ATLAS CAMPAIGNS DATA MODEL

Maria Grigorieva

MC PRODUCTION CAMPAIGNS

- MC production is divided into ***campaigns***, where the *centre-of-mass energy*, *geometry* and *conditions* used in production correspond to a running period of the LHC.
- Major campaigns correspond to the *calendar year* (mc15, mc16).
- Minor campaign versions usually reflect *improvements* in reconstruction software, trigger menu or pile-up simulation (mc15a, mc16b, …).

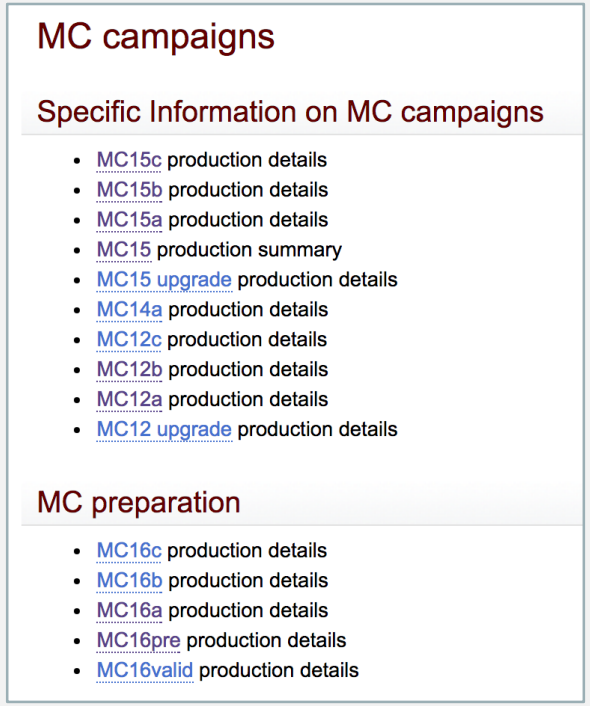
TWIKI PAGES FOR ATLAS PHYSICS ACTIVITY

HTTPS://TWIKI.CERN.CH/TWIKI/BIN/VIEWAUTH/ATLASPROTECTED/ATLASPHYSICS

APG (ATLAS MC PRODUCTION GROUP)

HTTPS://TWIKI.CERN.CH/TWIKI/BIN/VIEW/ATLASPROTECTED/ATLASPRODUCTIONGROUP

This page describes the role of the ATLAS Production Group and how to get official MC samples.



MC campaigns

Specific Information on MC campaigns

- MC15c production details
- MC15b production details
- MC15a production details
- MC15 production summary
- MC15 upgrade production details
- MC14a production details
- MC12c production details
- MC12b production details
- MC12a production details
- MC12 upgrade production details

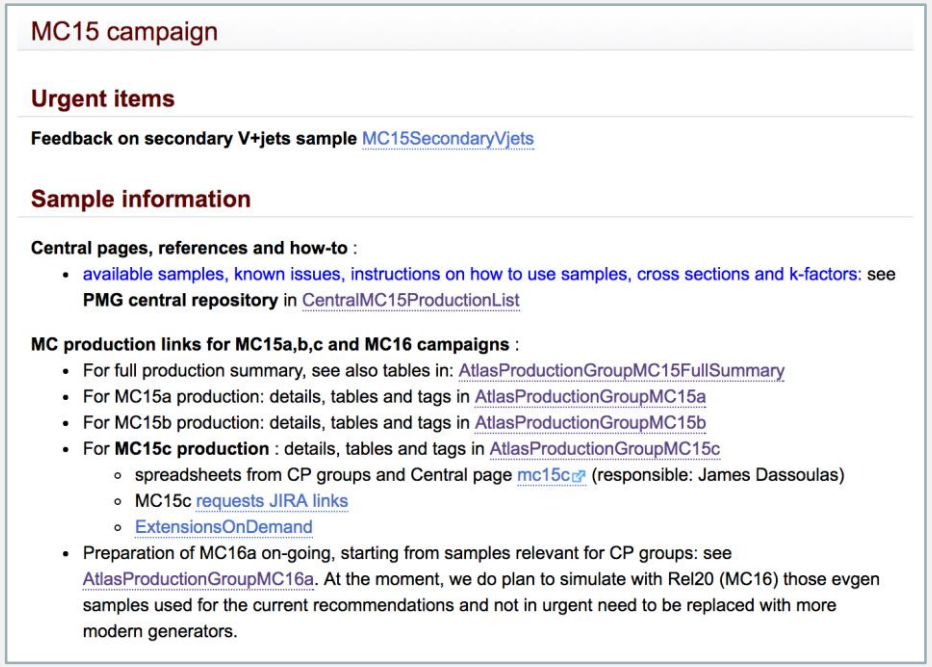
MC preparation

- MC16c production details
- MC16b production details
- MC16a production details
- MC16pre production details
- MC16valid production details

PMG (PHYSICS MODELLING GROUP)

HTTPS://TWIKI.CERN.CH/TWIKI/BIN/VIEW/ATLASPROTECTED/PHYSICSMODELLINGGROUP

The group is responsible for the development and validation of MC generators and samples for analyses and for the final approval of general MC requests from all physics groups (in tight collaboration with Physics Coordinators).



