

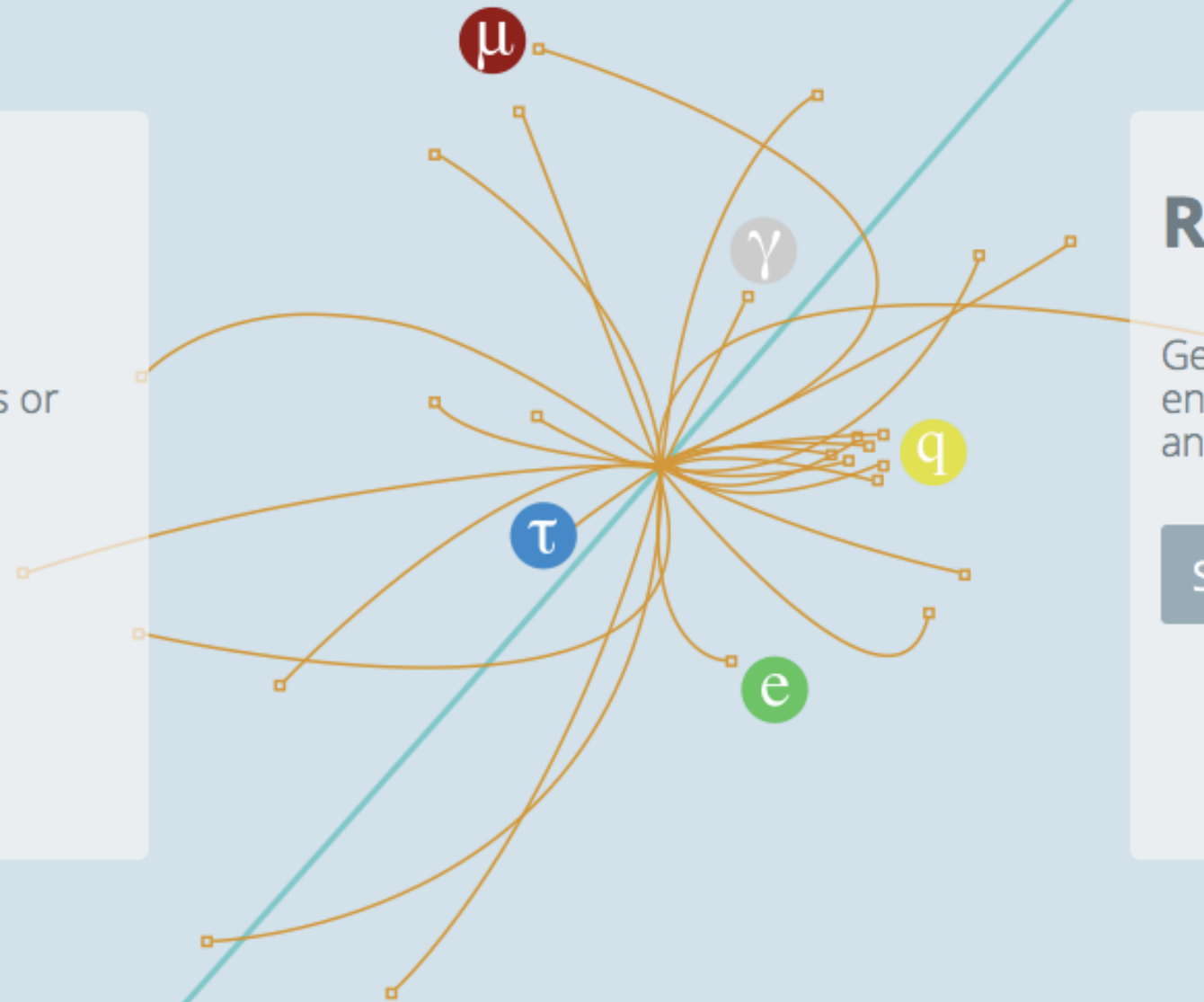
Uso de datos públicos del CERN en el aula

Una invitación y una microguía

Education

Visualise events, check reconstructed data, run tools or build your own!

