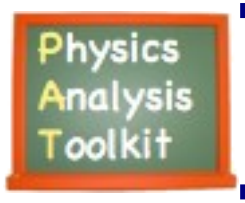

Event Content and Workflow Configuration

Roger Wolf

PAT Tutorial 01.09.2009

Physics Analysis Toolkit

What we learned yesterday

- Recap from Module1: What we learned from yesterday

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Today's Emphasize

- PAT=Toolkit – Large box: PAT is a toolkit not a data tier + some explanation what this means (well defined standards yes, common formats yes, but flexibility at the same time)

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Five Good Reasons...

- Five reasons why you might want to deviate from the provided PAT paths and contents..., this should come with 3 + 2 points on 2 slides

Physics Analysis Toolkit

Five Good Reasons...

- Five reasons why you might want to deviate from the provided PAT paths and contents..., this should come with 3 + 2 points on 2 slides

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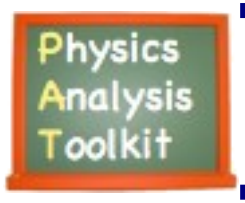
Today's Lesson

- PAT provides features to facilitate modifications
- We will learn which features these are and how to use them
- This does not relieve you from switching on your brain first



Today's Program

- Standard Pat workflow inspection (with the edmConfigBrowser)
- Event Content configuration traps and pitfalls
- How to remove something from the standard workflow of PAT
- How to add something to the standard workflow of PAT
- How to switch to different output collections or change them
- Documentation
- Conclusions and summary

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ConfigBrowser

- A large picture and a few explanations
- Link to the Twiki and an example how to use it

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PAT Output Event Size

- What is the typical event size of the standard PAT output
- A short calculation to show that you can easily fit a skim on your laptop

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Event Size Tool (simplistic)

- picture with an explanation how to use it and a link to the TWiki

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Disc Space Consumption (more sophisticated)

- picture with an explanation how to use it and a link to the TWiki

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Output Module

- Picture of the edm output module
- Explanation how to change the event content
- Pictures of the pre-defined PAT content vectors
- You need to know what you are doing when adding dropping information by hand
- In what cases is it harmless/ok?

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The Problem of References

- A reminder of the stacked organization of the EDM
- For the sake of disc space objects contain pointers
- When dropping collections all pointer relation are also gone

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Two Examples

- The example of an electron super cluster (cluster shapes)
- The example of a jet and calo towers

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References in FWLite

- In FWLite references may not me possible to resolve
- Explain with the example of the towers of the jet

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The PAT Answer

- Embedding of objects.
- You can safely drop the embedded collection (you should indeed)
- You can safely use the 'reference pointer' in FWLite
- This is completely transparent to the user (same get function)

Remove Specific PAT Objects

- Explain the corresponding tools with two pictures
- Advantage: all production steps are also taken out from the path
- Needs: all tools need to know the process the patDefaultSequence (view all other sequences as expert sequences for the moment...)
- Should be removeSpecificPATCandidates instead...

Remove All PAT Objects But...

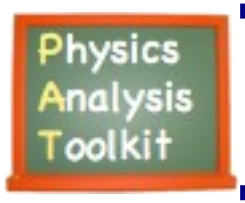
- Explain the corresponding tools with two pictures
- Advantage: all production steps are also taken out from the path
- Needs: all tools need to know the process the patDefaultSequence (view all other sequences as expert sequences for the moment...)
- Should be removeAllPATCandidatesBut instead...

Remove MC Matching

- Remove MC matching from all pat::Candidates
- Explain the corresponding tools with two pictures
- Advantage: all production steps are also taken out from the path
- Needs: all tools need to know the process the patDefaultSequence (view all other sequences as expert sequences for the moment...)
- To be used when processing data (like craft – use it in common with removeAllObjectsBut then...)

Remove RECO Specific Input

- Restrict input to AOD (not using anything which is available on RECO only)
- Explain the corresponding tools with two pictures
- Advantage: all production steps are also taken out from the path
- Needs: all tools need to know the process the patDefaultSequence (view all other sequences as expert sequences for the moment...)
- When running on AOD/AODSIM please add this tool to the default sequence.



Extending the PAT Workflow

- First a small summary what objects are at all in discussion
- Jets, tcMET, pfMET, Trigger will be an extra session

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Adding more MET Collections

- Explain the tools with one or two pictures and an example how to use it
- Refer to the Documentation page

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Adding more Jet Collections

- Explain the tools with one or two pictures and an example how to use it
- Refer to the Documentation page

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Switch the Jet Collection

- Explain the tool with one or two pictures and an example how to use it
- Refer to the Documentation page

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Switch all Input Collections to PF