MC15 campaign

Urgent items

Feedback on secondary V+jets sample MC15SecondaryVjets

Sample information

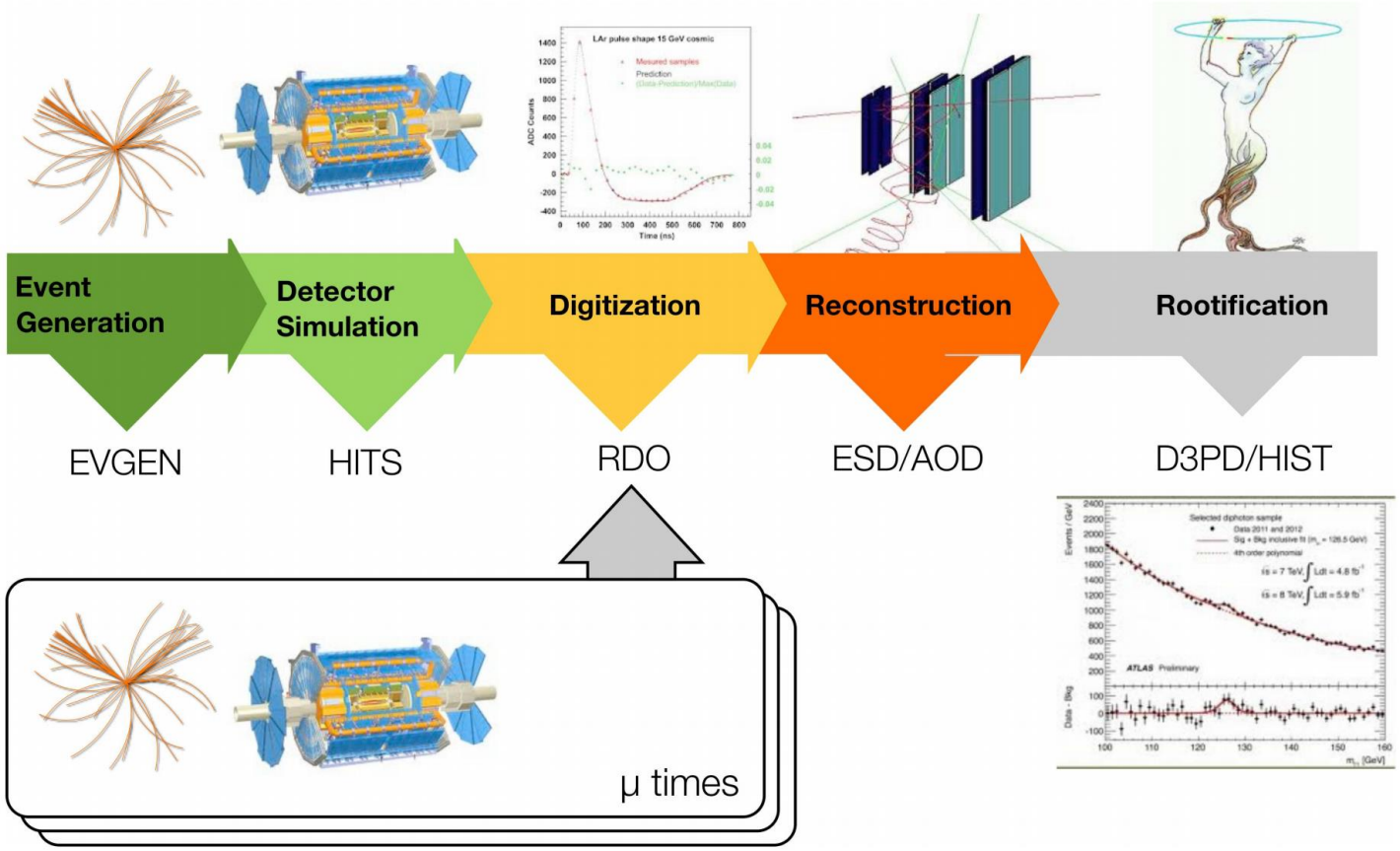
Central pages, references and how-to :

- available samples, known issues, instructions on how to use samples, cross sections and k-factors: see **PMG central repository** in CentralMC15ProductionList

MC production links for MC15a,b,c and MC16 campaigns :

