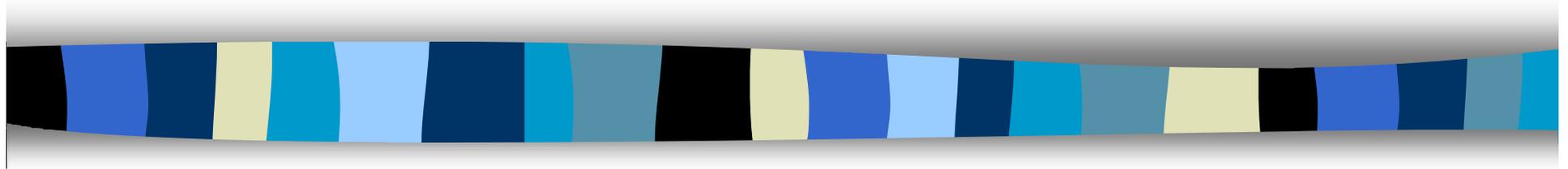
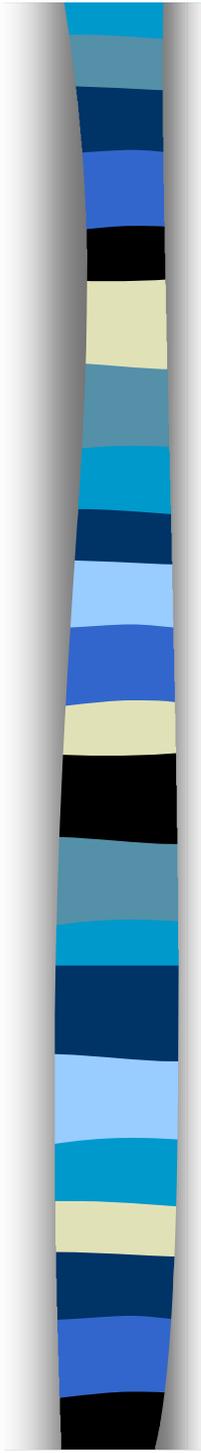


# OORich Implementation Status



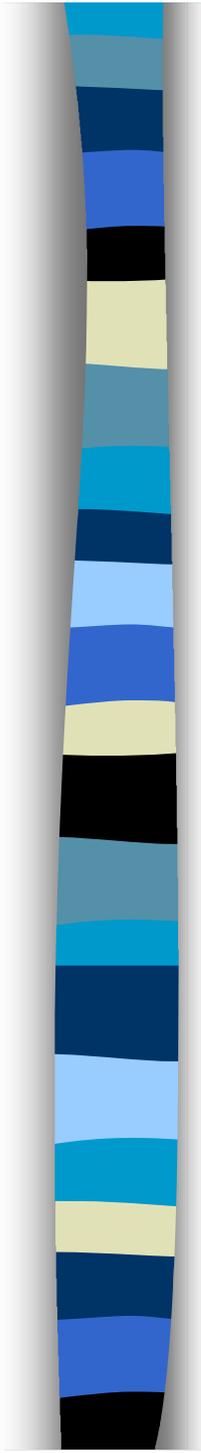
Dietrich Liko

Niko Neufeld



## Last time we presented ...

- New Implementation of the RICH software
  - Object Oriented Design principles
- Status of the Fortran at the time of the technical proposal
  - Similar physics performance
  - Similar resource consumption



