

ALICE@CERN open access portal

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ALICE offline week
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Open Access initiative@CERN

- General principles of Open Access
 - Provide open access to scientific data, including software and documentation
 - Reproduce any analysis any time in the future by anybody
- Current implementation at CERN
 - OpenAccess web portal hosting data and applications by experiments
 - Coherent style and organisation for all experiments
 - Possibility to host and make public data releases according each experiment policy
 - Only CMS releases some ~10 Tbytes of data so far
 - Target audience: **mainly education**
 - Interested citizen, students of physics

ALICE open access

opendata.cern.ch



ALICE datasets
...



ALICE analysis modules
...



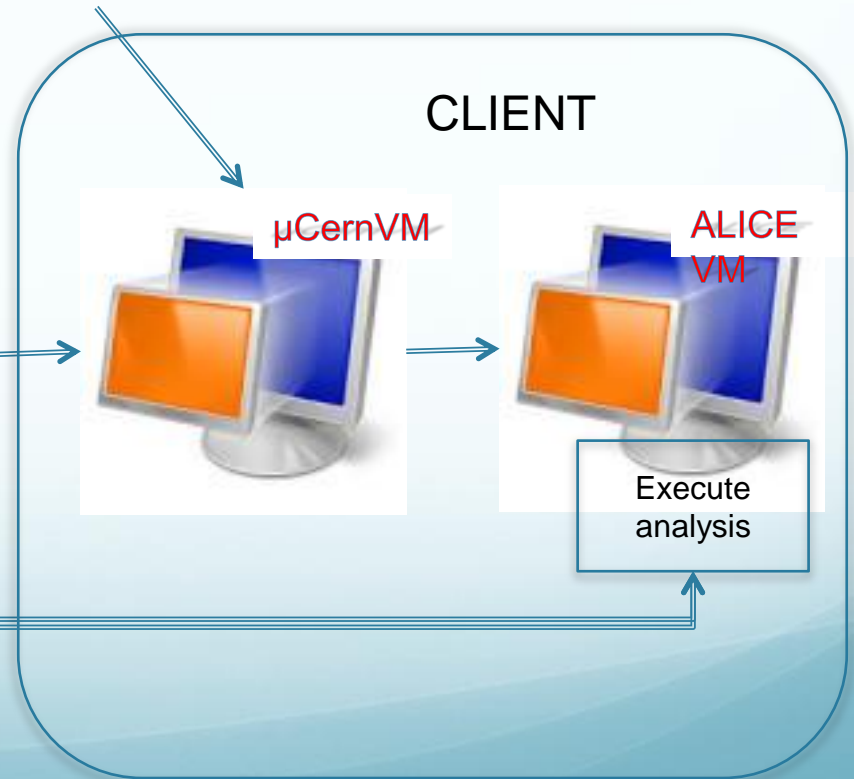
ATLAS
ALICE
CMS
LHCb



Documentation

VM installation guide

- Provide a custom VM running masterclass examples
- Upgrade in future by adding simple analysis examples
 - Currently the Pt analysis tutorial



CLIENT

μCernVM

ALICE VM

Execute analysis

opendata.cern.ch

- Under construction
 - ALICE + CMS started the exercise, the others came after
- Available already:
 - ALICE: CernVM installation guide + ALICE context, running a GUI where different analysis can be selected
 - Strangeness + RAA **masterclasses** (including event display)
 - Pt analysis task to demonstrate how to use analysis framework
 - CMS: Masterclasses, visualisation tools and data (2010)
 - CernVM with example code for Z decays to two leptons and ZZ decays to 4 leptons
 - iSpy: a browser-based event display for CMS
 - LHCb & ATLAS: Their masterclass setups
 - Corresponding derived datasets used by masterclasses

Data available via portal

- Stored on public IT xrootd server
- ALICE:
 - 2 primary datasets, 1 for pp, and 1 for PbPb, 2010
 - 3 ESD files from run 138275 (LHC10h pass2)
 - 2 ESD files from run 117222 (LHC10b pass3)
 - Used just to be able to run the inclusive Pt demonstrating the framework
 - 1 VSD derived dataset used for RAA masterclass (10 files)
- CMS:
 - 14 primary datasets from 2010
 - Few TBytes each, many triggers
 - 27 derived datasets used by their event display
- ATLAS & LHCb:
 - Derived datasets needed for masterclasses
- No MC for any experiment

Metadata for datasets

- We were asked to provide a metadata representation for the published datasets
 - Containing global and per file information
- The existing AliEn xml datasets not appropriate since the file catalog not exposed
 - Preferred format: JSON
- The same format is usable directly by the application embedded in the ALICE VM
 - Embedded JSON parser
 - Providing access to the open access xrootd storage holding the public data

JSON metadata

```
Dataset": {  
  "name": "LHC2010h_PbPb_ESD_138275",  
  "description": "Pb-Pb ESD data sample at 3.5 TeV",  
  "path": "/eos/opendata/alice/2010/LHC10h/000138275/ESD",  
  "files": 3,  
  "file_details": [  
    {  
      "file_path": "/eos/opendata/alice/2010/LHC10h/000138275/ESD/0000/AliESDs.root",  
      "file_size": 200762886,  
      "file_checksum": "41b466d6eb9bbe978ac70bb96c733ae7",  
      "file_timestamp": "2014-09-24 12:32:31"  
    },  
    {  
      "file_path": "/eos/opendata/alice/2010/LHC10h/000138275/ESD/0001/AliESDs.root",  
      "file_size": 225890865,  
      "file_checksum": "1548a2f4ffab8015c04f378ece2c9442",  
      "file_timestamp": "2014-09-24 12:32:35"  
    },  
    {  
      "file_path": "/eos/opendata/alice/2010/LHC10h/000138275/ESD/0002/AliESDs.root",  
      "file_size": 222416778,  
      "file_checksum": "c0a463c41b3629b2eff0866671887e93",  
      "file_timestamp": "2014-09-24 12:32:38"  
    }  
  ]  
}
```