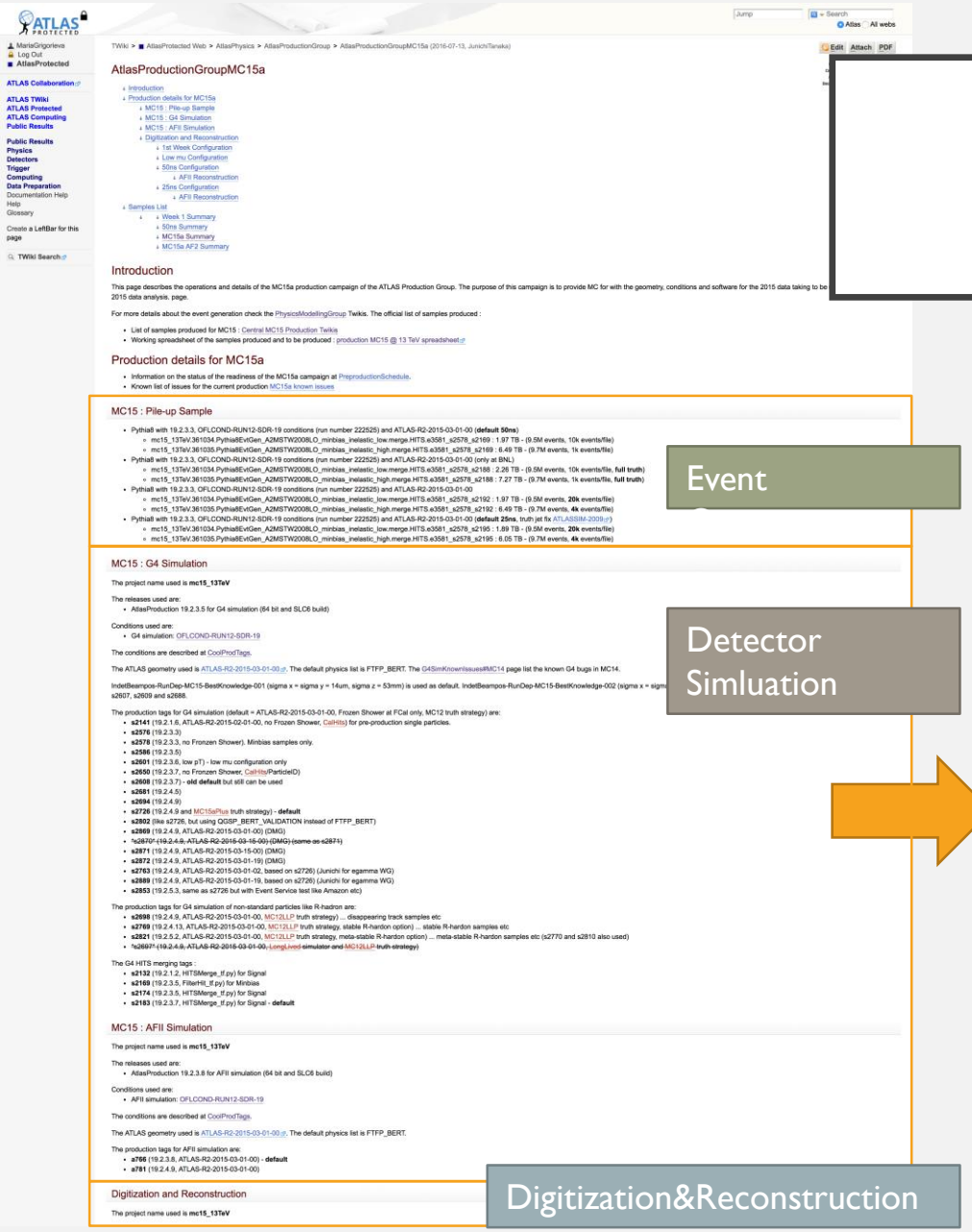
- For full production summary, see also tables in: AtlasProductionGroupMC15FullSummary
- For MC15a production: details, tables and tags in AtlasProductionGroupMC15a
- For MC15b production: details, tables and tags in AtlasProductionGroupMC15b
- For **MC15c production** : details, tables and tags in AtlasProductionGroupMC15c
  - spreadsheets from CP groups and Central page mc15c (responsible: James Dassoulas)
  - MC15c requests JIRA links
  - ExtensionsOnDemand
- Preparation of MC16a on-going, starting from samples relevant for CP groups: see AtlasProductionGroupMC16a. At the moment, we do plan to simulate with Rel20 (MC16) those evgen samples used for the current recommendations and not in urgent need to be replaced with more modern generators.

ATLAS Monte Carlo Production



CAMPAIGNS METADATA IN PMG

MC SUBCAMPAIGN PRODUCTION DETAILS IN TWIKI APG



- Production Steps Configuration:
  - Simulation Strategy [Atlfast-II, Atlfast-IIF, …]
  - Project Name [mc15_13TeV, mc16_13TeV, …]
  - MC Generators [MadGraph, Pythia, …]
  - ATLAS Software Release [AtlasProduction 19.2.3.5 for G4 simulation, …]
  - Number of Events / Events per File
  - ATLAS Geometry [ATLAS-R2-2015-03-01-00, …]
  - Conditions Tags [OFLCOND-RUN12-SDR-19, OFLCOND-RUN12-SDR-19, …]
  - Production Tags [s2141, s2576, s2578, …]
  - Bunch Spacing [25ns, 50ns]
  - Trigger Menu [MCRECO:DBF:TRIGGERDBMC:2009,7,9]
  - Data Taking Period / Run Numbers

Data Knowledge Base Project

https://twiki.cern.ch/twiki/bin/view/AtlasProtected/AtlasProductionGroupMC15a

ATLAS GEOMETRY PARAMETERS

Two databases are used to construct the detector geometry chosen by the user:

- one to store basic constants (the *ATLAS Geometry database*), and
- one to store various conditions data (e.g. calibrations, dead channel, misalignments) for the specific run chosen (*ATLAS Conditions database*).