[Start learning](#)



Research

Get the genuine working environments, virtual machines and datasets to start your research

[Start analysing](#)

Education



The CMS (Compact Muon Solenoid) experiment is one of two large general-purpose detectors built on the Large Hadron Collider (LHC). Its goal is to investigate a wide range of physics such as the characteristics of the Higgs boson, extra dimensions or dark matter.

[Explore CMS >](#)



ALICE (A Large Ion Collider Experiment) is a heavy-ion detector designed to study the physics of strongly interacting matter at extreme energy densities, where a phase of matter called quark-gluon plasma forms. More than 1000 scientists are part of the collaboration.

[Explore ALICE >](#)



The ATLAS (A Toroidal LHC ApparatuS) experiment is a general-purpose detector exploring topics like the properties of the Higgs-like particle, extra dimensions of space, unification of fundamental forces and evidence for dark matter candidates in the Universe.

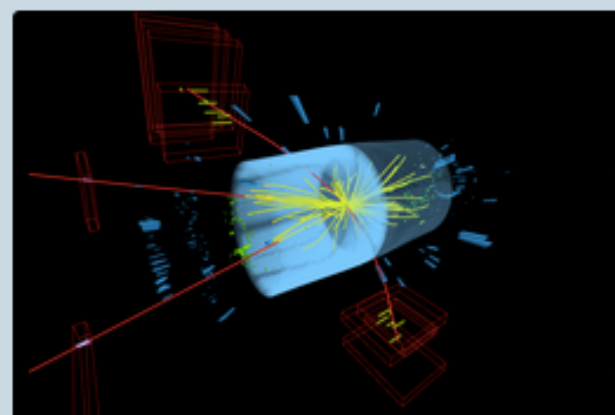
[Explore ATLAS >](#)



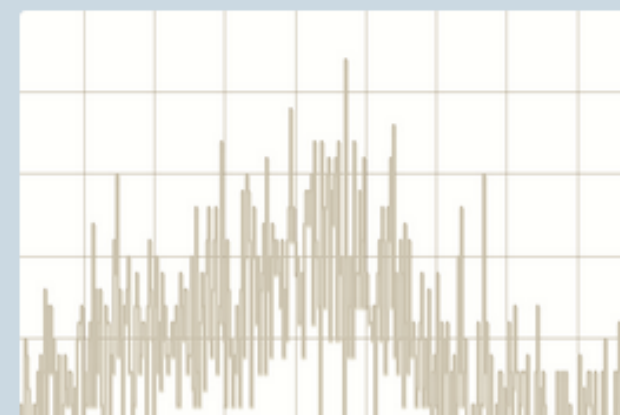
The LHCb (Large Hadron Collider beauty) experiment aims to record the decay of particles containing b and anti-b quarks, known as B mesons. The detector is designed to gather information about the identity, trajectory, momentum and energy of each particle.

[Explore LHCb >](#)

For education purposes, the complex primary data need to be processed into a format (examples below) that is good for simple applications. Get in touch if you wish to build your own applications similar to those shown here



[Visualise events >](#)



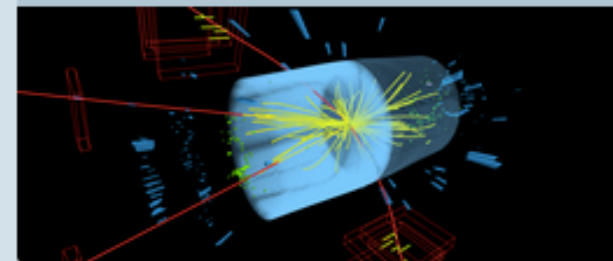
[Visualise histograms >](#)



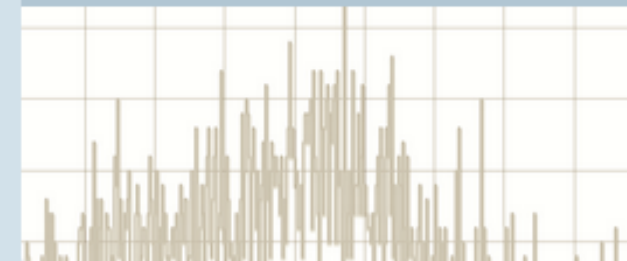
[Learning Resources >](#)

The CMS (Compact Muon Solenoid) experiment is one of two large general-purpose particle physics detectors built on the Large Hadron Collider (LHC) at CERN in Switzerland and France. The goal of CMS is to investigate a wide range of physics, including properties of the recently discovered Higgs boson as well as searches for extra dimensions and particles that could make up dark matter.

