



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 you 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 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



Credits

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