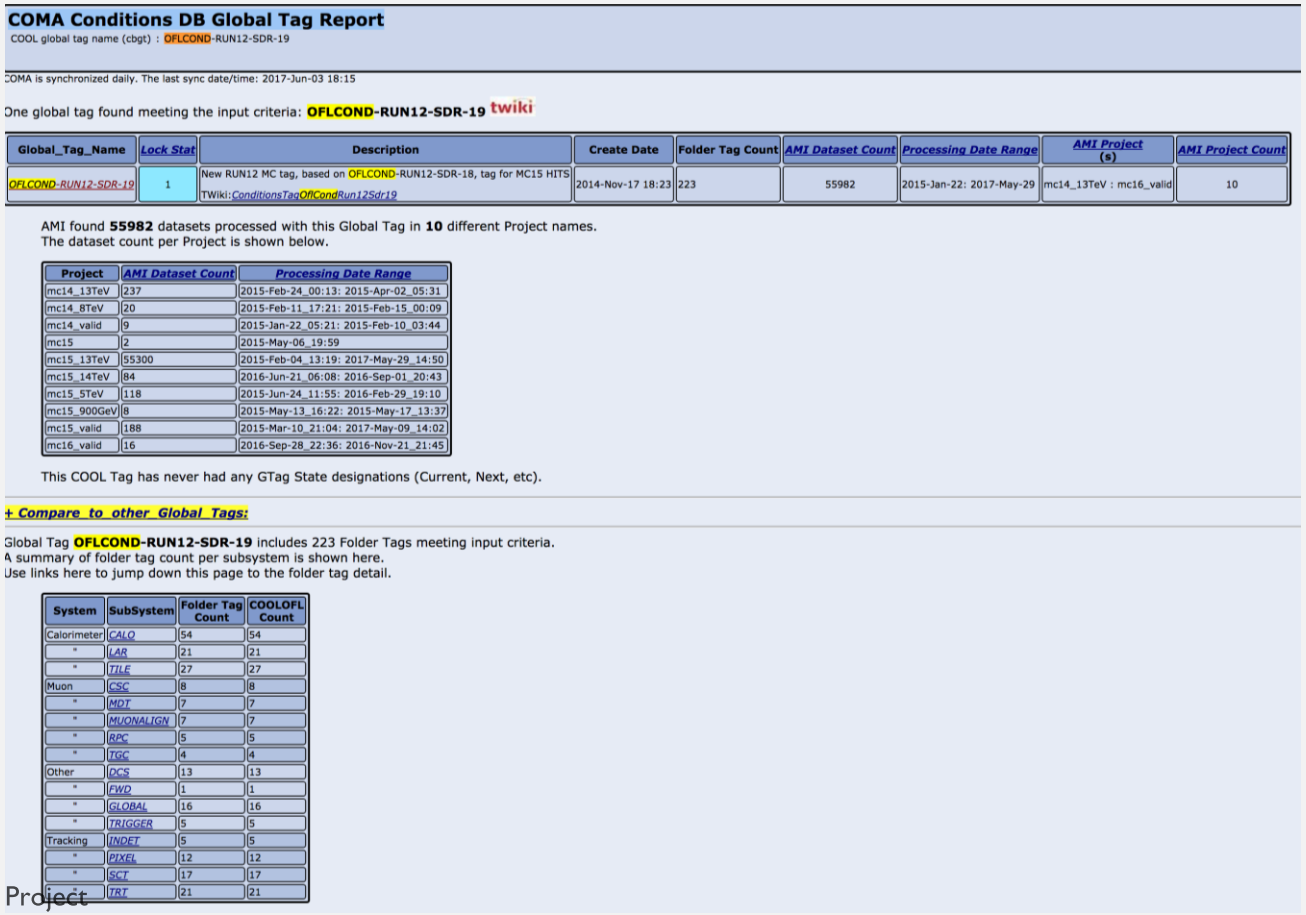
http://atlas.web.cern.ch/Atlas/GROUPS/OPERATIONS/dataBases/DDDB/show_branch_tag_comments.php?tag_name=<ATLAS_GEOMETRY>

A geometry database stores all fundamental constants for detector construction. Volume dimensions, rotations, and positions, as well as element and material properties including density, are all stored as database entries.

Child Tag	Tag Comment
BeamPipe-16	To the beam pipe added 90 mm long aluminium cylinder at the front which sits exactly in the LUCID acceptance
Calorimeter-GEO-00	Neighbor tables Apr-2011
CavernInfra-04	Copy of CavernInfra-03. Changed MAXR of HoleJN in CavernElements
Cryostats-00	
ForwardDetectors-02	Based on ForwardDetectors-01, added the first version of LucidMapping table. 01/03/2010. Extending type field of ZDC identifiers from 0-1 to 0-3. 08/03/2009
InnerDetector-IBL3D25-12-XMAT-02	Clone of the InnerDetector=IBL3D25-12-XMAT-01. The Pixel contain phi-modulated services.
LAr-Revised-17-01	Copy of LAr-Revised-17. Densities of the LArServices materials changed to .35. Changes in the BarrelDM requested by Guillaume
Materials-10	add new materials for the new beam pipe
MuonSpectrometer-R.07.01	R.07.01
TileCal-GEO-09	Copy of TileCal-GEO-08. Introducing E4 cells in EBC32/EBC33
AtlasCommon-RUN2	RUN2
AtlasMother-06	ID inner and outer radii update Merge of ATLAS-GEO-20-00-04 and ATLAS-IBL-02-02-00 (IBL+ATLAS MC prod)

