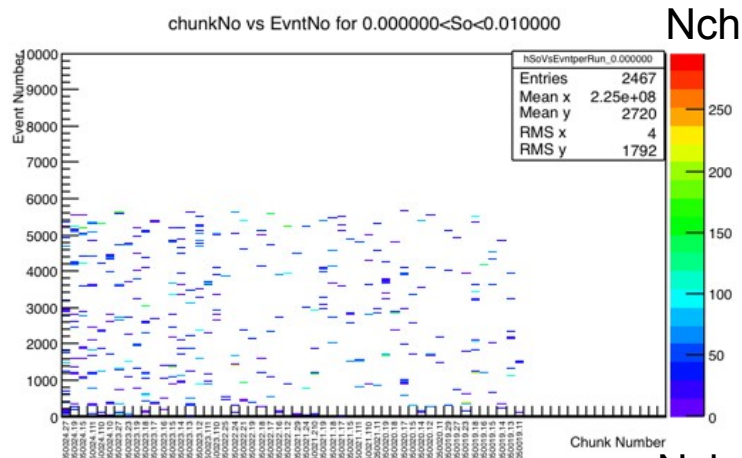


Visualization for events selected with SpheroCity R 225035

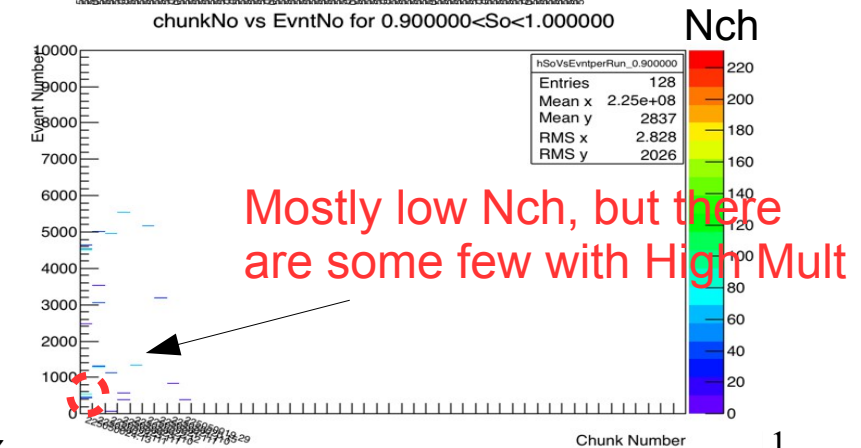
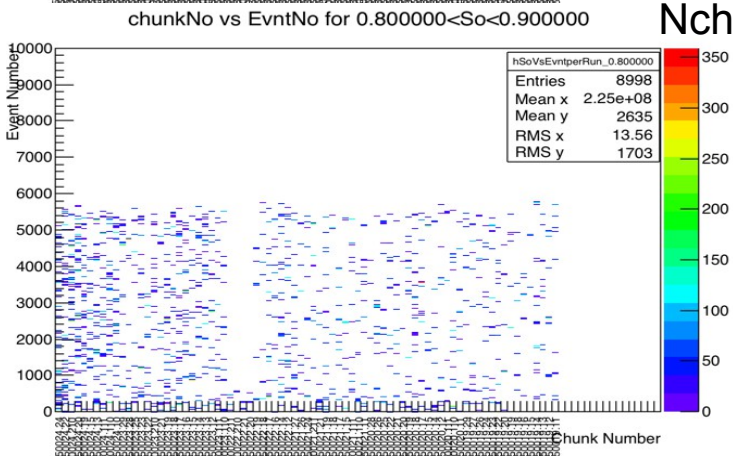
How was clean?



