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 Documentation

- **DaVinci working group**
  - **Meetings on Wednesday afternoons ("scheduled" every week) with conference call**
    - **Agenda available on the weekly meeting**
    - **All discussions relating to physics analysis software**
- **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**

  Will have a link from the DaVinci web page

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

Documentation

- **CLHEP**
  http://wwwinfo.cern.ch/asd/lhc++/clhep/
- **STL**
  http://www.sgi.com/tech/stl/

Tentative Schedule

9:10	1 Introduction	G.Corti
9:20	2 Getting started	C.Padilla
10:00	3 Beginning to write a selection algorithm	G.Corti for S.Amato
10:20	4. How to load and save data	G.Corti
12:00 Lunch Break		
14:00	5. Manipulating data: ParticleFilter and Criteria	G.Corti for S.Amato
14:40	6. Manipulating data: Vertexing	M.Gandelman for S.Amato
15:10	7. Manipulating data: Geometrical tool	M.Gandelman
15:30 Coffee Break		
16:00	8. UtilityTools	O.Dormond
17:00	9. Particles2MC Associators	Ph.Charpentier

Credits

S.Amato, Ph.Charpentier, G.Corti, O.Dormond,
J.deMello, E.deOliveira, M.Gandelman,
J.H.Lopes, C.Nunes, C.Padilla