ATLAS CONDITIONS TAGS REPORT

https://atlas-tagservices.cern.ch/tagservices/RunBrowser/runBrowserReport/rBR_CB_Report.php?CBAction=GlobalTagReport&cbgt=<TAG>



COMA Conditions DB Global Tag Report

COOL global tag name (cbgt) : OFLCOND-RUN12-SDR-19

COMA is synchronized daily. The last sync date/time: 2017-Jun-03 18:15

One global tag found meeting the input criteria: **OFLCOND-RUN12-SDR-19** twiki

Global_Tag_Name	Lock Stat	Description	Create Date	Folder Tag Count	AMI Dataset Count	Processing Date Range	AMI Project (s)	AMI Project Count
OFLCOND-RUN12-SDR-19	1	New RUN12 MC tag, based on OFLCOND-RUN12-SDR-18, tag for MC15 HITS TWiki:ConditionsTagOflCondRun12Sdr19	2014-Nov-17 18:23	223	55982	2015-Jan-22: 2017-May-29	mc14_13TeV : mc16_valid	10

AMI found **55982** datasets processed with this Global Tag in **10** different Project names.
The dataset count per Project is shown below.

Project	AMI Dataset Count	Processing Date Range
mc14_13TeV	237	2015-Feb-24_00:13: 2015-Apr-02_05:31
mc14_8TeV	20	2015-Feb-11_17:21: 2015-Feb-15_00:09
mc14_valid	9	2015-Jan-22_05:21: 2015-Feb-10_03:44
mc15	2	2015-May-06_19:59
mc15_13TeV	55300	2015-Feb-04_13:19: 2017-May-29_14:50
mc15_14TeV	84	2016-Jun-21_06:08: 2016-Sep-01_20:43
mc15_5TeV	118	2015-Jun-24_11:55: 2016-Feb-29_19:10
mc15_900GeV	8	2015-May-13_16:22: 2015-May-17_13:37
mc15_valid	188	2015-Mar-10_21:04: 2017-May-09_14:02
mc16_valid	16	2016-Sep-28_22:36: 2016-Nov-21_21:45

This COOL Tag has never had any GTag State designations (Current, Next, etc).

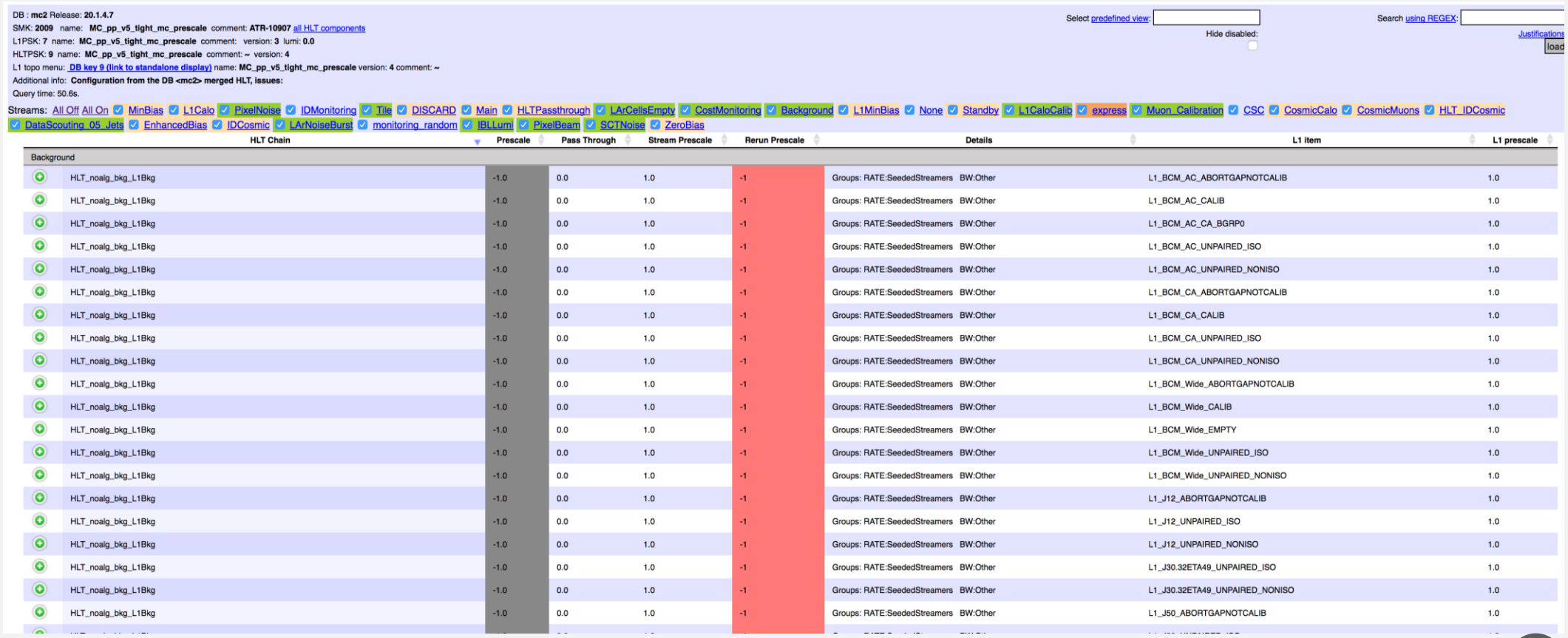
+ Compare to other Global Tags:

Global Tag **OFLCOND-RUN12-SDR-19** includes 223 Folder Tags meeting input criteria.
A summary of folder tag count per subsystem is shown here.
Use links here to jump down this page to the folder tag detail.

System	SubSystem	Folder Tag Count	COOLOFL Count
Calorimeter	CALO	54	54
"	LAR	21	21
"	TILE	27	27
Muon	CSC	8	8
"	MDT	7	7
"	MUONALIGN	7	7
"	RPC	5	5
"	TGC	4	4
Other	DCS	13	13
"	FWD	1	1
"	GLOBAL	16	16
"	TRIGGER	5	5
Tracking	INDET	5	5
"	PIXEL	12	12
"	SCT	17	17
"	TRT	21	21

ATLAS TRIGGER MENU CONFIGURATION

https://atlas-trigconf.cern.ch/mc2/smkey/2009/l1key/7/hltkey/9



DB : **mc2** Release: **20.1.4.7**
SMK: **2009** name: **MC_pp_v5_tight_mc_prescale** comment: **ATR-10907** all HLT components
L1PSK: **7** name: **MC_pp_v5_tight_mc_prescale** comment: version: **3** lumi: **0.0**
HLTPSK: **9** name: **MC_pp_v5_tight_mc_prescale** comment: ~ version: **4**
L1 topo menu: DB key 9 (link to standalone display) name: **MC_pp_v5_tight_mc_prescale** version: **4** comment: ~
Additional info: **Configuration from the DB <mc2> merged HLT, issues:**
Query time: 50.6s.

Select predefined view: Hide disabled: Search using REGEX: Justifications load

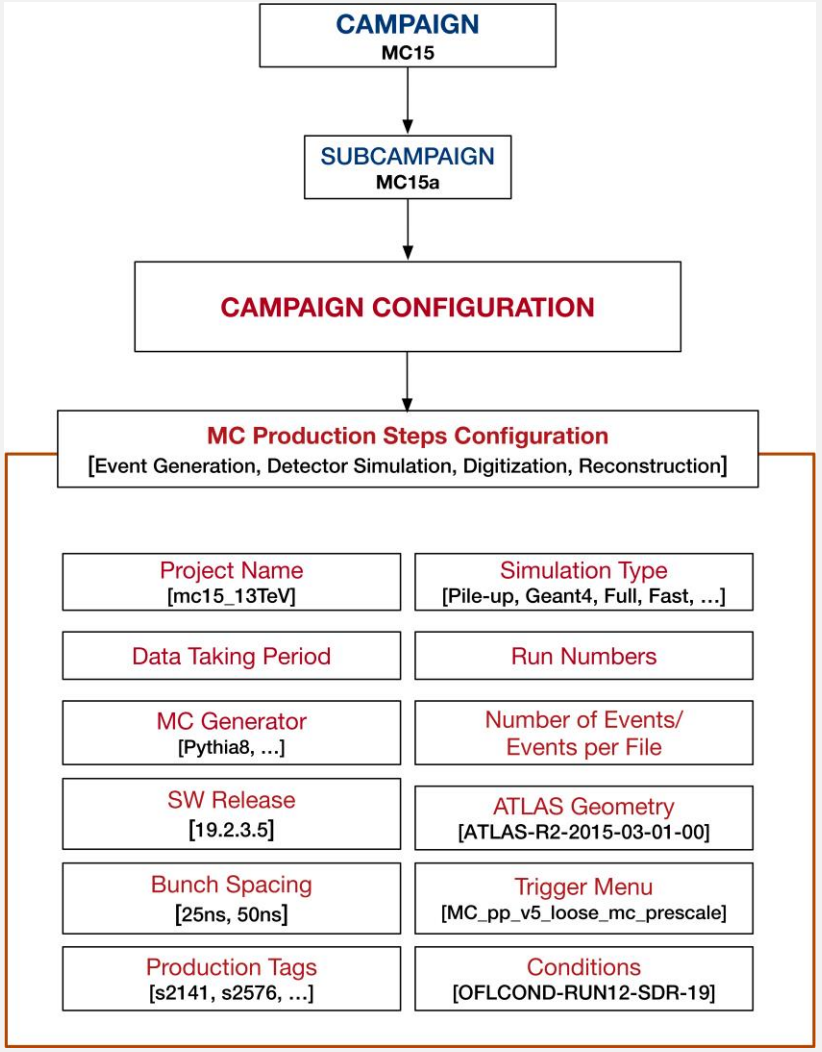
Streams: All Off All On MinBias L1Calo PixelNoise IDMonitoring Tile DISCARD Main HLTPassthrough LArCellsEmpty CostMonitoring Background L1MinBias None Standby L1CaloCalib express Muon_Calibration CSC CosmicCalo CosmicMuons HLT_IDCosmic DataScouting_05_Jets EnhancedBias IDCosmic LArNoiseBurst monitoring_random IBLLumi PixelBeam SCTNoise ZeroBias