Events (Run 225050 Grid) Sphericity and high Multiplicity



Looking for
HM
ISOTROPIC
EVENT

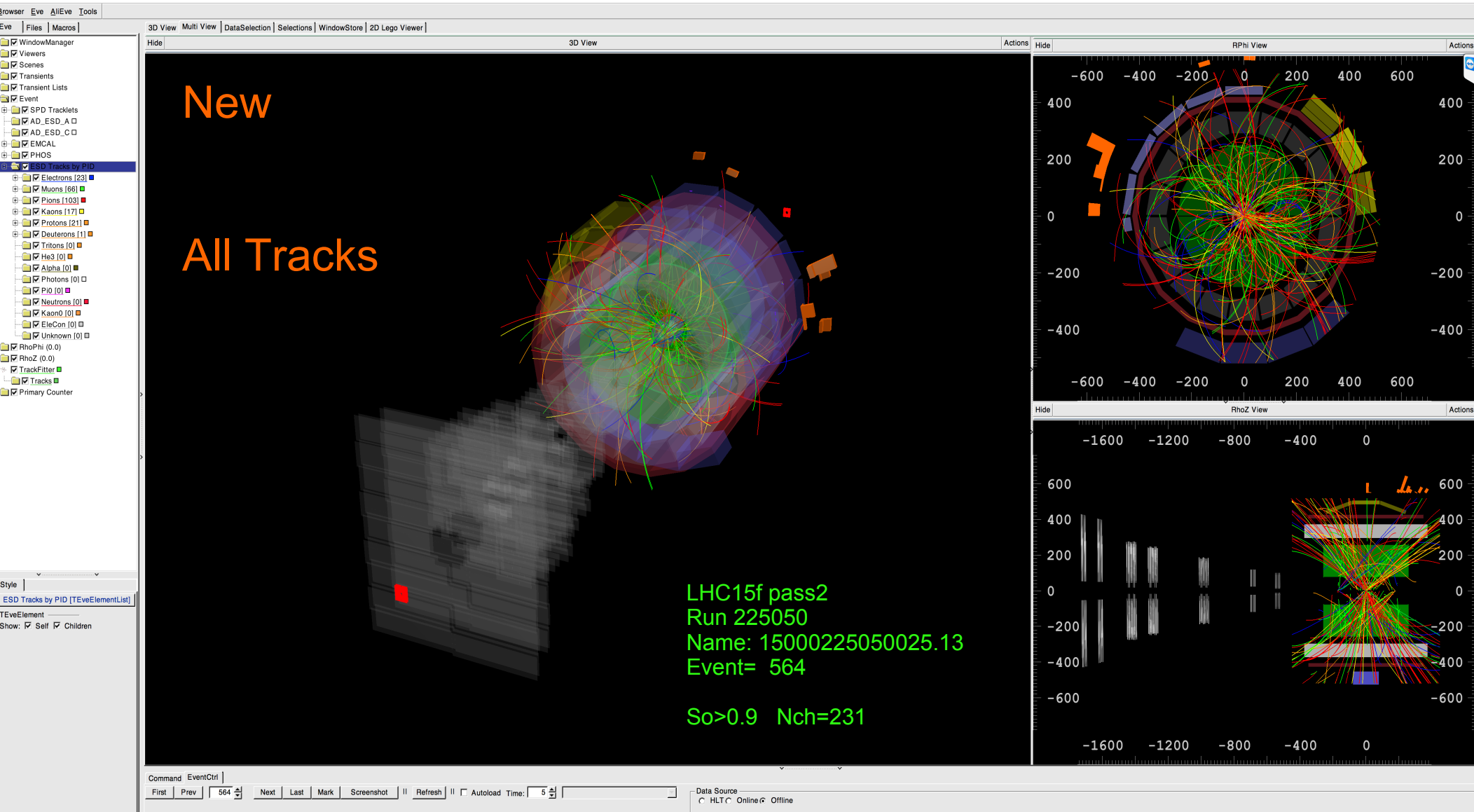


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Events in white don't pass the physics selection