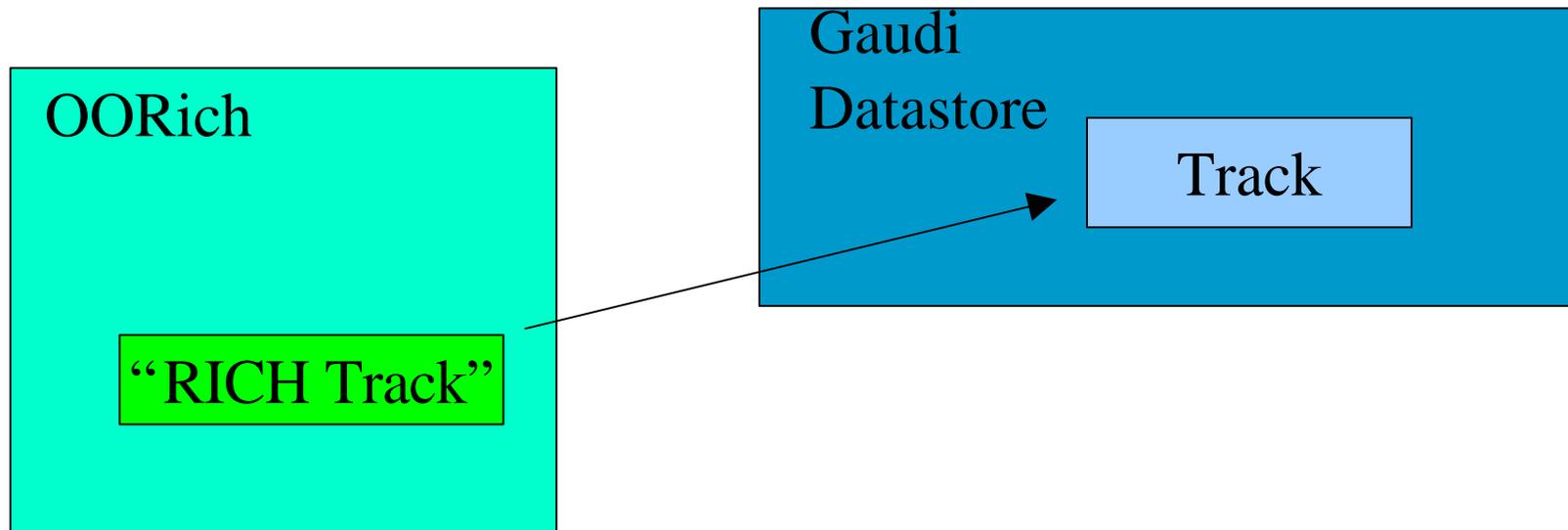
# Move to GAUDI ...

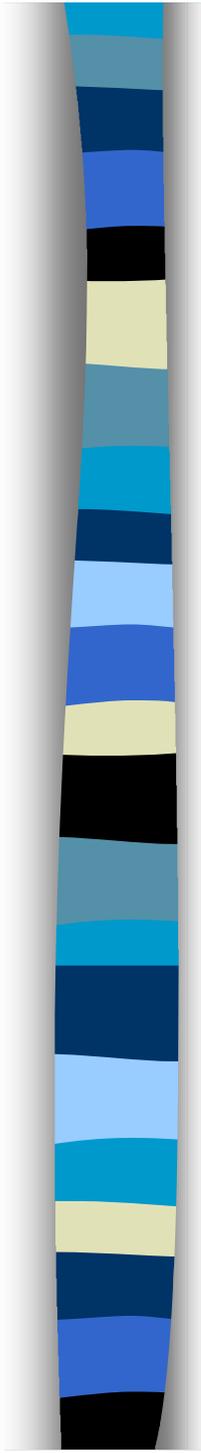
## Technical Aspects ...

- Datastore
- Algorithms
  - Properties
  - SubAlgorithms
- Histograms, Ntuples, Logservice

# Adapter concept

- Adapter decouples analysis program from the environment
- No change in the “main” program

