1
Introduction

Layout of tutorial

Where to find documentation

Outline

- **1. Getting started**
- **2. Beginning to write a physics selection algorithm**
- **3. Basic tools for selection algorithms**
- **4. Utility tools**
- **5. Connection to MonteCarlo truth**

Aim of the tutorial

- **To make you more familiar with some DaVinci specific terminology**

- **Explain the reason behind some choices**

- **To show you which are and how to use the available tools you would want to use**

….. Help you to start to write a physics selection

Assumptions

- **It is assumed that you know the way the LHCb software is structured**
  - cmt packages
  - conventions

- **It is assumed that your are familiar with the Gaudi architecture**
  - algorithms, algtools, services, data stores…

- **It is assumed that you have either followed the Gaudi tutorial or have learned to use Gaudi by yourself**

Some reminder will be made when relevant

Methodology

- **Topical presentations on the various point with example code**
  - **Each tool will be presented one at the time (with related tools one after the other)**
- **At the same time we will show the use of the tool in a concrete selection algorithm: SelectJPsi2mumu**
- **After each topic in each presentation we will stop for questions**

DaVinci Tutorial

DaVinci Documentation

- **DaVinci web page**

    http://lhcb-comp.web.cern.ch/lhcb-comp/Analysis/

- **DaVinci working group mailing list**

    lhcb-davinci@cern.ch

    ANY question related to physics software!

- **This tutorial**

    Has a link from the DaVinci web page

- **DaVinci related discussions as necessary**
    - **Topics related to technical issues in Computing Meeting**
        - **on Mondays afternoons at 14:00 (with conference calls)**
    - **Topics related to contents in Light Meetings**
        - **on Tuesdays afternoons at 14:00 (with video and conference calls)**

    Agenda available on the web and announcement of special interest topic in DaVinci mailing list

Core software Documentation

- **All LHCb software documentation is available from the Computing web page**

  http://lhcb-comp.web.cern.ch/lhcb-comp/

- **Gaudi Documentation**

  - **Web page**

    http://lhcb-comp.web.cern.ch/lhcb-comp/Frameworks/Gaudi/

  - **User Guide**

    on the web

  - **Tutorial**

    on the web

- **All LHCb Gaudi-based software has automatically generated documentation**

External Documentation

- **CLHEP**

   http://wwwinfo.cern.ch/asd/lhc++/clhep/

- **STL**

   http://www.sgi.com/tech/stl/

Tentative Schedule

10 min	1 Introduction	G.Corti
30 min	2 Getting started	G.Corti
20 min	3 Beginning to write a selection algorithm	G.Corti for S.Amato
60 min	4. How to load and save data	G.Corti
Break		
30 min	5. Manipulating data: ParticleFilter and Criteria	Ph.Charpentier for S.Amato
30 min	6. Manipulating data: Vertexing	Ph.Charpentier for S.Amato
10 min	7. Manipulating data: Geometrical tool	Ph.Charpentier for M.Gandelman
40 min	8. UtilityTools	O.Dormond
40 min	9. Particles 2MC Associators	Ph.Charpentier

DaVinci Tutorial

Credits

S.Amato, Ph.Charpentier, G.Corti, O.Dormond,

J.deMello, E.deOliveira, M.Gandelman,

J.H.Lopes, C.Nunes, C.Padilla

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