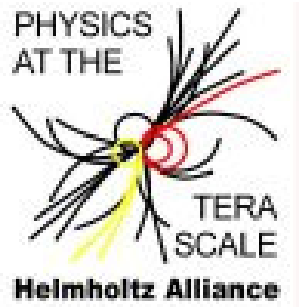
HepMCAnalysis Tool in ATLAS.



HepMC Analysis

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MC School 2011
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HELMHOLTZ GEMEINSCHAFT

DESY

introduction

- HepMCAnalysis is a framework for MC generator validation and comparison
  - covers many aspects from event generation and many physics processes
  - analysis based on generator independent HepMC event record
- in ATLAS already used in
  - private analysis on generator level
  - sample B validation (in addition to expert checks)
  - checks in RTT, regression tests

HepMCAnalysis Tool

- provides
  - example programs and steering files to run generators from Genser libraries
  - class library with physics analyses to produce root histograms
  - scripts for histogram comparison + web display
- released
  - latest version on hepmcanalysistool.desy.de
  - available through Genser
- interfaced to ATHENA in Generators/HepMCAnalysis_i

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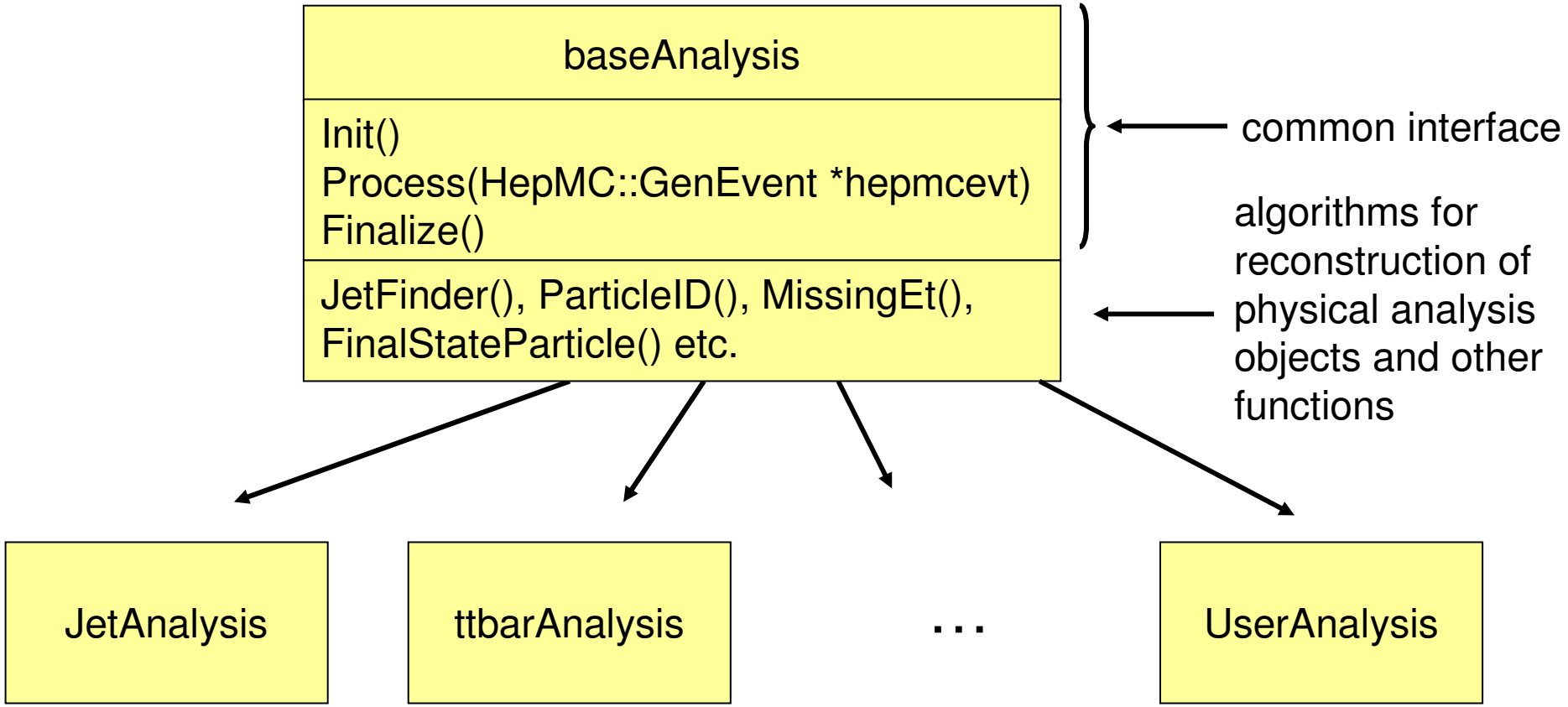
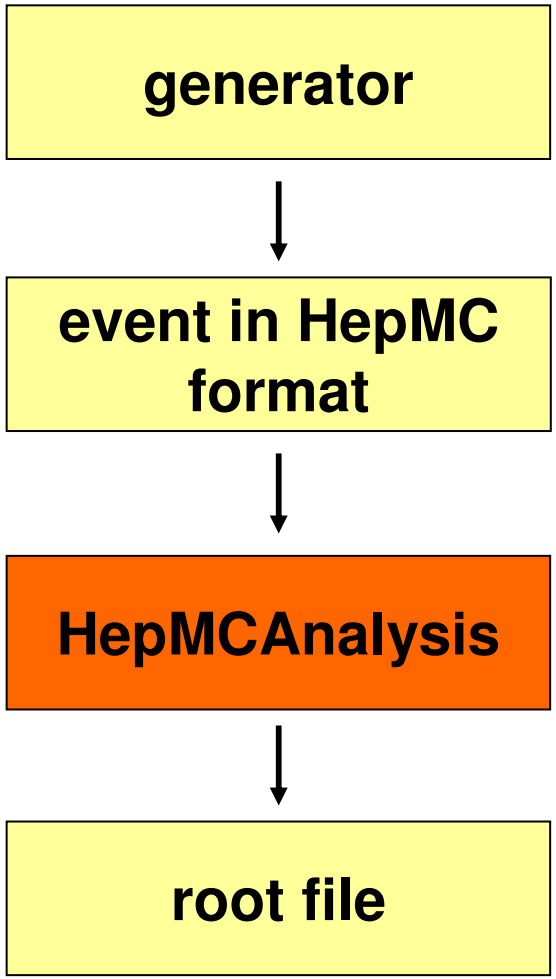
used for validation in ATHENA