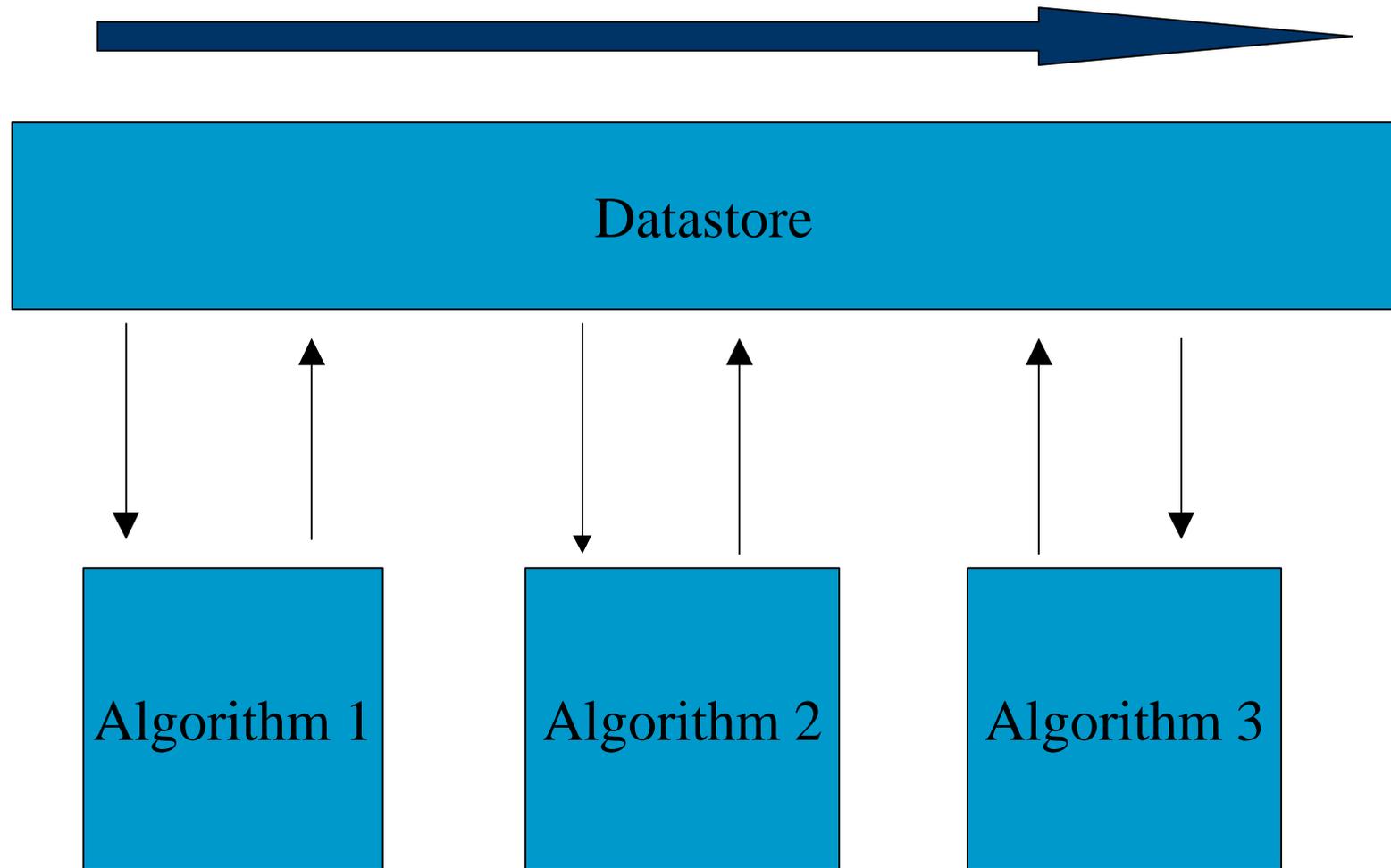


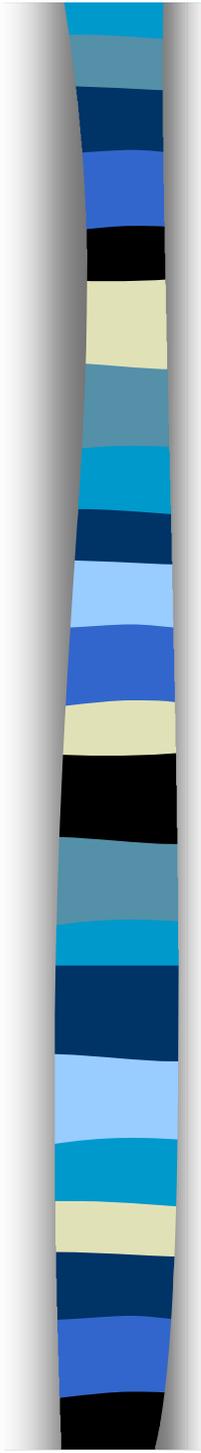


# Why a “RICH Track”

- Adapter to the GAUDI track
  - Right now simulation particles
- Can answer RICH specific question
  - How many photons would you emit in the Aerogel radiator, if you are a pion