Visualise events



Visualise histograms



CMS Derived Datasets

This collection includes data that have been derived from the CMS primary datasets

Years: 2010, 2011

Total records:

59

CMS Tools

This collection includes tools with which the CMS open data can be accessed and used

Years: 2010, 2011

Total records:

17

CMS Learning Resources

This collection includes learning resources that use CMS public data

Total records:

6

CMS Derived Datasets

This collection includes data that have been derived from the CMS primary datasets. The data may be reduced in the sense that (a) only part of the information is kept or (b) only part of the events are selected. Datasets include those which may be accessed using the VM image of the CMS environment or those which are adapted for other tools and applications. The tools and instructions to access and use these data are linked to each record.

Muons and electrons in PAT candidate format derived from /Mu/Run-2010B-Apr21ReReco-v1/AOD primary dataset

Preprocessed data for the two-lepton/four-lepton analysis example

Collection CMS-Derived-Datasets DOI 10.7483/OPENDATA.CMS.RJW2.QP44 Author Rodriguez Marrero, Ana

Parent Dataset /Mu/Run-2010B-Apr21ReReco-v1/AOD

Muons and electrons in PAT candidate format derived from /Electron/Run-2010B-Apr21ReReco-v1/AOD primary dataset

Data preprocessed for the two-lepton/four-lepton analysis example

Collection CMS-Derived-Datasets DOI 10.7483/OPENDATA.CMS.HHTK.9FS2 Author Rodriguez Marrero, Ana

Parent Dataset /Electron/Run-2010B-Apr21ReReco-v1/AOD

MC: single top sample from the CMS HEP Tutorial

MC: single top sample generated with Powheg, triggered on simulated isolated Muons with $p_T > 24$ GeV corresponding to an integrated luminosity of 50 fb^{-1} .

Collection CMS-Derived-Datasets Author Sander, Christian; Schmidt, Alexander

more >

Collection CMS-Derived-Datasets Author Sander, Christian; Schmidt, Alexander

MC: QCD sample from the CMS HEP Tutorial

MC: QCD sample generated with Pythia, triggered on simulated isolated Muons with $p_T > 24$ GeV corresponding to an integrated luminosity of 50 fb⁻¹.

Collection CMS-Derived-Datasets Author Sander, Christian; Schmidt, Alexander

Higgs candidate events for use in education and outreach

This document contains Higgs candidate events (with an invariant mass between 120-130 GeV) that have been released by CMS for use in education and outreach: 10 gamma-gamma events, one 2e2mu event, one 4mu event and one 4e event.

Collection CMS-Derived-Datasets Author McCauley, Thomas

DOI 10.7483/OPENDATA.CMS.N9MJ.QEEC

Dimuon events with invariant mass range 2-5 GeV for public education and outreach

The collaboration approved 2000 dimuon events around the J/psi for use in education and outreach. This record contains the necessary files for these use-cases.

Collection CMS-Derived-Datasets Author McCauley, Thomas

DOI 10.7483/OPENDATA.CMS.SW96.PFX3

<http://opendata.cern.ch/search?cc=CMS-Derived-Datasets&ln=en&jrec=51>

Showing records 51 to 59 out of 59 results.