HLT Chain	Prescale	Pass Through	Stream Prescale	Rerun Prescale	Details	L1 item	L1 prescale
Background							
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_BCM_AC_ABORTGAPNOTCALIB	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_BCM_AC_CALIB	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_BCM_AC_CA_BGRP0	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_BCM_AC_UNPAIRED_ISO	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_BCM_AC_UNPAIRED_NONISO	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_BCM_CA_ABORTGAPNOTCALIB	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_BCM_CA_CALIB	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_BCM_CA_UNPAIRED_ISO	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_BCM_CA_UNPAIRED_NONISO	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_BCM_Wide_ABORTGAPNOTCALIB	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_BCM_Wide_CALIB	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_BCM_Wide_EMPTY	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_BCM_Wide_UNPAIRED_ISO	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_BCM_Wide_UNPAIRED_NONISO	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_J12_ABORTGAPNOTCALIB	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_J12_UNPAIRED_ISO	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_J12_UNPAIRED_NONISO	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_J30.32ETA49_UNPAIRED_ISO	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_J30.32ETA49_UNPAIRED_NONISO	1.0
HLT_noalg_bkg_L1Bkg	-1.0	0.0	1.0	-1	Groups: RATE:SeededStreamers BW:Other	L1_J50_ABORTGAPNOTCALIB	1.0

PRODUCTION TAGS METADATA
FROM DEFT DB

NAME	a821
TRF_NAME	Reco_tf.py
TRF_CACHE	AtlasProd1
TRF_RELEASE	**20.7.5.1.1**
productionStep	simul
tagType	a
tagNumber	821
groupName	AtlasProd1
cacheName	20.7.5.1.1
baseRelease	20.7.5
transformationName	Reco_tf.py
description	**MC15c AFII 25ns, MC15c mu profile** (284500_v2)(v3)
created	2016-03-21 07:44:29
createdBy	jtanaka
lastModified	2016-03-21 07:46:14
modifiedBy	jtanaka
tagStatus	0
locked	0
transformation	Reco_tf.py
SWReleaseCache	AtlasProd1_20.7.5.1.1
updates	1
autoConfiguration	everything
conditionsTag	**"default:OFLCOND-MC15c-SDR-09"**
digiSteeringConf	'StandardSignalOnlyTruth'
geometryVersion	**"default:ATLAS-R2-2015-03-01-00"**
ignorePatterns	Py:TrigConf2COOLLib.py.+ERROR.==========+
inputHighPtMinbiasHitsFile	mc15_13TeV.361035.Pythia8EvtGen_A2MSTW2008LO_minbias_inelastic_high.merge.HITS.e3581_s2578_s2195
inputLowPtMinbiasHitsFile	mc15_13TeV.361034.Pythia8EvtGen_A2MSTW2008LO_minbias_inelastic_low.merge.HITS.e3581_s2578_s2195
numberOfCavernBkg	0
numberOfHighPtMinBias	0.12268057
numberOfLowPtMinBias	39.8773194
pileupFinalBunch	**6**
postExec	"all:CfgMgr.MessageSvc().setError+=[\"HepMcParticleLink\"]" "ESDtoAOD:fixedAttrib=[s if \"CONTAINER_SPLITLEVEL = \'99\'\" not in s else \"\" for s in svcMgr.AthenaPoolCnvSvc.PoolAttributes];svcMgr.AthenaPoolCnvSvc.PoolAttributes=fixedAttrib"
postInclude	"default:RecJobTransforms/UseFrontier.py"
preExec	"all:rec.Commissioning.set_Value_and_Lock(True);from AthenaCommon.BeamFlags import jobproperties;jobproperties.Beam.numberOfCollisions.set_Value_and_Lock(20.0);from LArROD.LArRODFlags import larRODFlags;larRODFlags.NumberOfCollisions.set_Value_and_Lock(20);larRODFlags.nSamples.set_Value_and_Lock(4);larRODFlags.doOFCPileupOptimization.set_Value_and_Lock(True);larRODFlags.firstSample.set_Value_and_Lock(0);larRODFlags.useHighestGainAutoCorr.set_Value_and_Lock(True)" "RAWtoESD:from CaloRec.CaloCellFlags import jobproperties;jobproperties.CaloCellFlags.doLArCellEmMisCalib=False" "ESDtoAOD:TriggerFlags.AODEDMSet=\"AODSLIM\""
preInclude	"HITtoRDO:Digitization/ForceUseOfPileUpTools.py,SimulationJobOptions/preInclude.PileUpBunchTrainsMC15_2015_25ns_Config1.py,RunDependentSimData/configLumi_run284500_v2.py" "RDOtoRDOTrigger:RecExPers/RecoOutputMetadataList_jobOptions.py"
steering	"doRDO_TRIG"
triggerConfig	**"RDOtoRDOTrigger=MCRECO:DBF:TRIGGERDBMC:2046,20,56"**
notAKTR	1
USERNAME	jtanaka
CREATED	21-MAR-16 06.44.29.000000 AM
TASKID	8015900
STEP_T_ID	9251