# GAUDI Algorithms

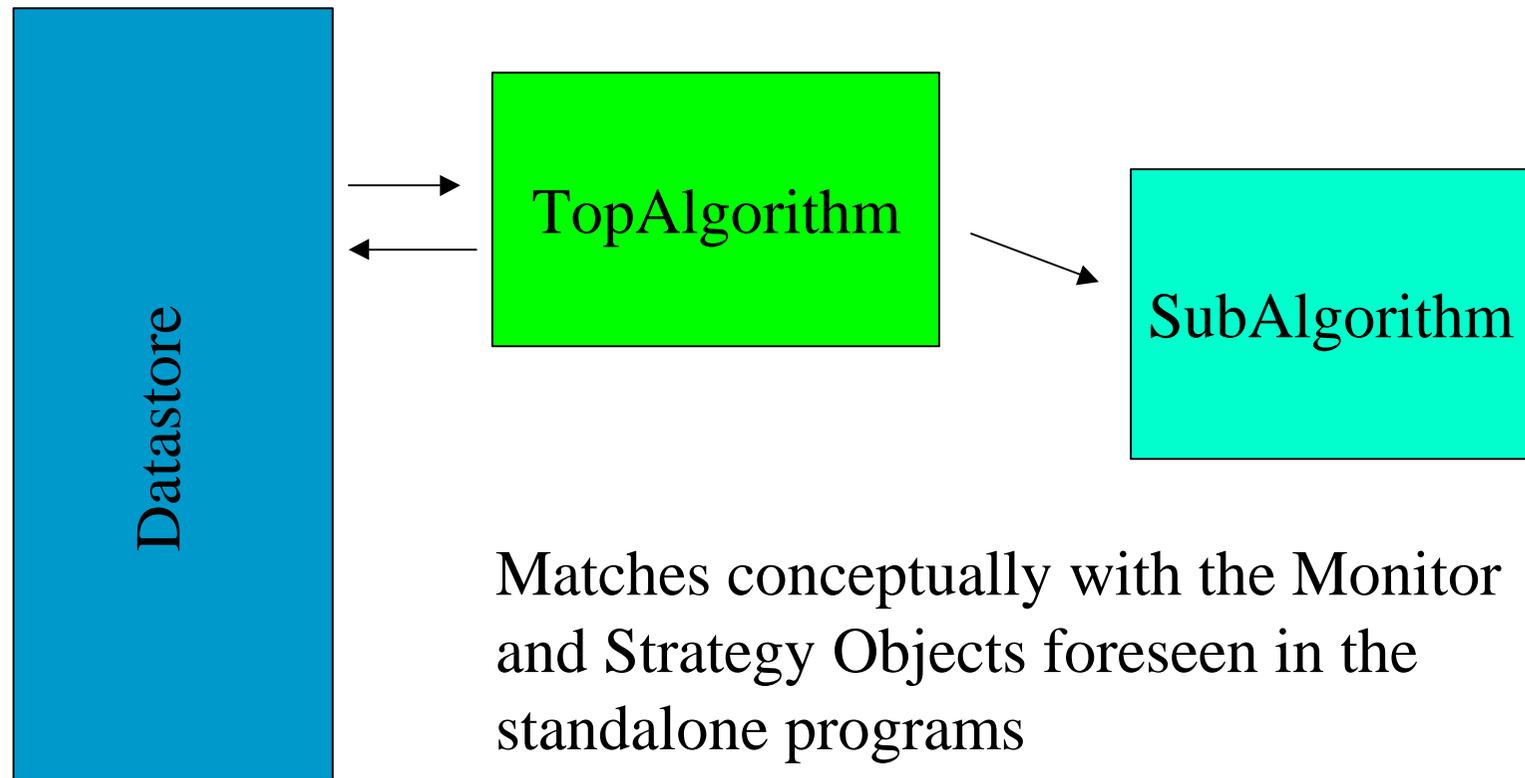




# Package OORich

- Two Top Algorithms
  - RichSimulation
  - RichReconstruction
- Sub Algorithms
  - Monitor Simulation/Reconstruction
  - Configure Reconstruction Strategy

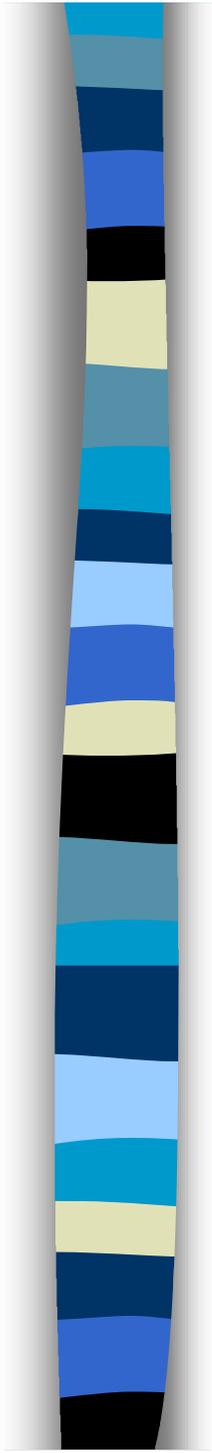
# Gaudi SubAlgorithm



Matches conceptually with the Monitor and Strategy Objects foreseen in the standalone programs



Gives confidence that OO approach is correct



# RichSimulation

## ■ Initialize

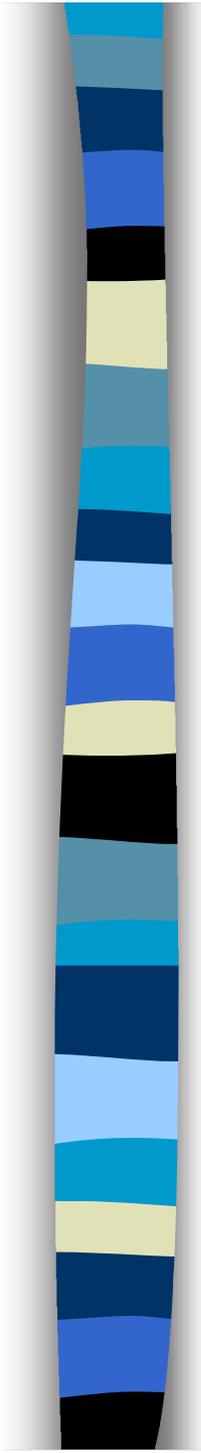
- Fetch tracks from the event store
- Generate Photons & Photon Detector Hits

