

-- ZviTarem - 01 Jun 2006

This page is intended for exchanging information regarding MuGirl among the developers. Anyone can (and should!) edit this page, add related links and new pages, etc.

Recent Changes




- 15-Jan-2007
 - ◆ Store MuonSegment objects in a new collection.
 - ◆ Pass roads with real widths to segment makers.
 - ◆ Merged branch with EE fix to main trunk.
 - ◆ New tag [MuGirl-00-00-29](#).
- 01-Jan-2007
 - ◆ Added event and run numbers to NTuple
 - ◆ Fixed region of crude extrapolation to EE
- 24-Oct-2006
 - ◆ Enabled CSC segment maker
 - ◆ Restored use of DHough MDT segment maker by default
 - ◆ New tag [MuGirl-00-00-20](#).
- 18-Oct-2006
 - ◆ Enabled call to DHough MDT segment maker on the new interface. To use, add `MuGirl.MDTSegmentMaker="HoughMDTTrkFinderTool"` to your job options.
 - ◆ Added virtual void `Candidate::postProcess()` to support STau
- 15-Oct-2006
 - ◆ Added station BMF
 - ◆ New tag [MuGirl-00-00-19](#).
- 09-Oct-2006
 - ◆ Added HitError to the NTuple
- 02-Oct-2006
 - ◆ Updated ANN for barrel and end-cap, using RPC segments information
 - ◆ bags fixed in MDT.cxx
 - ◆ checked in MuGirl, see ChangeLog
 - ◆ To compile with 12.0.X (rel_3) co following packages
 - ◇ Reconstruction/MuonIdentification/MuGirl
 - ◇ Reconstruction/MuonIdentification/MuGirlEvent
 - ◇ MuonSpectrometer/MuonRecTools/RPC_LinearSegmentMakerTool
 - ◇ MuonSpectrometer/MuonRecTools/TGC_LinearSegmentMakerTool
 - ◇ MuonSpectrometer/MuonRecUtils/MuonLinearSegmentMakerUtilities
- 23-Sep-2006
 - ◆ Enabled use of `Muon::DCMathSegmentMaker` for MDT. The default is Hough. To use DCMath, add the following line to your JO: `MuGirl.MDTSegmentMaker = "Muon::DCMathSegmentMaker"`
 - ◆ Implemented some plugs for memory leak
 - ◆ Fixed some compiler warnings
 - ◆ No new tags. Affected packages are
 - ◇ Reconstruction/MuonIdentification/MuGirl
 - ◇ Reconstruction/MuonIdentification/MuGirlEvent
 - ◇ MuonSpectrometer/MuonRecTools/RPC_LinearSegmentMakerTool
 - ◇ MuonSpectrometer/MuonRecTools/TGC_LinearSegmentMakerTool
 - ◇ MuonSpectrometer/MuonRecUtils/MuonLinearSegmentMakerUtilities
- 24-Aug-2006
 - ◆ Expanded road widths
 - ◆ Make RPC segments based of fit of Z to R and of to R
 - ◆ Tagged and collected all MuGirl-related packages
- 23-Aug-2006
 - ◆ MuGirlEvent - added two functions to get Angles, new tag [MuGirlEvent-00-00-04](#)

- ◆ MuGirlParticleCreator - set Angles to AOD, new tag MuGirlParticleCreator-00-00-04
- 22-Aug-2006 To run MuGirl with 12.0.2 check out and build
 - ◆ Reconstruction/MuonIdentification/MuGirl
 - ◆ Reconstruction/MuonIdentification/MuGirlEvent
 - ◆ Reconstruction/MuonIdentification/MuGirlParticleCreator (not necessary)
 - ◆ MuonSpectrometer/MuonRecTools/RPC_LinearSegmentMakerTool
 - ◆ MuonSpectrometer/MuonRecUtils/MuonLinearSegmentMakerUtilities
- 21-Aug-2006
 - ◆ Compute road width based on p_T , distance, technology, region and .
 - ◆ Compute road width based on p_T .
- 11-Aug-2006
 - ◆ Cause segments with only one or two points to have a probability of 1. This affects all RPC segments.
 - ◇ New Tag RPC_LinearSegmentMakerTool-00-00-03
 - ◇ Changes to the HEAD version, but no new tag for MuGirl.
- 01-Aug-2006
 - ◆ Renamed LinearSegmentMakerUtilities to MuonLinearSegmentMakerUtilities. So in order to run the latest MuGirl, check out and build
 - ◇ MuonSpectrometer/MuonRecTools/RPC_LinearSegmentMakerTool
 - ◇ MuonSpectrometer/MuonRecUtils/MuonLinearSegmentMakerUtilities
- 31-Jul-2006
 - ◆ Added support for combined intersections
 - ◆ Added a function to determine the combined intersection in each distance/region
 - ◆ Added segment direction to the NTuple
 - ◆ To run MuGirl from HEAD, you need to check out and build the following packages:
 - ◇ MuonSpectrometer/MuonRecTools/RPC_LinearSegmentMakerTool
 - ◇ MuonSpectrometer/MuonRecUtils/LinearSegmentMakerUtilities
- 18-Jul-2006
 - ◆ Removed return value from the function `testMuGirls()`.
 - ◆ New tag MuGirl-00-00-12 collected into 12.X.0.
- 28-Jun-2006
 - ◆ Fixed TGC_LinearSegmentMakerTool to limit the list of hits in the generated MuonSegment to hits actually used in the segment.
 - ◆ New tag TGC_LinearSegmentMakerTool-00-00-05.
 - ◆ Collected into 12.0.X nightlies on 29-Jun-2006.
- 20-Jun-2006
 - ◆ New variables of ANN for Barrel and End-Cap were added to ntuple. New functions are available: `annBarrel()`, `annEndCap()` and `setANN(double ann_Barrel, double ann_EndCap)`.
 - ◆ New tag MuGirl-00-00-11.
- 19-Jun-2006
 - ◆ Merged the branch tag MuGirl-00-00-07-02 with the main trunk. This tag compiles only on the nightlies of release 12.0.X.
 - ◆ New tag MuGirl-00-00-10.
- 08-Jun-2006
 - ◆ Added new package Reconstruction/MuonIdentification/MuGirlParticleCreator.
 - ◆ Changed the sample job options for MuGirl to activate the MuGirlToCombinedMuon algorithm.
- 07-Jun-2006
 - ◆ Tag MuGirl-00-00-07-01 Uses the new RIO_OnTrack creation tools `MdtDriftCircleOnTrackCreator` and `MuonClusterOnTrackCreator`. This tag fixes the global coordinate of the `RIO_OnTrack` object to be the coordinate of the input `PrepData` with the correction of R by `cos()`.
- 31-May-2006