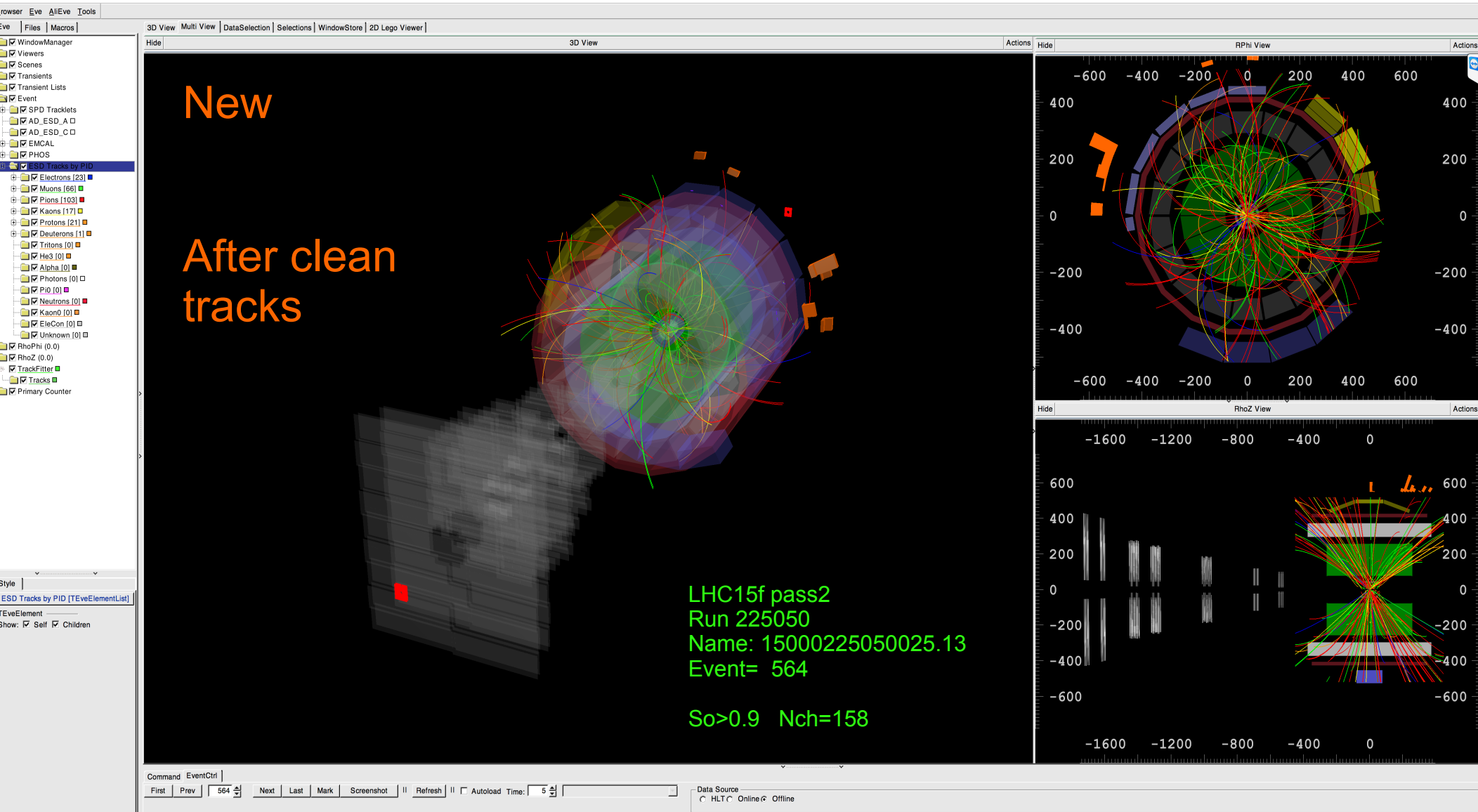
Visualization for events selected with Sphericity R 225050

ISOTROPIC $S_o > 0.9$ (now HM event has been found)



Visualization for events selected with Sphericity R 225050

ISOTROPIC $S_o > 0.9$ (now HM event has been found)



- Jobs for MC and data are running to get the spectra for new spherocity bins

Welcome **hbelloma**,

Jobs management : [my own jobs](#) | [all my roles](#) | [all jobs](#)

[Show as chart or table.](#)