## ■ Monitor

- Histograms, Display

## ■ Terminate

- Store results in data store



# RichReconstruction

## ■ Initialize

- Fetch tracks and hits from data store
- Reconstruct photon angles

## ■ Strategy

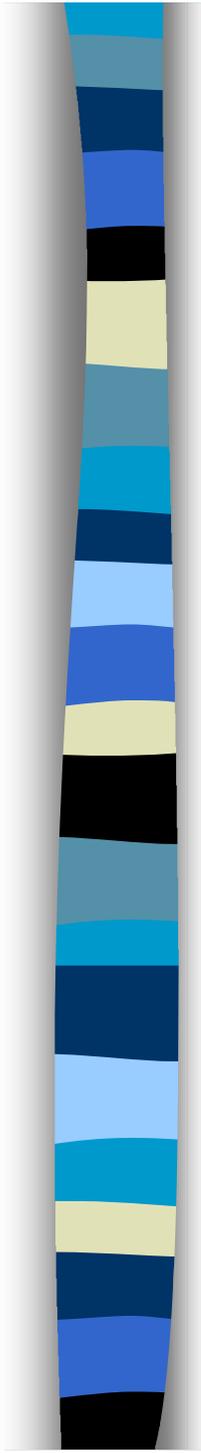
- Global Likelihood (only choice right now)