Example CSV output file for SUSYBSMAnalysis-RazorFilter

This file contains events from the Multijet primary dataset from the CMS open data release, and computes the razor variables MR and Rsq, used in supersymmetric particle searches. More details on the razor variables can be found in Phys. Rev

Collection CMS-Derived-Datasets DOI 10.7483/OPENDATA.CMS.GACK.GEJA Author Duarte, Javier

Parent Dataset /Multijet/Run2010B-Apr21ReReco-v1/AOD

Dimuon event information derived from the Run2010B public Mu dataset

This document contains 100k dimuon events selected from the Mu dataset from Run2010B. Each line corresponds to an event. The main file contains all 100k events

Collection CMS-Derived-Datasets Author McCauley, Thomas

DOI 10.7483/OPENDATA.CMS.CB8H.MFFA Parent Dataset /Mu/Run-2010B-Apr21ReReco-v1/AOD

Muons and electrons in PAT candidate format derived from /Mu/Run-2010B-Apr21ReReco-v1/AOD primary ...

Preprocessed data for the two-lepton/four-lepton analysis example

Dimuon events with invariant mass range 2-5 GeV for public education and outreach

McCauley, Thomas

Cite as: [McCauley, T. \(2014\). Dimuon events with invariant mass range 2-5 GeV for public education and outreach. CERN Open Data Portal. DOI: 10.7483/OPENDATA.CMS.SW96.PFX3](#)

Collection CMS Derived Datasets Accelerator CERN-LHC Experiment CMS

Description

The collaboration approved 2000 dimuon events around the J/ψ for use in education and outreach. This record contains the necessary files for these use-cases.

Preview

iSpy WebGL

dimuon-Jpsi_3.lg:Events/Run_140124/Event_1026762916 [1 of 100]

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Detector


Pixel Barrel

Pixel Endcap (+)

Pixel Endcap (-)

Tracker Inner Barrel

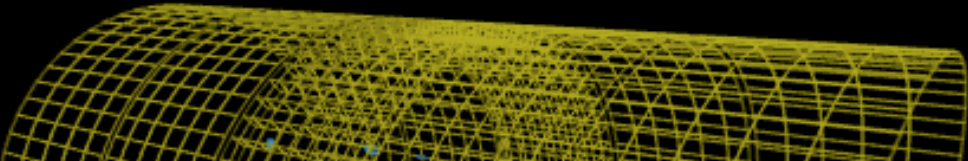
Tracker Outer Barrel



CMS Experiment at the LHC, CERN

Data recorded: 2010-Jul-14 09:01:25.117683 GMT

Run / Event / LS: 140124 / 1026762916 / 1158



A1	f _x	Σ	=	Type									
	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Type	Run	Event	E1	px1	py1	pz1	pt1	eta1	phi1	Q1	E2	px2
2	GT	140124	1007912007	13.7061	4.88649	-2.5086	12.5569	5.4928006044	1.564708153	-0.4742899747	1	3.67389	-0.68
3	GT	140124	1007957044	9.09052	-2.16135	-2.96392	-8.31686	3.6682769237	-1.5571370107	-2.2008651123	-1	3.80945	0.787
4	GG	140124	1008000431	6.81754	5.76035	3.23987	-1.67015	6.6089628339	-0.2500945607	0.5123463528	1	19.1486	12.8
5	GT	140124	1008032300	31.8853	-5.85709	2.78331	-31.2188	6.48477585	-2.2753268595	2.6979782463	1	4.26886	-1.50
6	GT	140124	1008075983	13.5527	1.18694	-2.35966	-13.2924	2.641367426	-2.3187715021	-1.1047411075	1	4.36207	1.19

iSpy WebGL

dimuon-Jpsi_3.ig:Events/Run_140124/Event_1027160502 [10 of 100]

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▼ Detector ℹ️

Pixel Barrel

Pixel Endcap (+)

Pixel Endcap (-)

Tracker Inner Barrel

Tracker Outer Barrel

Tracker Inner Detector (+)

Tracker Inner Detector (-)

Tracker Endcap (+)


Tracker Endcap (-)

