



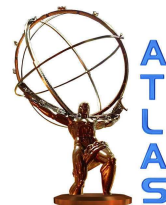
Herwig++ Exercise

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DESY





Herwig++ in ATLAS

- Herwig++ is a general-purpose Monte Carlo event generator for the simulations of lepton and hadron collisions.
- A control framework Athena provides interfaces to Herwig++ in package `Generators/Herwigpp_i`.
- To control an application configuration at run-time Athena uses `Job Options` files
- Herwig++ manuals: `0803.0883`, `1102.1672`



JobOptions

- algorithms' sequence

```
from AthenaCommon.AlgSequence import AlgSequence
topAlg = AlgSequence("TopAlg")
```

- default Herwig++ configuration

```
include("MC10JobOptions/MC10_Herwigpp_Common.py")
```

- list of Repository Commands

```
cmds += """
insert /Herwig/MatrixElements/SimpleQCD:MatrixElements[0] \
      /Herwig/MatrixElements/MEQCD2to2
"""
topAlg.Herwigpp.Commands = cmds.splitlines()
```



Commands

■ Repository state

save file – save current repository state

load file – load a repository

read file – read in additional commands from file

library lib – load the dynamic share library, making all classes available

■ Repository tree

pwd – print the current directory path

cd dir – change the current directory to *dir*

mkdir dir – make a directory

ls [dir] – list the entries

rmdir dir – remove an empty directory

rrmdir dir – remove a directory and all its contents

■ Event Generation

saverun run-name generator – save a *generator* as a file *run-name* ready for use with Herwig++ *run*

run run-name generator – run the *generator* object and save files under *run-name*



Commands

■ Classes, objects, interfaces

create classname name [library] – create a new object of C++ class

classname with *name* from *library*

mv old-name name – rename repository object

cp name – copy a repository object

get interface – get the current value of an interface

set interface value – set the value of an interface

insert vector-interface[index] value – insert a value into a vector of interface parameters

erase vector-interface[index] – remove a value from a vector of interface pars

describe object[:interface] – describe object and its interfaces

■ Other commands

decaymode tag BR active? decayer – register a decay mode

makeanti particle1 particle2 – register *particle1* to be anti- *particle2*

defaultparticle particle [particle] – register *particles* as default ones

setup object args ... – pass *args* to object's own setup function, i.e

setup particle ID PDG mass width cut ctau charge colour spin stable