Casablanca ATLAS Activities

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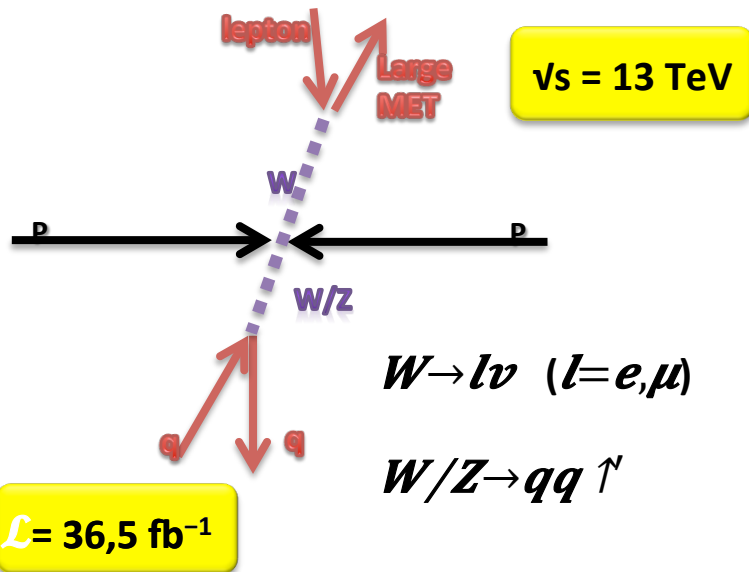
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Search for diboson resonance in the final state in pp collisions at √s = 13 TeV with the ATLAS detector
ATL-COM-PHY-2016-1488

√s = 13 TeV

$W \rightarrow l\nu$ $(l = e, \mu)$

$W/Z \rightarrow qq$

$\mathcal{L} = 36,5\ fb^{-1}$

MAIN BACKGROUND CONTRIBUTIONS:
• *ttbar* • **W+Jets** • Multi-Jet • Z+Jets
• SingleTop • Di-Boson

RESOLVED ANALYSIS

from 300GeV up-to 500 GeV
- Boosted *W/Z* bosons are reconstructed as two small jets

Combined limits plots look good!

BOOSTED ANALYSIS

from 500 GeV up-to 5 TeV
- Boosted *W/Z* bosons are reconstructed as a single large-R jet
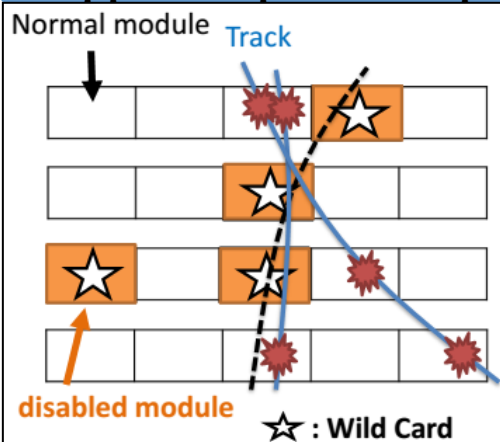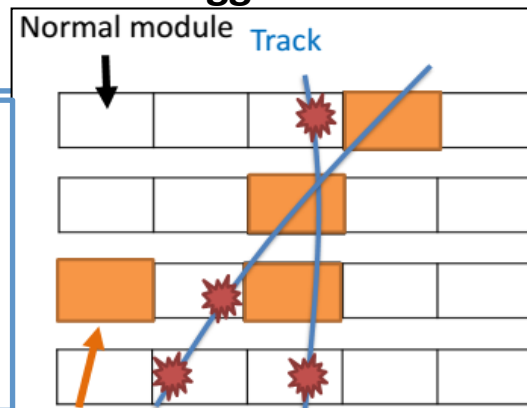- SmoothedWZTagger is used to select the large-R jet coming from decays of *W/Z* boson

Qualification task

Preparation of realistic wildcards for FTK pattern banks, including their effect on efficiency and dataflow and the sensitivity of the system to dead modules, as well as studies of dataflow in the system using real data with and without wildcards

The Fast Tracker (FTK) is a new ATLAS trigger component, implemented between the Level 1 trigger and the High Level Trigger (HLT), to reconstruct charged particles with pT > 1 GeV in the full silicon-detector acceptance for every event accepted by the Level 1 trigger. And provide full tracking for the (HLT).

In real environment, detectors are not perfect, there were disabled modules. Some are temporary, and some are for the long time.
➢ Hit information cannot be sent from the disabled modules.
➢ In case disabled modules are distributed as right figure, the

Normal module   Track

Normal module   Track
disabled module   ☆ : Wild Card

To recover inefficiency by disabled modules, **Wild Card (WC) algorithm** will be implemented in the FTK.
In case WC algorithm are applied as left figure, blue tracks are recovered. But the black dotted track maybe reconstructed also.

Khalil's task is to optimize how to apply the WC algorithm to achieve better performance among several parameters.

OTP Schedule from 02-May-2016 to 09-Sep-2016 KHALIL BOUAOUDA

ATLAS Distributed Analysis Support Team (AtlasDAST) is a group of experts shifters that provide to user the first point of contact to addressing all distributed analysis questions, including analysis tools related problems .
Farida Fassi coordinates this Team for both EU and AN time zones.

System	Activity	Task	period
General Tasks	Computing/Software	Distributed Analysis Trainee Shifts	02-5-2016 to 06-5-2016
			09-5-2016 to 13-5-2016
			20-6-2016 to 24-6-2016
General Tasks	Computing/Software	Distributed Analysis Shifts 1st level	25-7-2016 to 29-7-2016
			05-9-2016 to 09-9-2016

Activity	System	Task	Allocated Hours	Allocated Shifts
Computing/Software	General Tasks	529412- Distributed Analysis Shifts 1st level	80	10.00
	General Tasks	529414- Distributed Analysis Trainee Shifts	60	7.50
		Total in Computing/Software	140	17.50

Searches about charged Higgs Bosons for *H±→tb* with the ATLAS detector in 13 TeV *pp* collisions.

- First result of RecoBDT in Dilepton channel.

- Result seems promising.

- Need more statistics to test the BDT.

- Lower mass point shows better separation:

  - ✓ Try to find more variables.

  - ✓ Optimization of BDT parameters.

- Study ttbar background.

M. Gouighri

- Qualification Task : Calibration of the EM Calo

- Search for neutral MSSM H/A and Z' in τ τ channel :

  ATL-COM-PHYS-2016-1458

- Search for charged Higgs in τ + jets channel

  ATLAS-CONF-2013-090

Class1 shifts

- A. Hoummada ???

- M. Gouighri ???