ECAL Barrel

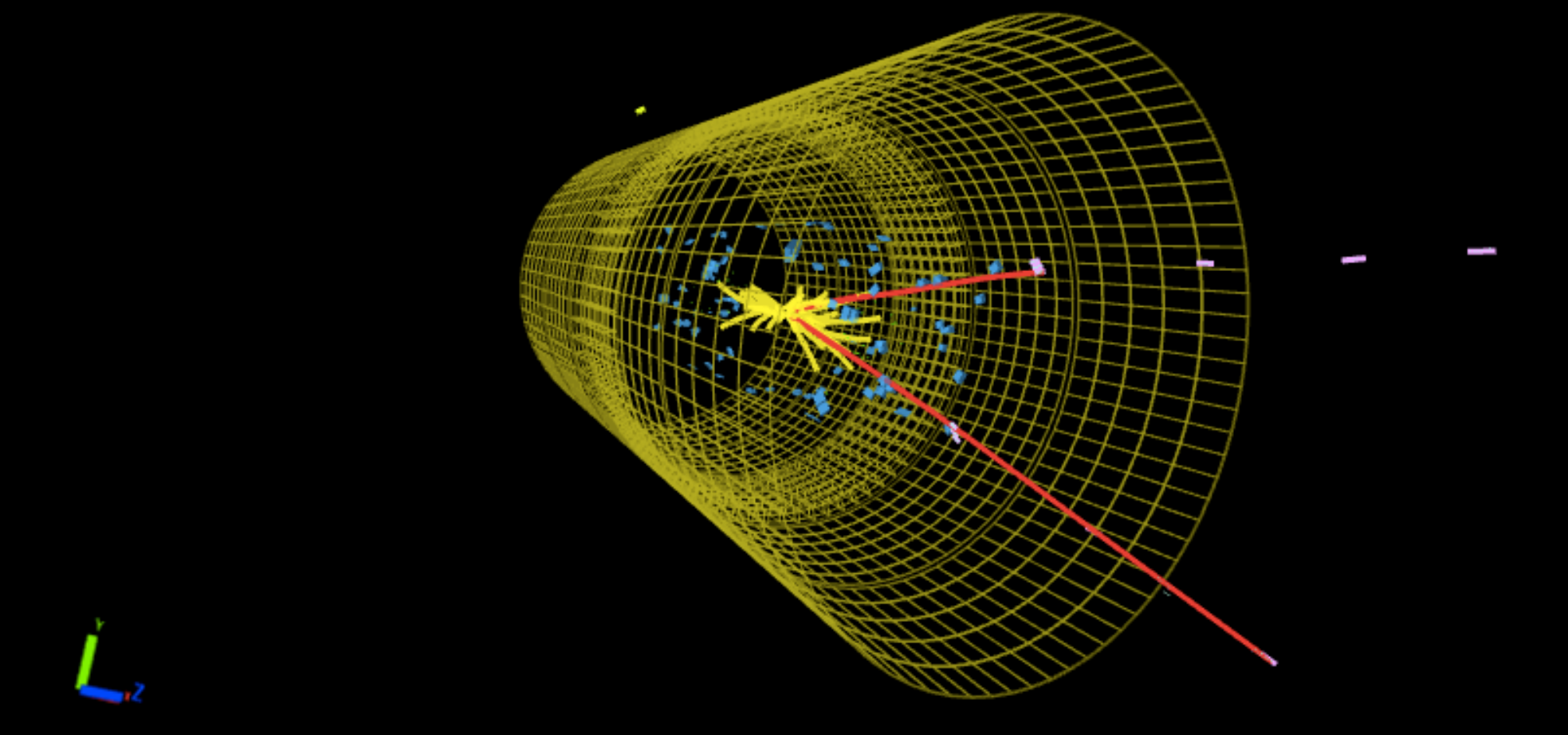
ECAL Endcap (+)

ECAL Endcap (-)