physics analysis in class library



running standalone tool

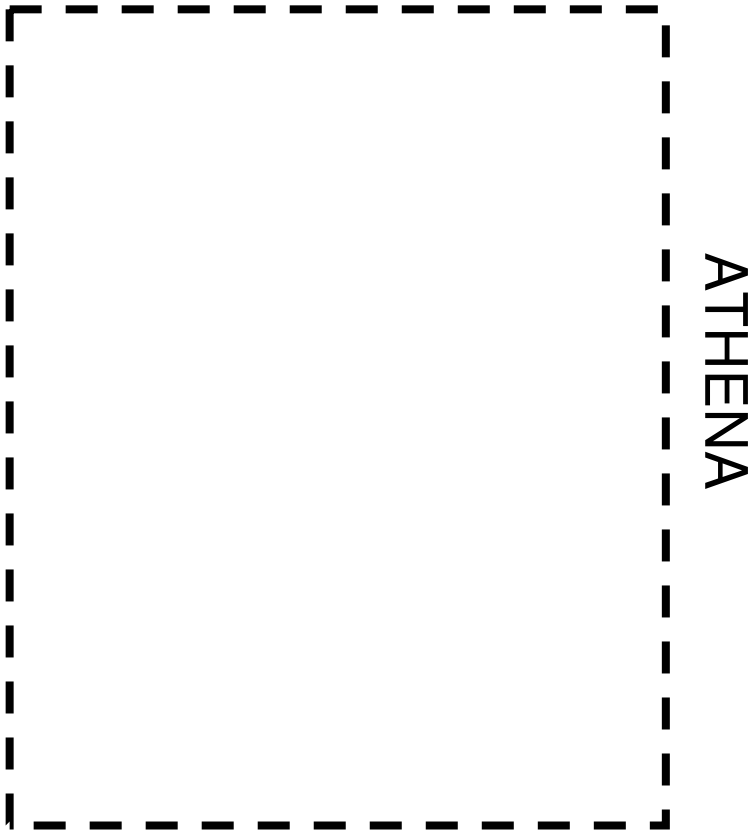


example programs and steering files

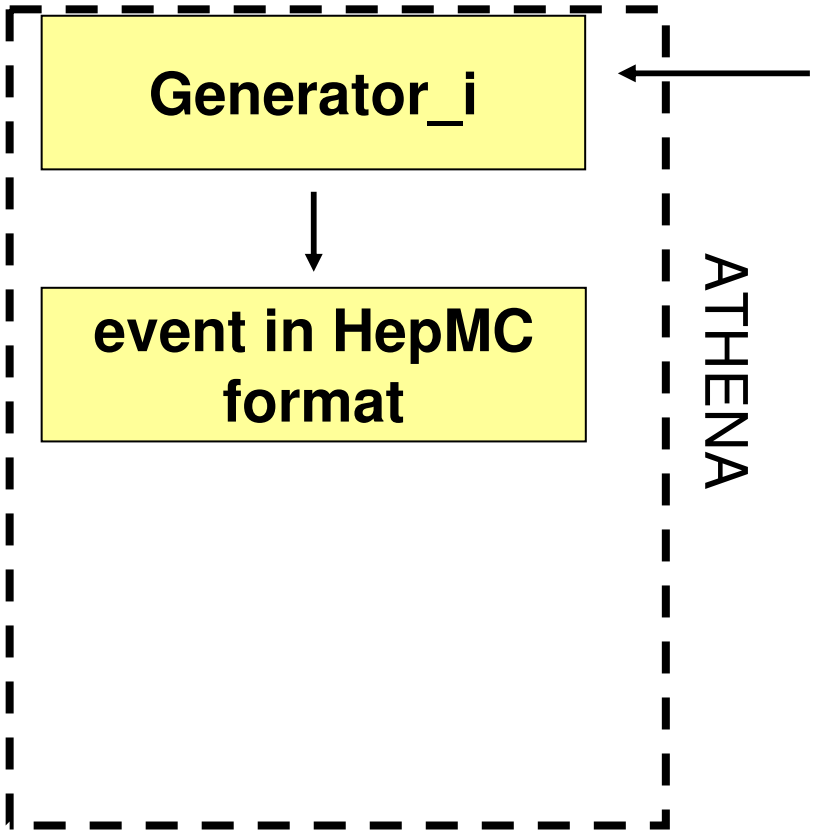
class library with physics analyses

scripts for comparison + web display

run in ATHENA

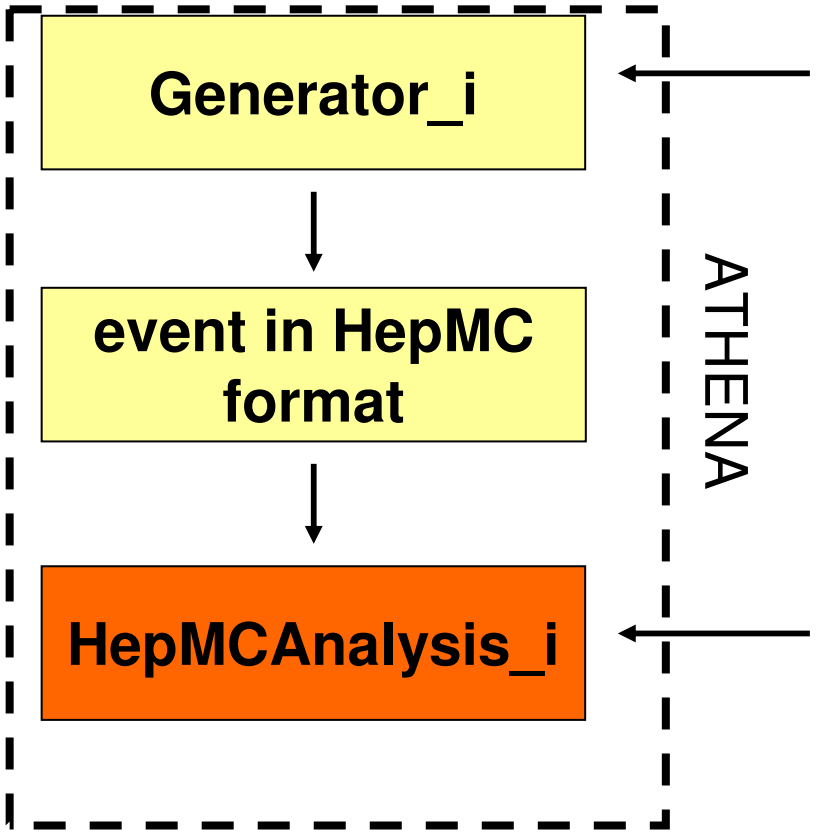


run in ATHENA