- ◆ Tag MuGirl-00-00-07 was made on 31-May-2006 just prior to the migration from ITrigRegionSelector to IRegSelSvc.
- ◆ Tag MuGirl-00-00-08 was made on the same day after the migration. This tag cannot be used for running MuGirl until the new region selector is in place.

Usage Notes

Presentations



























-  - MuGirl talk from Trigger and Physics Week, May 2006 [↗](#)
-  - Tool-based architecture of the MuGirl algorithm
-  - MuGirl talk from Atlas Muon Reconstruction, June 22 2006 [↗](#)








Notes

- Abstract  and summary  submitted to NSS 2006 [↗](#)

Performance

Performance and Plots

- Release 12.0.4 MuGirl-26-00-00-03 NEW
 - ◆ Efficiency for 100 GeV muons
 - ◇ Vs. eta 
 - ◇ Vs. phi 
- Release 11.5.0, MuGirl-00-00-07-01
 - ◆ ANN preliminary study
 - ◇ End-Cap results  plot,  file and  file
 - ◇ Barrel results  plot,  file and  file
 - ◇  - variables used in NN (how use ANN in root)
 - ◇  - preparation of signal/background samples, analysis using ANN
 - ◇ We apply ANN calculation on the tracks which passed preliminary selection
 - barrel NN > 0.3 and endcap NN > 0.3
 - High $p_T \mu$  number of hits/segments,  direction plots
 - Low $p_T \mu$  number of hits/segments,  direction plots
- Release 11.5.0, MuGirl-00-00-06
 - ◆ Difference between direction in μ of intersection of MDT/TGC fit and extrapolated ID track in the same chamber, Middle distance.
 - ◇ μ :  MDT,  TGC
 - ◇ Candidates that are not associated with truth μ but are associated with a μ founded in the Muon Spectrometer entrance (decay from π and K):  MDT,  TGC
 - ◇ Fakes:  MDT,  TGC
 - ◆  Efficiency vs. transverse momentum
 - ◆  Efficiency vs.
 - ◆ Distance in μ between MDT hits in the Inner distance of the Barrel and ID(black) and MDT(red) intersections extrapolated from the same distance:
 - ◇  6 GeV, DC2 data;  20 GeV, DC2 data
 - ◆ Distance in μ between MDT hits in the Inner distance of the Endcap and ID(black) and MDT(red) intersections extrapolated from the same distance:
 - ◇  6 GeV, DC2 data;  20 GeV, DC2 data
 - ◆ Distance in μ between MDT hits in the Middle distance of the Barrel and ID(black) and MDT(red)/TGC(blue) intersections extrapolated from the same distance:

- ◇  6 GeV, DC2 data;  20 GeV, DC2 data
- ◆ Distance in  between MDT hits in the Middle distance of the Endcap and ID(black) and MDT(red)/TGC(blue) intersections extrapolated from the same distance:
 - ◇  6 GeV, DC2 data;  20 GeV, DC2 data
- ◆ Distance in  between MDT hits in the chambers of the Outer distance and MDT evaluated intersections extrapolated from the MDT segment from the Middle distance:
 - ◇  20 GeV, DC3 data

AOD

Validation

- Tag MuGirl-00-00-11
 - ◆ 1000 26 GeV single muons
- Tag MuGirl-00-00-10
 - ◆ 1000 6 GeV single muons


Code

- ATLAS CVS repository [↗](#)

Known problems

- Wrong global parameters returned in MuonSegment
- No RPC or CSC segments

Tools


- Validation functions
 - ◆ Intersections/Hits: [W](#) Description, [C](#) Code
 - ◆ Efficiency/Background rate calculations and J/ψ analysis: [C](#) Code
 - ◆ **NEW** Difference between direction in  : [C](#) Code

Todo List

People

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-  Zvi Tarem
-  Natalia Panikashvili
-  David Primor
-  Ofrit Belkind

E-mail

-  Please email us if you have any questions.

This topic: Main > MuGirl

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