

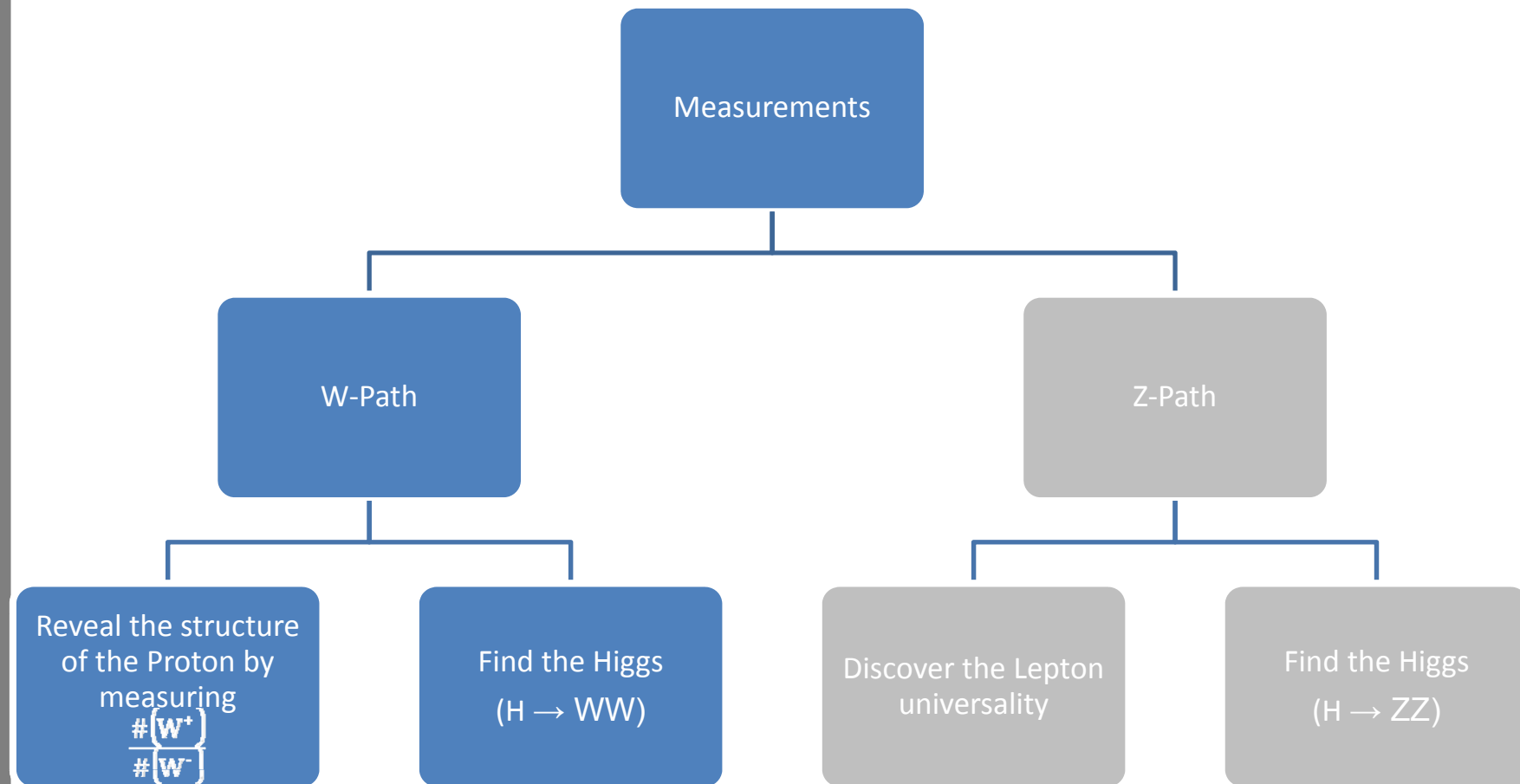


Outline

- 1 Summarize Measurements
- 2 W-Path's measurement
- 3 Website, Event Display, Data
- 4 Report on Tests
- 5 Conclusions



1 Summarize Measurements

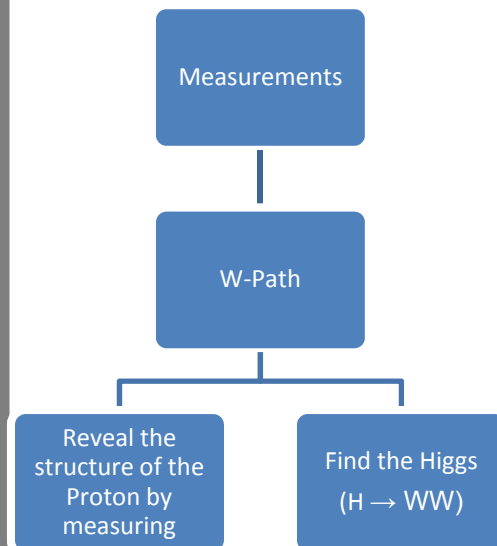




2 W-Path's measurement

Aims:

- identify different particles via their pattern in detectors
- categorize events of LHC in pre-defined final states
- interpret their measurement and get basic insights from it (proton structure)



sequence:

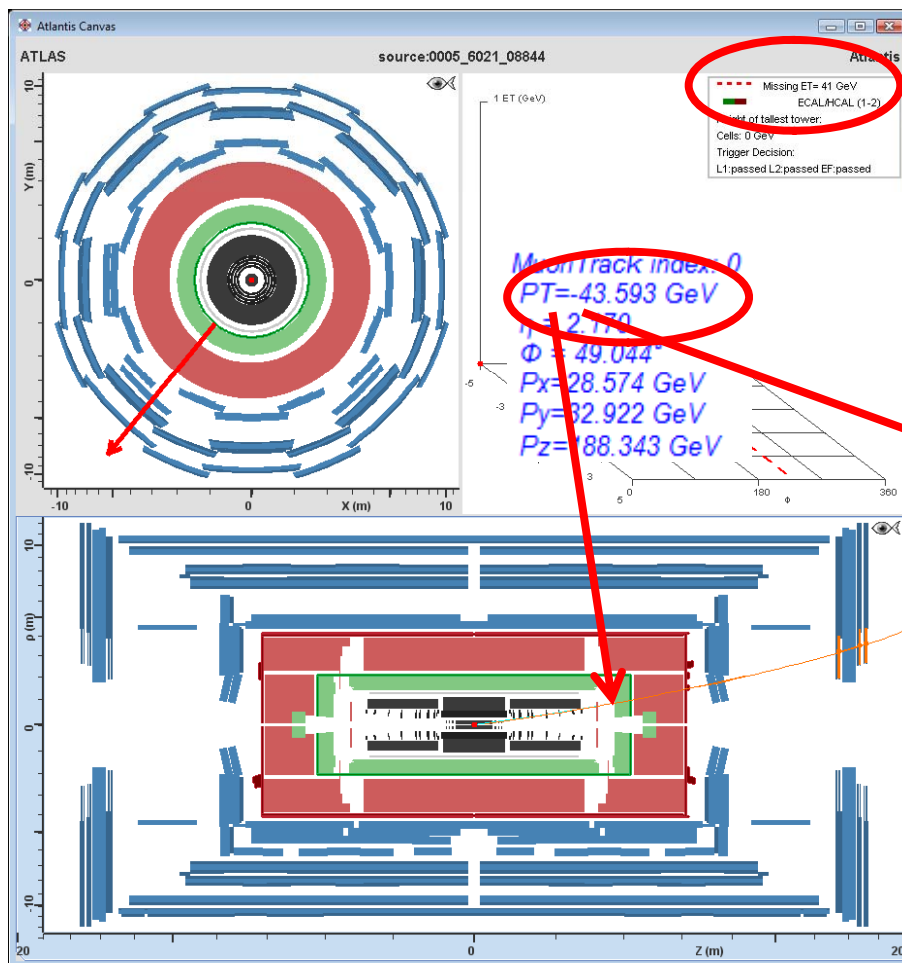
- Introductory Talks during morning session with emphasis on energy and momentum conservation, W boson and its role in beta decay
- Introduction to the measurement
- Measurement
- Analysis



Status of new LHC measurements



2 W-Path's measurement



Analysis on an ATLAS data sample



Events	Group A: 0001-0050	Number of particles	Total
Signal	$W \rightarrow e + \nu$	+	 10
		-	 5
	$W \rightarrow \mu + \nu$	+	 7
		-	 6
Background		 22	
Total			50



Status of new LHC measurements



3 Website, Event Display, Data

The screenshot shows the EPPOG website interface. At the top, there is a navigation bar with the EPPOG logo and the text "Einstein in the 21st Century". Below this are three buttons: "HOME PAGE", "W-PATH", and "Z-PATH". The main content area features a section titled "LHC@InternationalMasterclasses" with a paragraph of text and a video player showing a blue sphere. To the right, there is a "Language" section with flags and a "Links" section with social media icons for Facebook, CERN, and CMS. At the bottom of the screenshot, there is a "CURRENT EVENTS" section.

[www.cern.ch/kjende/index EN.htm](http://www.cern.ch/kjende/index_EN.htm)

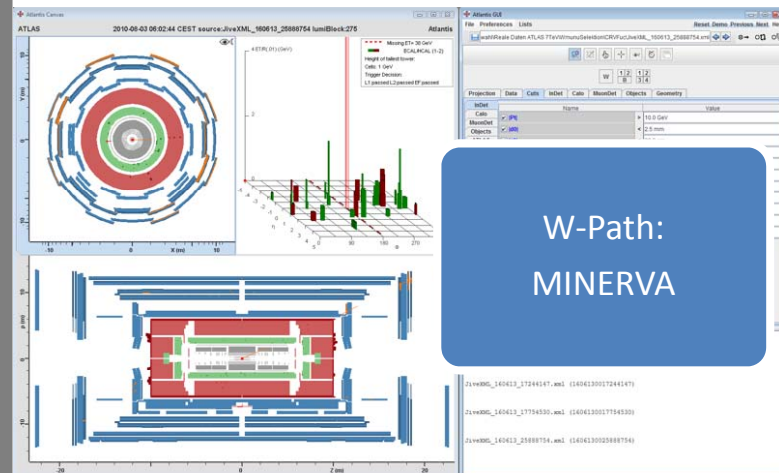
YOUR FEEDBACK ON THIS WEBSITE IS MORE THAN WELCOME!