steering files (standard production job options)

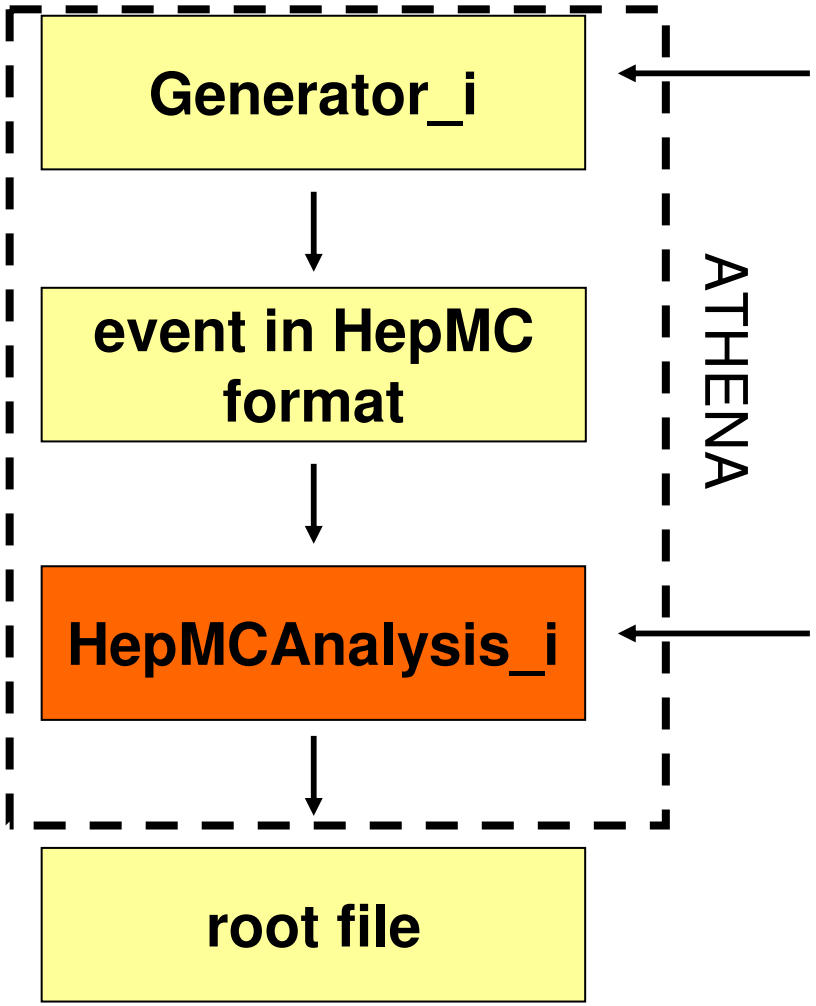
run in ATHENA



steering files (standard production job options)

interface to class library with physics analyses

run in ATHENA



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interface to class library with physics analyses

