pylcio: Run over LCIO/stdhep files with Python

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Today's Topics

- pylcio
- `ilcdirac` recent activities.

pylcio

Motivation

2012: C. Grefe made available the bindings to run over LCIO files with `python` .

- Another example of the productive synergy between CLIC,ILC
  - `ilcdirac` , LCFIPlus, IsolatedLeptonFinder, ...
- Very convenient tool:
  - No need to compile, fast development.
  - Clear syntaxis, shorter code.
  - Easy to port your existent c++ utilities.
  - Benefict of the `python` memory management capabilities.
  - Elegant, fun.
- I encourage asian physics/software group to get familiar and use pylcio.

Two classes provide access to the event information

- You just need to know a minimum `python` and use following clases:
    - LcioReader
    - StdHepReader

```
reader = LcioReader.LcioReader( "file.slcio" )
reader = StdHepReader.StdHepReader( "file.stdhep" )
```

- Then, you can access all event collections, pick up the information you like, process it and output then in a ROOT ntuple.

- Powerful, right? Wait and see the real power ...

- Loop over all events in the file:

```
for n in range( reader.getNumberOfEvents() ):
  event = reader.next()
  mcCol = event.getCollection("MCParticle")
  for mc in mcCol:
    print 'pdg %s'%str( mc.getPDG() )
```

- You also have access to all the ROOT classes.

```
p = mc.getMomentum()
E = mc.getEnergy()
p4vec = ROOT.TLorentzVector( p[0],p[1],p[2],E )
```

See Full Examples on kekcc:

- /home/ilc/calancha/public/pylcio/runanal.py

- /home/ilc/calancha/public/pylcio/runanal_stdhep.py

```
ilcdirac
```

Improving `ilcdirac` Tools

- Im preparing a main upgrade in the filecatalog client.
  - Refactoring code to avoid code duplication.
  - Increasing speed.
  - Improving code style.

```
ilcdirac_users = ['tino', 'tian']
you = 'unknown-san'
if you in ilcdirac_users:
  print 'Stay tuned!'
else:
  print '%s, why not?' %you
```

Summary

pylcio is waiting for us: let's use it!

- pylcio has being around since 2012.
- Very convenient tool for running analysis and make plots.

- Improving dirac file catalog.