Status				Active jobs							Error states								
PID	Command	Owner	State	Total	Done	Running	Waiting	Started	Saving	Validation	Execution	InputBox	Inserting	Saving	Registering	V.script	VT	Expired	Zombie
744647631	TaskTransverseEventShape.sh	hbelloma	DONE	7	7														
744647637	TaskTransverseEventShape.sh	hbelloma	DONE	37	37														
744647639	TaskTransverseEventShape.sh	hbelloma	DONE	3	3														
744647648	TaskTransverseEventShape.sh	hbelloma	DONE	8	8														
744663875	TaskTransverseEventShape.sh	hbelloma	DONE	16	16														
744672075	TaskTransverseEventShape.sh	hbelloma	DONE	5	5														
744672149	TaskTransverseEventShape.sh	hbelloma	DONE	6	6														
744672150	TaskTransverseEventShape.sh	hbelloma	DONE	7	7														
744672151	TaskTransverseEventShape.sh	hbelloma	DONE	11	11														
744672154	TaskTransverseEventShape.sh	hbelloma	DONE	5	5														
744672158	TaskTransverseEventShape.sh	hbelloma	DONE	33	33														
744672169	TaskTransverseEventShape.sh	hbelloma	DONE	6	6														
744672184	TaskTransverseEventShape.sh	hbelloma	DONE	27	27														
744672319	TaskTransverseEventShape.sh	hbelloma	DONE	19	19														
744672517	TaskTransverseEventShape.sh	hbelloma	DONE	13	13														
744672518	TaskTransverseEventShape.sh	hbelloma	DONE	26	25														
744673415	TaskTransverseEventShape.sh	hbelloma	DONE	8	8														
744682321	TaskTransverseEventShape.sh	hbelloma	DONE	16	14														
744683485	TaskTransverseEventShape.sh	hbelloma	DONE	11	11														
744683486	TaskTransverseEventShape.sh	hbelloma	DONE	7	7														
744683487	TaskTransverseEventShape.sh	hbelloma	DONE	7	7														
744683488	TaskTransverseEventShape.sh	hbelloma	DONE	27	27														
744683500	TaskTransverseEventShape.sh	hbelloma	DONE	23	23														
744683525	TaskTransverseEventShape.sh	hbelloma	DONE	42	42														
744683527	TaskTransverseEventShape.sh	hbelloma	DONE	11	11														
744683528	TaskTransverseEventShape.sh	hbelloma	DONE	8	8														
744683671	TaskTransverseEventShape.sh	hbelloma	DONE	7	7														
744683753	TaskTransverseEventShape.sh	hbelloma	DONE	23	23														
744683892	TaskTransverseEventShape.sh	hbelloma	DONE	16	16														
744683893	TaskTransverseEventShape.sh	hbelloma	DONE	16	16														
744686199	TaskTransverseEventShape.sh	hbelloma	DONE	16															
744691458	TaskTransverseEventShape.sh	hbelloma	DONE	36	36														
744691459	TaskTransverseEventShape.sh	hbelloma	DONE	6	6														
744691460	TaskTransverseEventShape.sh	hbelloma	DONE	17	17														
744691461	TaskTransverseEventShape.sh	hbelloma	DONE	16	16														
744691462	TaskTransverseEventShape.sh	hbelloma	DONE	17	17														
744691463	TaskTransverseEventShape.sh	hbelloma	DONE	8	8														
744691465	TaskTransverseEventShape.sh	hbelloma	DONE	22	22														
744691466	TaskTransverseEventShape.sh	hbelloma	DONE	4	4														
744691485	TaskTransverseEventShape.sh	hbelloma	DONE	54	54														
744691486	TaskTransverseEventShape.sh	hbelloma	DONE	24	24														
744691495	TaskTransverseEventShape.sh	hbelloma	DONE	9	9														

```
const Int_t nMultbins = 13;
```

```
Double_t Multbins[nMultbins+1]={ 0.0, 1.0, 4.0, 7.0,
10.0, 15.0, 20.0, 25.0, 30.0, 40.0, 50.0, 60.0, 70.0, 140.0 };
```

```
const Int_t nSobins = 4;
```

```
Double_t Sobins[nSobins+1] = { 0.0, 0.2, 0.4, 0.7, 1.0 };
```

Some requirements of Antonio to compare efficiency for different bins of multiplicity and different sphericity selection.

Questions to answer:

Which has the best efficiency S_0 or S_t ?

What is the best? To cut directly with ES bins or to select percentages (10%) of the ES distribution)

To Do:

- Commit the Task in AliRoot
- Get the full comparison with the efficiency.
- Get the spectra corrected by the efficiency for the new sphericity selection and multiplicity binning.