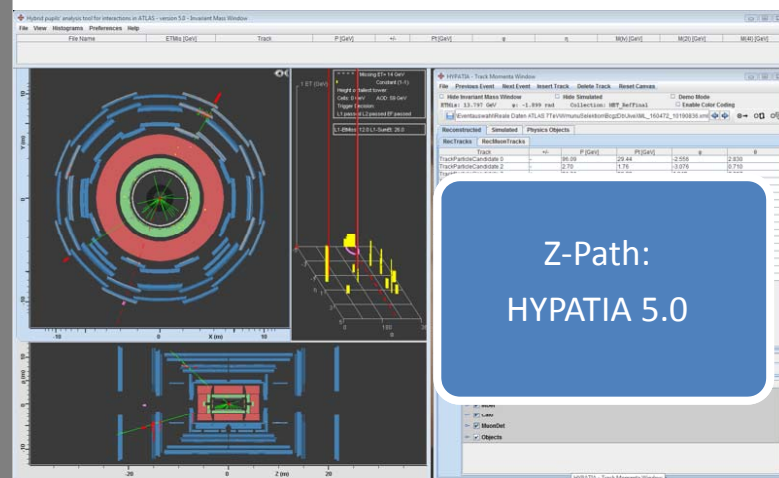
Status of new LHC measurements



3 Website, Event Display, Data



- Very intense cooperation during the last weeks
- Combining didactic reasons and results from first tests for further developments
- Special Masterclasses design
- Many thanks to Tom McLaughlan, Peter Watkins, Mark Stockton, Monika Wielers

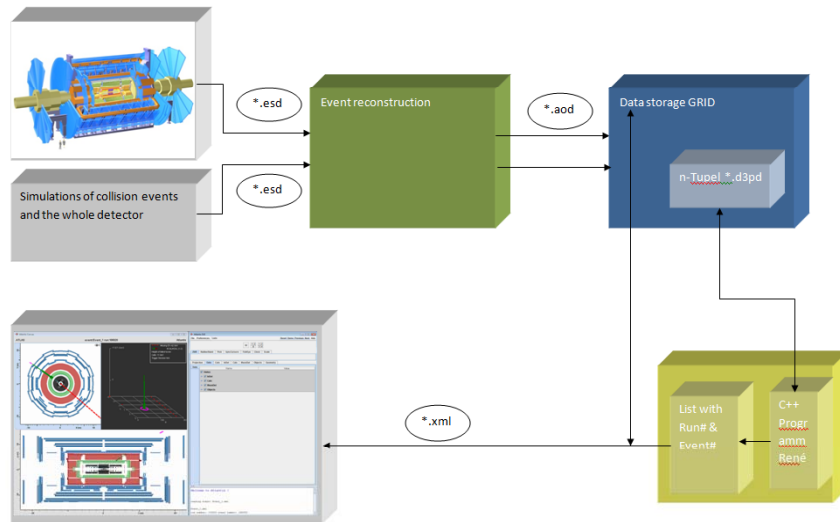


- Ready to use and prepared for testing!
- Thanks to Christine Kourkoumelis



3 Website, Event Display, Data

From Raw Data to Event Pictures



- 1st selection on MC data samples for tests in order to get feedback if these events and our idea are understandable at all
- 2nd selection on real data

W-Path cuts	At least one lepton		No lepton but MET
	electron	muon	
PT	>25 GeV <70 GeV	>30GeV	
$\Delta R(e/\mu, J et)$	>1.2	>1.2	
Jet PT	>25 GeV <75 GeV	>15 GeV <75GeV	>38 GeV <75 GeV
MET			>28 GeV <43 GeV
#(Jets)			<5



4 Report on Tests

First test with 16-18 years old high school students (10)

Each group analyzed 50 events within 60 minutes

90% identified correctly

Second test with high school teachers (6)

Each group analyzed 50 events within 60 minutes

93% identified correctly

Third test this afternoon with high school teachers (40)!



5 Conclusions

- W-Path measurement is nearly finished
- Website (both German and English) will be finished by end of October
- Real data (XML files) is being produced

- First tests were very successful

- Kids are very curious to get real data and are fascinated from this analysis

- Next steps:
Getting real data, the final version of MINERVA and test all of it together with the explaining website (during a workshop with German high school students) at the end of November

- We need your help with the translations! And your productive feedback on the whole package is more than welcome! Just send an email to Uta or me:
Konrad.Jende@cern.ch