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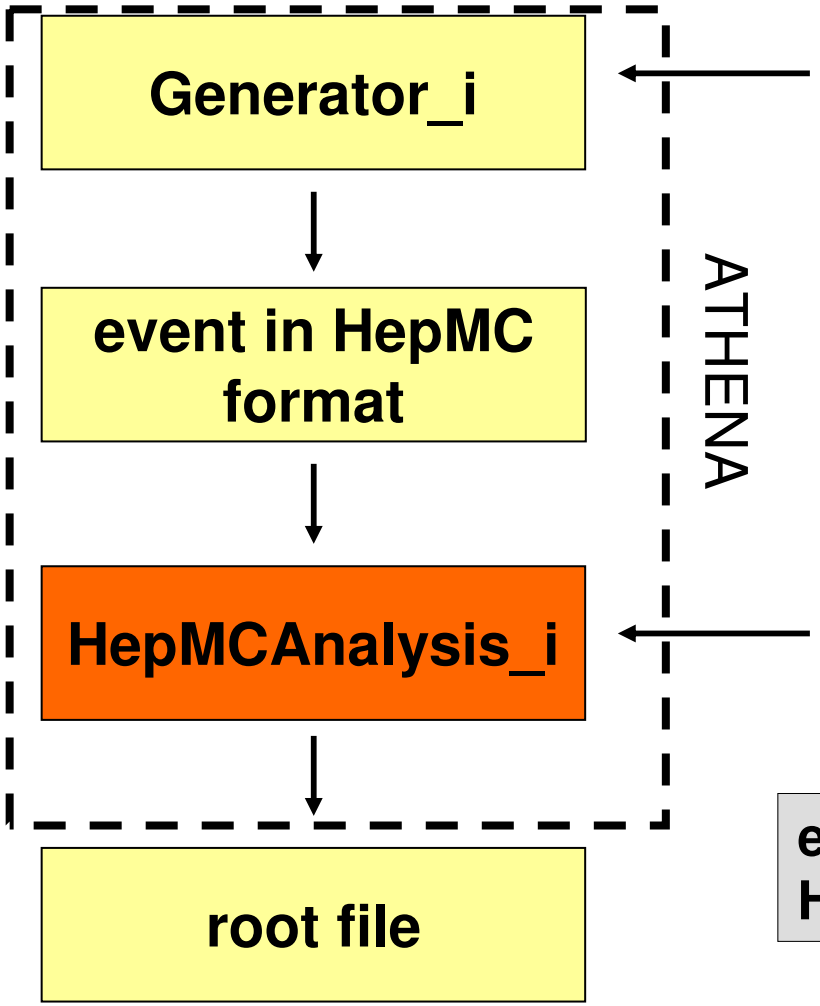

steering files (standard production job options)

interface to class library with physics analyses

example provided in HepMCAnalysis_i/share

UserAnalysis

- running own analysis with HepMCAnalysis_i
  - checkout Generators/HepMCAnalysis_i
  - add own analysis by modifying UserAnalysis.h and UserAnalysis.cxx
  - recompile package
- all functions from baseAnalysis allowed to be used
- no need to create own UserAnalysis; example UserAnalysis can be used
- new analysis can always be integrated in the core package by sending us the code

summary and outlook

- HepMCAnalysis Tool integrated in ATLAS software framework ATHENA
- in ATLAS used in
  - private analysis on generator level
  - sample B validation (in addition to expert checks)
  - checks in RTT, regression tests
- next steps:
  - starting the exercises