## ■ Monitor

- Histograms

## ■ Terminate

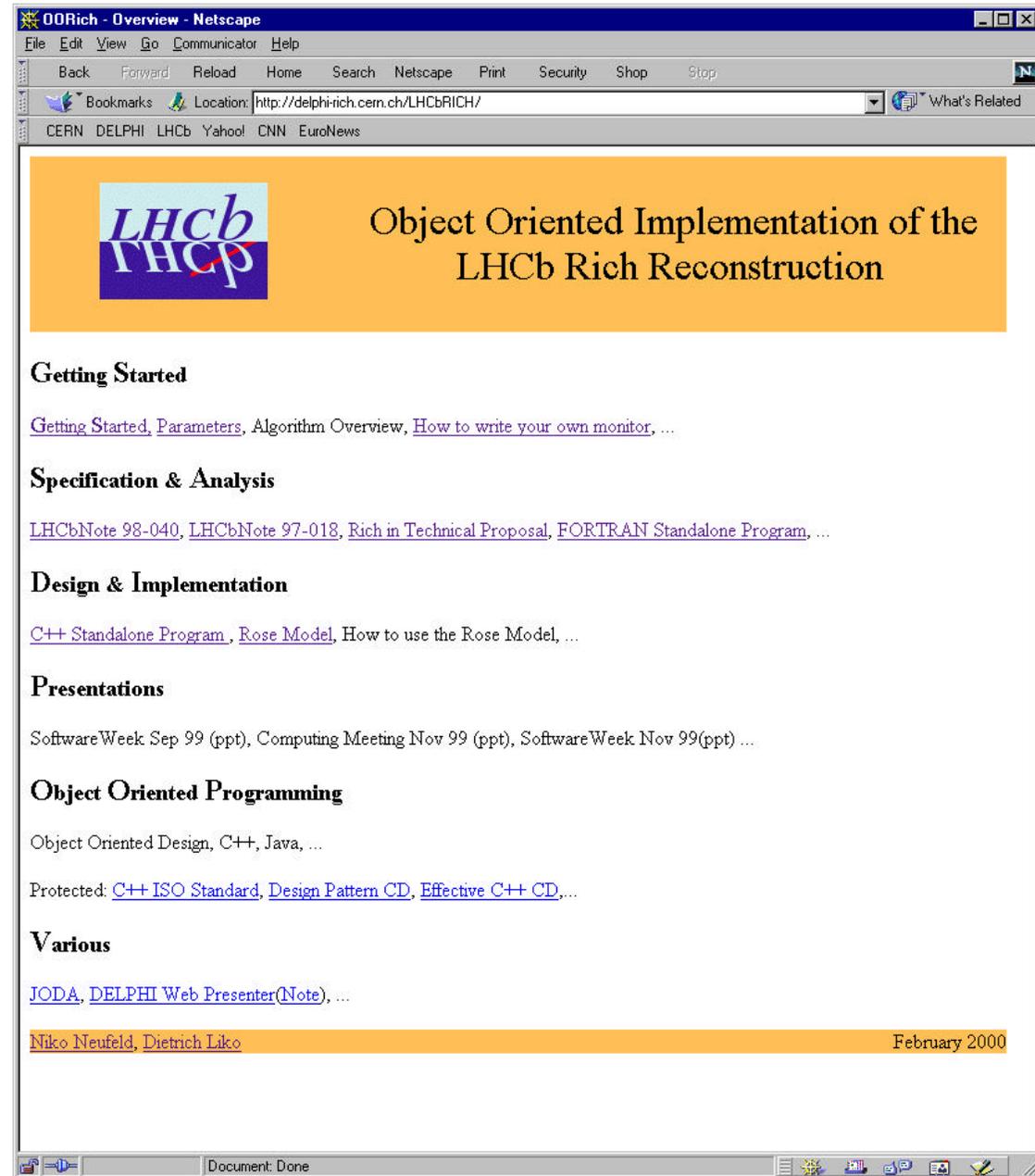
- Store results in data store



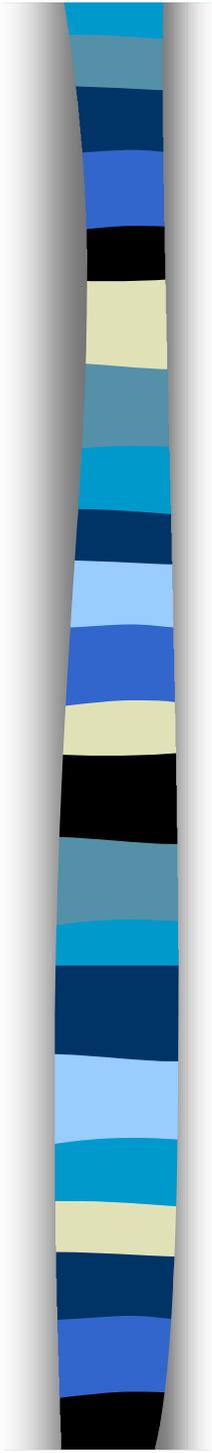
# Verify Physics Performance

	<b>e</b>	<b>m</b>	<b>p</b>	<b>K</b>	<b>p</b>	<b>X</b>	<b>Purity</b>
<b>e</b>	2514	3	71			92	0.938
<b>m</b>	9	49	243	1		57	0.136
<b>p</b>	3		3281			27	0.991
<b>K</b>			3	237	2	1	0.975
<b>p</b>			1		69		0.986
<b>X</b>	65	1	20	4		3879	0.977