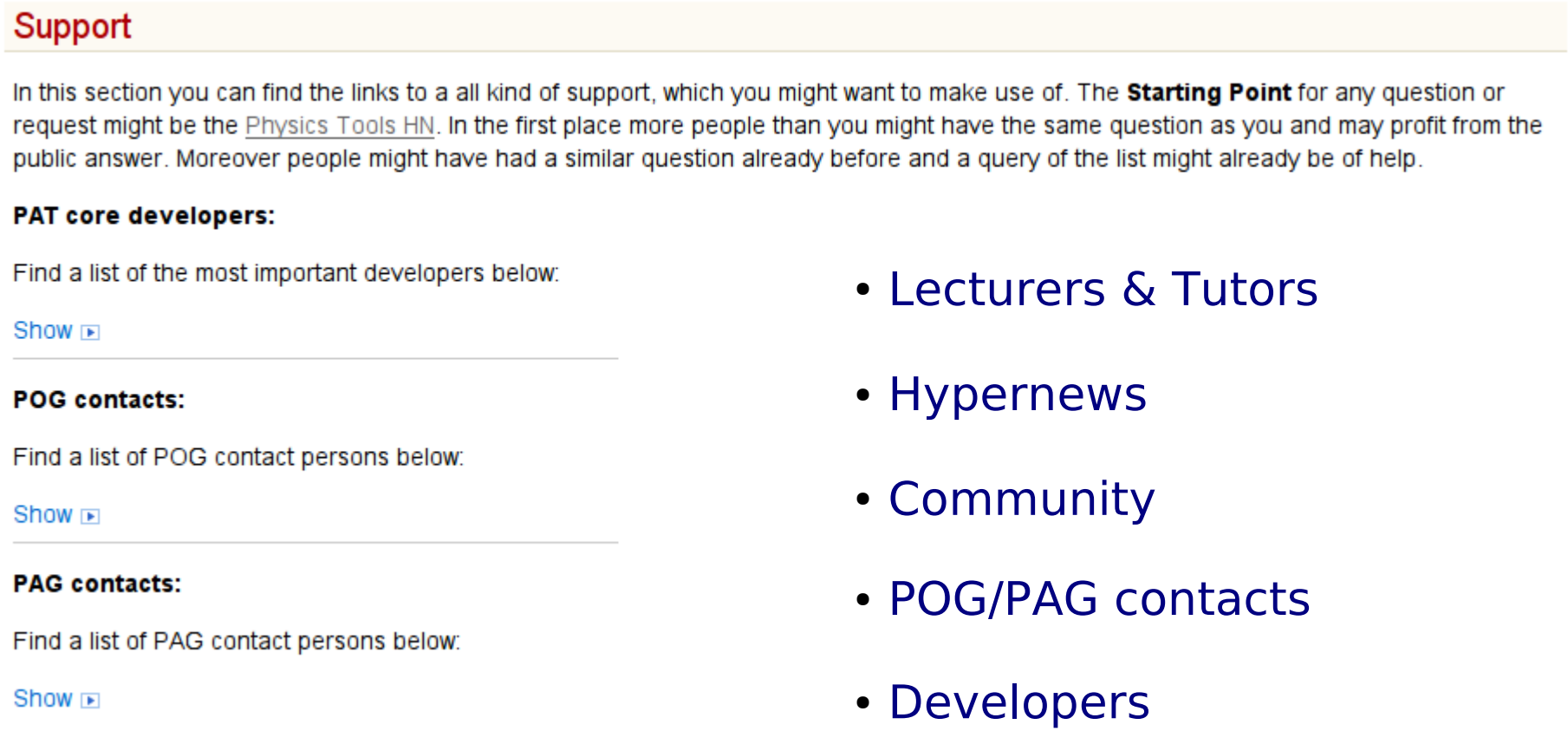
- Explain the tool with one or two pictures and an example how to use it
- Refer to the Documentation page

Using PAT for Analysis

- Explain the idea of the string selector
- Introduce a more complex example of a selection with cutflow monitoring with a corresponding picture
- Explain the exercise of the afternoon (Zjets with electrons). Write a electron an muon analyzer [Mo], do a clean electron selection (monitored with PAT) [Tue], combine the Z boson from the electron candidates and write a Zboson analyzer [Tue], check the jet collection (monitored) and multiplicity (after 'jet cleaning') [Wed], add cross cleaning [Wed], add trigger information/ trigger matching [Thur]

Support

- For more information on support have a look at **SWGuidePAT**:



Support

In this section you can find the links to a all kind of support, which you might want to make use of. The **Starting Point** for any question or request might be the Physics Tools HN. In the first place more people than you might have the same question as you and may profit from the public answer. Moreover people might have had a similar question already before and a query of the list might already be of help.

PAT core developers:

Find a list of the most important developers below:

Show

POG contacts:

Find a list of POG contact persons below:

Show

PAG contacts:

Find a list of PAG contact persons below:

Show

- Lecturers & Tutors
- Hypernews
- Community
- POG/PAG contacts
- Developers

Documentation

- **SWGuidePAT** Main documentation page
- **SWGuidePATRecipes** Installation recipes
- **SWGuidePATExamples** Tutorials and examples to get started
- **SWGuidePATDataFormats** pat::Candidate description
- **SWGuidePATConfiguration** Module configuration
- **SWGuidePATEventSize** Tools for event size estimate
- **SWGuidePATWorkflow** PAT workflow description
- **SWGuidePATTools** Description of workflow configuration tools
- And last but not least: This Tutorial...