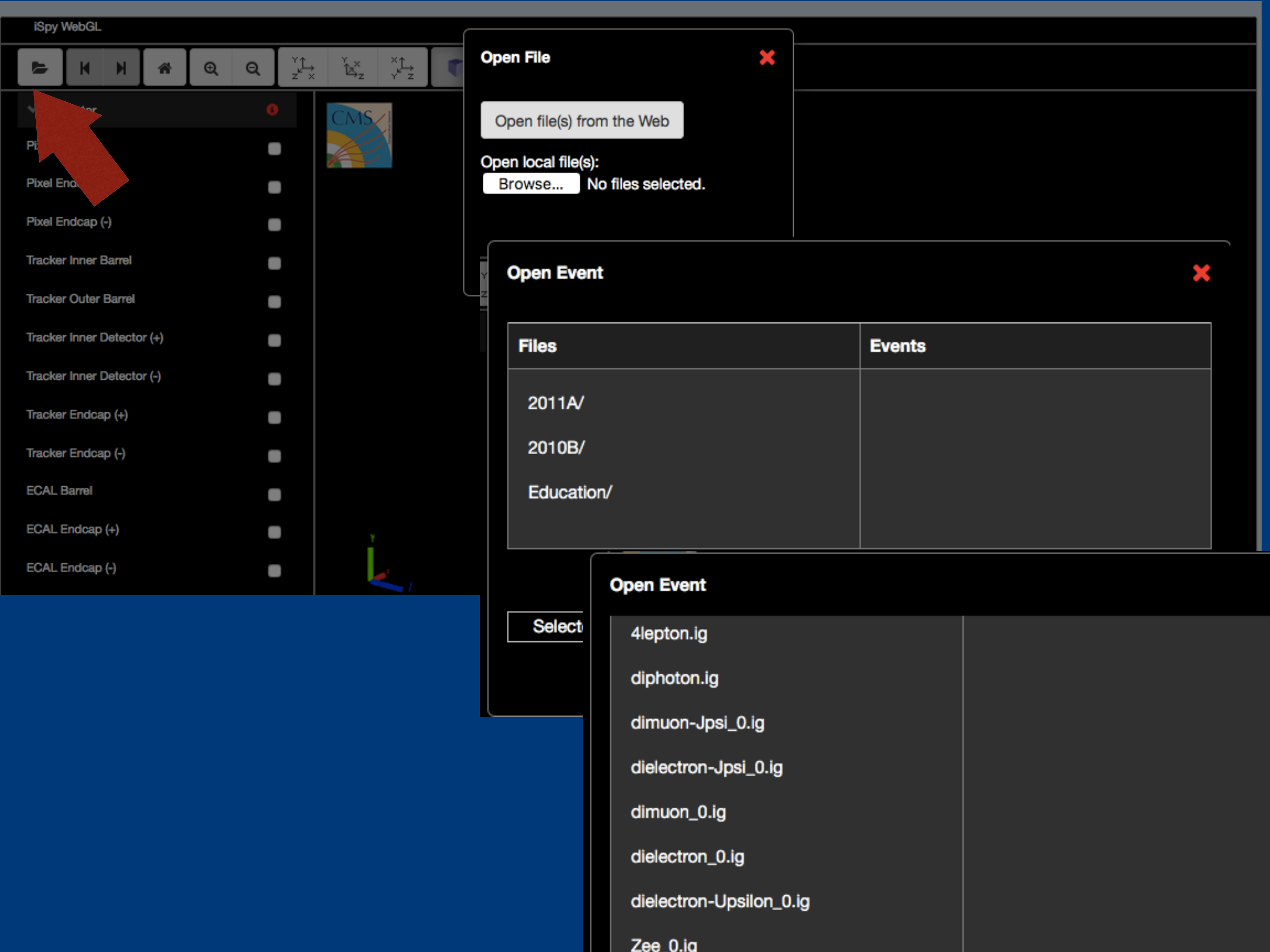
HCAL Barrel



CMS Experiment at the LHC, CERN
Data recorded: 2010-Jul-14 09:01:35.633975 GMT
Run / Event / LS: 140124 / 1027160502 / 1158



Click on a name under "Provenance", "Tracking", "ECAL", "HCAL", "Muon", and "Physics" to view contents in table



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Open Event



Files

Events

2011A/

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Education/

Select

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diphoton.ig

dimuon-Jpsi_0.ig

dielectron-Jpsi_0.ig

dimuon_0.ig

dielectron_0.ig

dielectron-Upsilon_0.ig

Zee_0.ig