Portal organisation

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

[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

[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

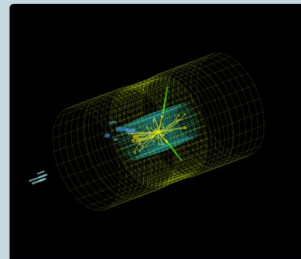
[Explore ATLAS >](#)



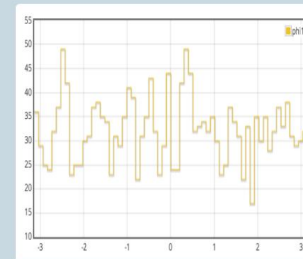
The LHCb (Large Hadron Collider beauty) experiment aims to record the decay of particles containing b and anti-b quarks, known as B mesons. The detector is designed to gather information about the identity,

[Explore LHCb >](#)

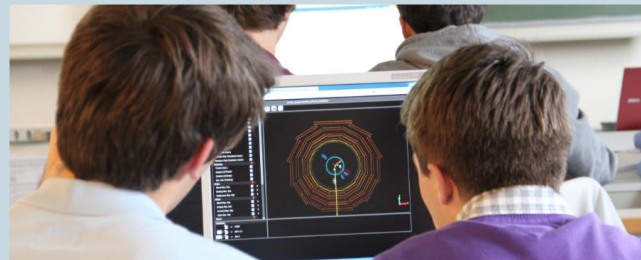
For education purposes, the complex primary data need to be processed into a format (examples below) that is good for simple applications. Get in touch if you wish to build your own applications similar to those shown here



[Visualise events >](#)



[Visualise histogram >](#)



[Learning Resources >](#)

Portal organisation

Education

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DEMO

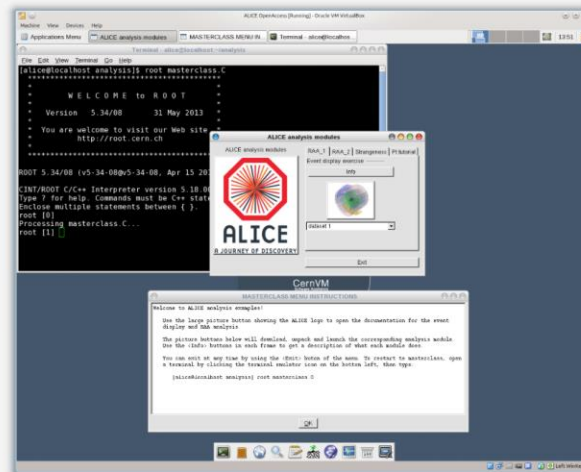
ABOUT SEARCH EDUCATION RESEARCH

Getting started > ALICE

Learn how to use the ALICE virtual machine to have a first look at ALICE events and use analysis tools

"How do I start the ALICE software?"

After successfully installing the ALICE VM you should contextualize it as described here [link to installation guide]. Note that you should pick from the CernVM market the "ALICE OpenAccess" item from the list of available ALICE contexts. When starting the VM, this will automatically login the user "alice" (password "alice") and start a graphical user interface allowing to run the ALICE masterclasses as well as a basic tutorial on how to run a custom analysis on ALICE data. There is no need to setup the software; both the software tools and the environment are automatically set to use the supplied analysis tools.



Portal organisation

Education

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DEMO

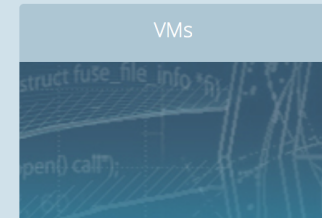
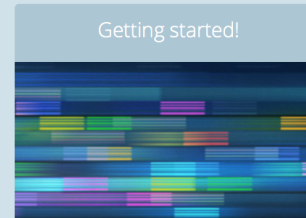
ABOUT SEARCH EDUCATION RESEARCH

 Search

Home > Education > ALICE

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.

The ALICE collaboration uses the 10,000-tonne ALICE detector – 26 m long, 16 m high, and 16 m wide – to study quark-gluon plasma. The detector sits in a vast cavern 56 m below ground close to the village of St Genis-Pouilly in France, receiving beams from the LHC. More than 1000 scientists are part of the collaboration.



**Have a look!
The style is common, but
suggestions on the
content are welcome**

ALICE Derived Datasets

This collection contains reduced information for the reconstructed tracks and their associated clusters from a set of PbPb ...

Total records:
1

ALICE Reconstructed Data

This collection contains files with reconstructed ALICE events in the Event Summary Data (ESD) format and they can be used ...

Total records:
2

ALICE Tools

This collection contains all software packages needed to run a set of ALICE physics masterclasses and a simple ESD-based ...

Total records:
5

ALICE Learning Resources

Plans

- Portal will be advertised to public soon
 - Still few issues on format and content to be fixed until the alpha release
- ALICE: waiting for the PB decision for adding few more datasets
 - Few runs for pp and PbPb 2010
 - Will allow running more complex examples
- Gradually adding more analysis modules
 - Preferably reproducing published results
 - Without need of OCDB/AliEn
 - Preferably AOD data