Looking for events with SpheroCity and high Multiplicity

```
Int_t EventRun= fESD->GetRunNumber();
```

To get info



```
TFile *curfile = AliAnalysisManager::GetAnalysisManager()->GetTree()->GetCurrentFile();
```

```
TString fileName = curfile->GetName();
```

```
Int_t fEventInFile = fESD->GetEventNumberInFile();
```

```
while ( fileName.Tokenize(tok,from,"/")){ N++;
```

```
    if(n==10) chunkname0=tok; }
```

```
chunkname1=chunkname0;
```

To separate the characters



```
while ( chunkname1.Tokenize(tok2,from2,"15000")){N2++;
```

```
    if(n2==2) chunkname2=tok2;}
```

```
chunkname=chunkname2;
```

```
Int_t ncarac=strlen(chunkname2);
```

```
Double_t chunknum= atof(chunkname2);
```

```
if(fValES>0){
```

```
    for(Int_t soi=0; soi<Sobins2+1; soi++){
```

```
        if(fValES>=sobinsl[soi] && fValES<sobinsl[soi+1])
```

To fill for the So
mult selection



```
            hSoVsEvtperRun[soi]Y Fill(chunknum,fEventInFile,nTracks);
```

```
    } }
```

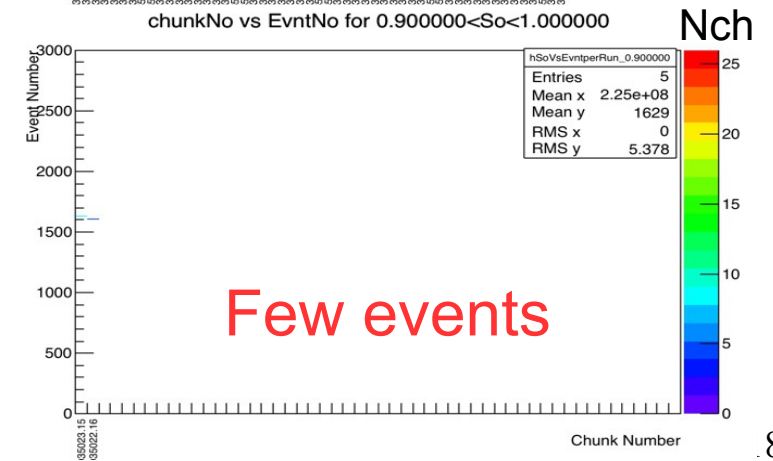
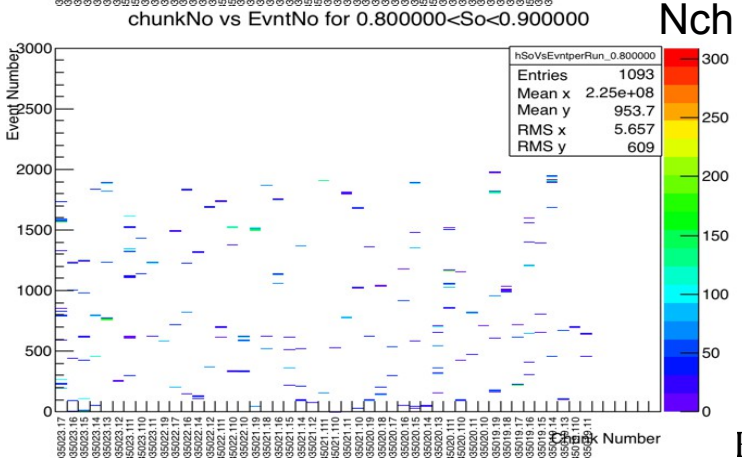
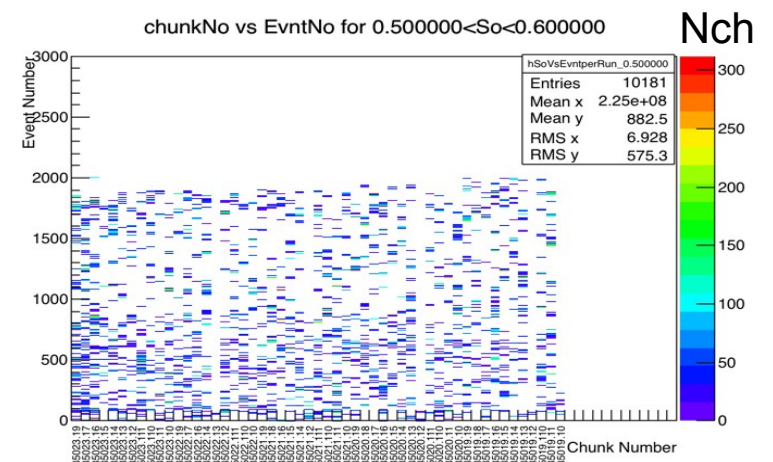
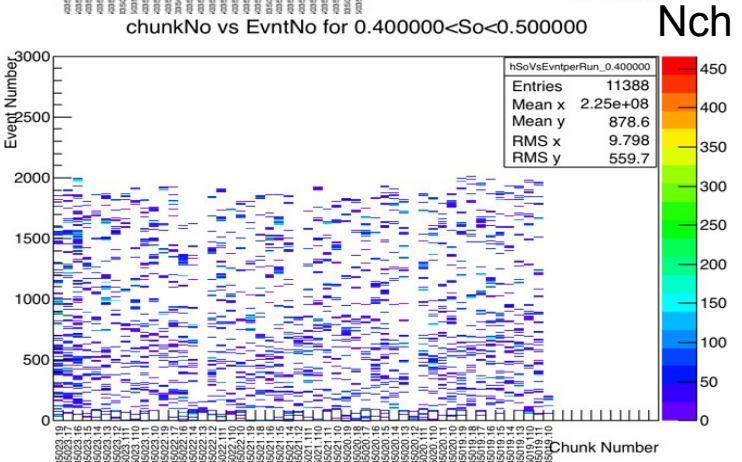
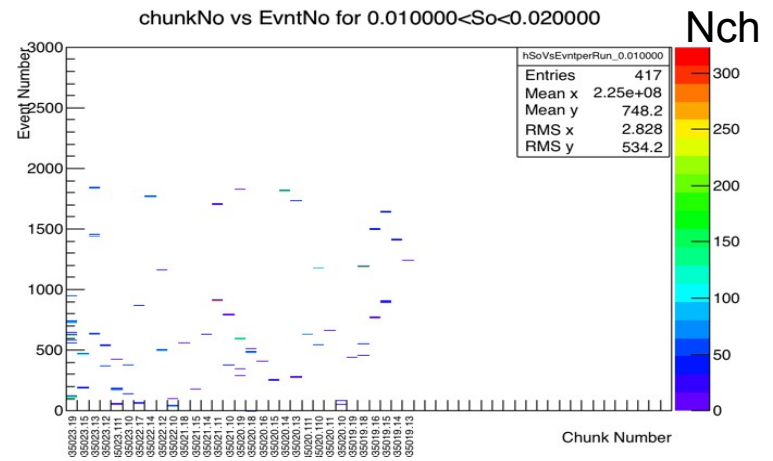
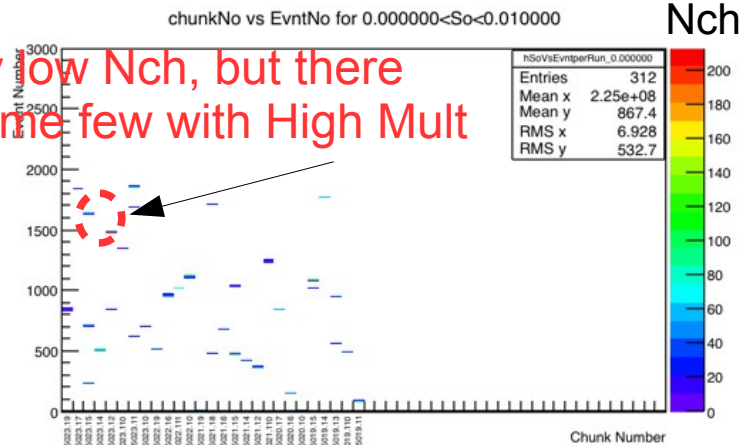
Thanks to tips
from:

Dr. Antonio,
Dr.Mario,

C++ tutorials

Events (Run 225035 Grid) Sphericity and high Multiplicity

Mostly low Nch, but there are some few with High Mult

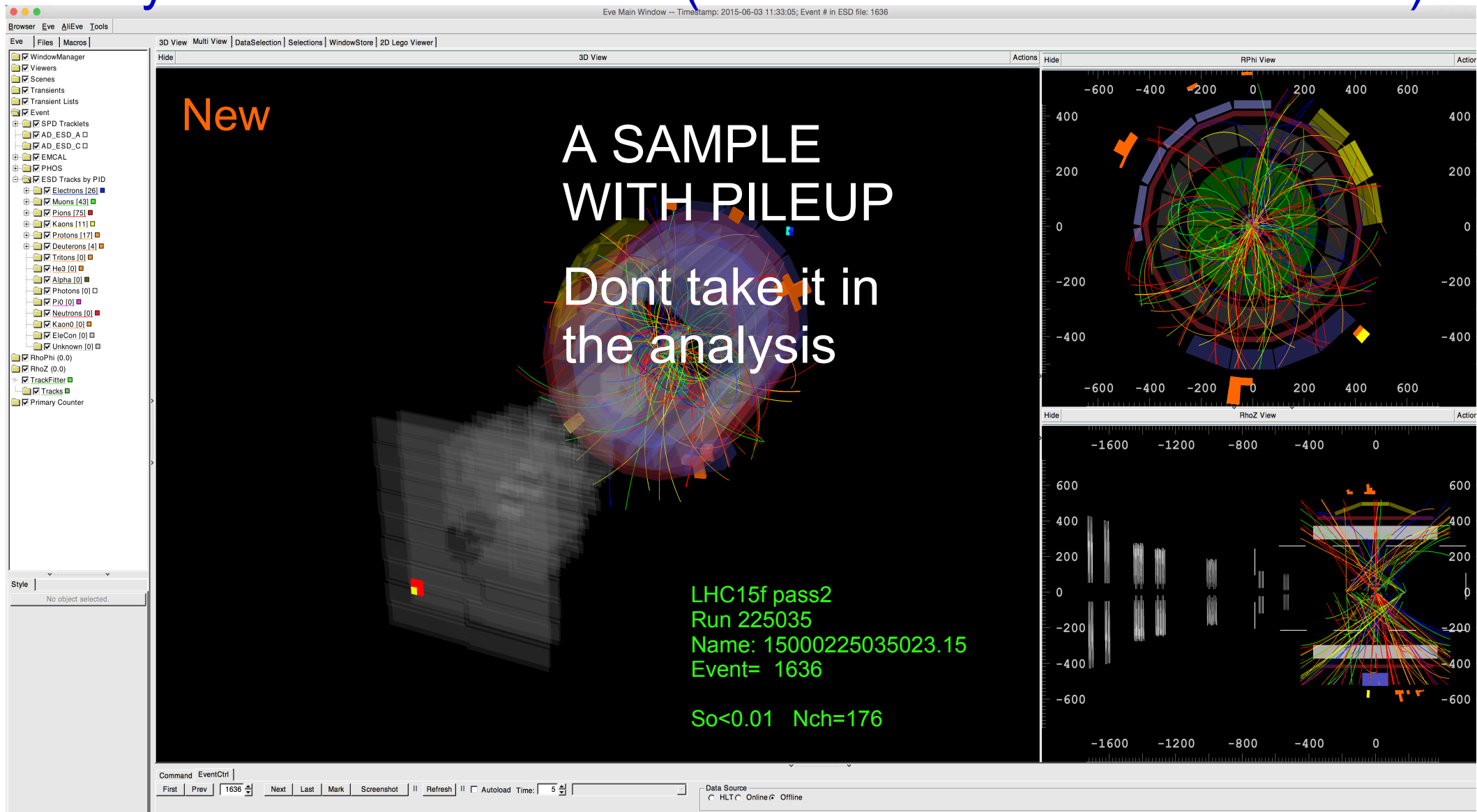


Hector Bello Martinez

Events in white don't pass the physics selection

Visualization for events selected with Sphericity:

Jetty $S_o < 0.01$ but low mult (now HM event has been found)



Visualization for events selected with Spherocity:

Jetty $S_o < 0.01$ but low mult (now HM event has been found)