<b>Eff</b>	0.970	0.925	0.907	0.979	0.972	0.956	

# Web Site

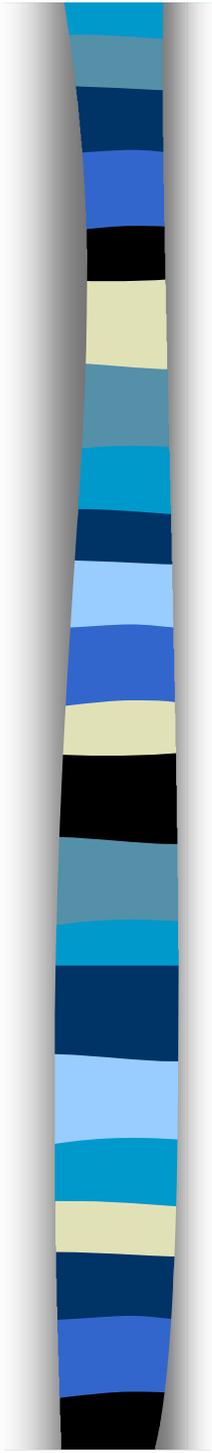


<http://delphi-rich.cern.ch/LHCbRICH>



# Status

- Package OORICH
  - First version in CVS
- Sorry, not yet Windows NT
  - no fundamental problem



# Plans

- Documentation
- Prepare for pattern recognition in GAUDI (TDR)
- Development
  - OO Detector Description
  - New Algorithms
  - Photon Detector Implementation