



SNEHA VIRESHWAR DIXIT

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NANOADD

A NEW ERA

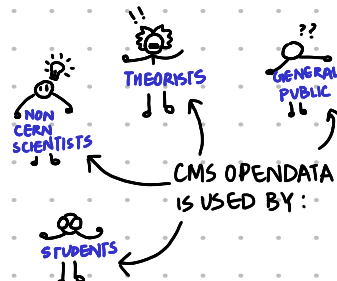
FOR 2015 CMS OPEN DATA



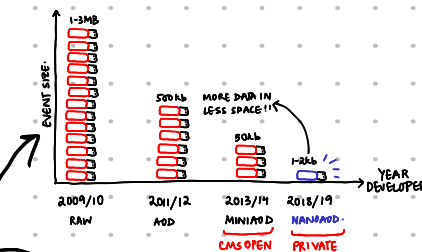
UNIVERSITY OF NEBRASKA
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CMS OPENDATA = PRIMARY
DATA + SIMULATIONS RELEASED
PUBLICLY BY THE CMS
EXPERIMENT @ CERN, GENEVA



SCIENTISTS NEED CMS OPEN DATA THAT IS FAST AND EASY TO USE,
BUT DATA FROM BEFORE 2016 IS IN A SLOWER DATATYPE



'NANOADD' FILES ARE SMALLER
+ EASIER TO USE, BUT ALL CMS
OPENDATA FROM BEFORE 2016
IS IN THE OLDER MINIAOD FORMAT

WORKFLOW

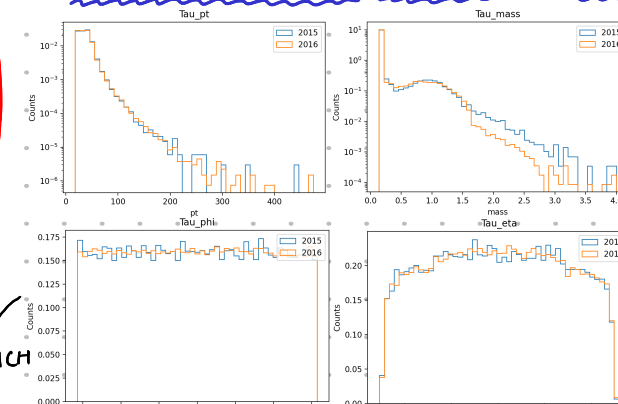


RUNNING CONFIG FILE
PROCESSES EVENTS AND
GENERATES NANOADD FILE.

CONVERTING 2015
MINIAOD TO
NANOADD

SO, WE WROTE CODE TO CONVERT IT TO
A FASTER DATATYPE

PLOTS COMPARING 2015, 2016 NANOADD FILES



PLOTS LOOK
SIMILAR, WHICH
IS GOOD

MADE W/
COFFEE CASA

THESE 2 ARE UNEXPECTED
VARIABLES HAVE
CLUSTERED AROUND
DEFAULT VALUES.

NEED TO CONSULT
OBJECT EXPERTS
FOR FURTHER
PROGRESS

MIGHT RELEASE
CONFIG FILES AS IS

PULL REQUEST
ON CMSSW 10-6-X

<https://github.com/cms-sw/cmssw/pull/39040>

CUSTOMISES CONFIG
FILE FOR DIFFERENT
SCENARIOS

USED TO MODIFY
SETTINGS W/
SIMPLIFIED SYNTAX

CHANGES HOW
CONFIG FILE RUNS

WHY DO WE
USE ERA'S?

```

new_sequence = sequence.copy()
new_sequence.remove(module1)
new_sequence.remove(module2)
era.replaceWith(sequence, new_sequence)
  
```

```

era.replaceWith(sequence,
sequence.copyAndExclude([module1, module2]))
  
```

INPUT
FILES USED

2015 MINIAOD FILE
(DRELL-YAN SIMULATION)

2016 MINIAOD FILE
(DRELL-YAN SIMULATION)

```

root://eospublic.cern.ch/eos/opendata/cms/mc/
RunFall15MiniAODv2/
DYJetsToLL_M-50_TuneCUETP8M1_13TeV-madgraphMLM-pythia8/
MINIAODSIM/PUMorionid7_94X_mCrUn2_asymptotic_v3_ext1v1/
10000/004544C-B-02D8E511-97E4-0206189458F6a.root
  
```

```

root://xcache1/store/mc/RunISummer16MiniAODv3/
DYJetsToLL_M-50_TuneCUETP8M1_13TeV-madgraphMLM-pythia8/
MINIAODSIM/PUMorionid7_94X_mCrUn2_asymptotic_v3_ext2v2/
10000/2016.root
  
```

AIM - CREATE 2015 ERA WITHOUT AFFECTING 2016 ERA
+ COMPARE OUTPUT FILES TO ENSURE 2015 ERA
GENERATES PROPER OUTPUT

GENERATING CONFIG FILE W/ CMSDRIVER