CAMPAIGNS DATA MODEL. CONFIGURATION



ATLAS MC PRODUCTION DATA SAMPLES

SUMMARY FOR MC16A

https://twiki.cern.ch/twiki/bin/view/AtlasProtected/AtlasProductionGroupMC16aSummary

Physics Group

Full summary

Production Step

Number of Events

Category	evgen	simul	recon	merge
BPhysics	-	142.6M / 143.54M Done: 99.3%	140.44M / 140.57M Done: 99.9%	140.31M / 140.57M Done: 99.8%
Diboson	-	83.07M / 83.07M Done: 100.0%	83.09M / 83.09M Done: 100.0%	83.09M / 83.1M Done: 100.0%
DrellYan	-	577.69M / 582.77M Done: 99.1%	643.93M / 644.23M Done: 100.0%	637.14M / 637.59M Done: 99.9%
Exotic	-	15.45M / 15.46M Done: 99.9%	19.33M / 19.33M Done: 100.0%	15.53M / 15.59M Done: 99.6%
GammaJets	-	295.83M / 296.51M Done: 99.8%	493.34M / 499.07M Done: 98.9%	453.52M / 458.0M Done: 99.0%
Higgs	-	2.2M / 4.18M Done: 52.6%	2.5M / 2.5M Done: 100.0%	2.49M / 2.5M Done: 99.7%
Minbias	-	75.18M / 75.2M Done: 100.0%	50.98M / 50.98M Done: 100.0%	49.98M / 49.98M Done: 100.0%
Multijet	-	317.19M / 317.44M Done: 99.9%	379.87M / 400.9M Done: 94.8%	373.27M / 384.56M Done: 97.1%
SingleParticle	-	147.75M / 147.8M Done: 100.0%	375.61M / 377.14M Done: 99.6%	307.56M / 307.61M Done: 100.0%
SingleTop	-	21.0M / 21.0M Done: 100.0%	21.0M / 21.0M Done: 100.0%	21.0M / 21.01M Done: 100.0%
SUSY	-	0.16M / 0.16M Done: 100.0%	0.25M / 0.26M Done: 98.4%	0.26M / 0.27M Done: 95.9%
TTbar	5.0M / 5.0M Done: 100.0%	65.02M / 135.0M Done: 48.2%	75.29M / 75.33M Done: 99.9%	65.18M / 65.21M Done: 100.0%
Wjets	9.98M / 9.98M Done: 100.0%	539.7M / 582.5M Done: 92.7%	462.45M / 462.46M Done: 100.0%	462.45M / 462.5M Done: 100.0%
Zjets	-	271.68M / 414.56M Done: 65.5%	271.61M / 271.89M Done: 99.9%	271.6M / 271.98M Done: 99.9%
Unsorted	-	2.07M / 108.89M Done: 1.9%	1.18M / 1.18M Done: 100.0%	1.18M / 1.19M Done: 99.6%
Total	14.98M / 14.98M Done: 100.0%	2556.58M / 2928.09M Done: 87.3%	3020.87M / 3049.92M Done: 99.0%	2884.55M / 2901.64M Done: 99.4%

Data Knowledge Base Project

"Higgs" category breakdown

Summary	Dataset	DSID	Group	evgen (EVNT)	simul (HITS)	recon (AOD)	merge (AOD)	Panda
	PowhegPythia8EvtGen_CT10_AZNLOCTEQ6L1_VBFH125_ZZ4nu **category:** Higgs ['higgs', 'mh125', 'sm', 'smhiggs', 'vbf']	301399	TRIG		AMI Tag: s2997 Stats: 10k/10k 100.0%	AMI Tag: r9191* Stats: 30k/30k 100.0% More...	AMI Tag: r9128* Stats: 30k/30k 100.0% More...	10089
	PowhegPythia8EvtGen_CT10_AZNLOCTEQ6L1_VBFH125_tautaulh **category:** Higgs ['2tau', 'higgs', 'mh125', 'sm', 'smhiggs', 'vbf']	341156	TRIG		AMI Tag: s2997 Stats: 10k/10k 100.0%	AMI Tag: r8957* Stats: 20k/20k 100.0% More...	AMI Tag: r8996* Stats: 20k/20k 100.0% More...	10398
	PowhegPythia8EvtGen_CT10_AZNLOCTEQ6L1_ggH125_ZZ4lep_noTau **category:** Higgs ['higgs', 'smhiggs', 'zz']	341505	TRIG		AMI Tag: s2997 Stats: 20k/20k 100.0%	AMI Tag: r8957* Stats: 30k/30k 100.0% More...	AMI Tag: r8996* Stats: 20k/20k 100.0% More...	10398

"DrellYan" category breakdown

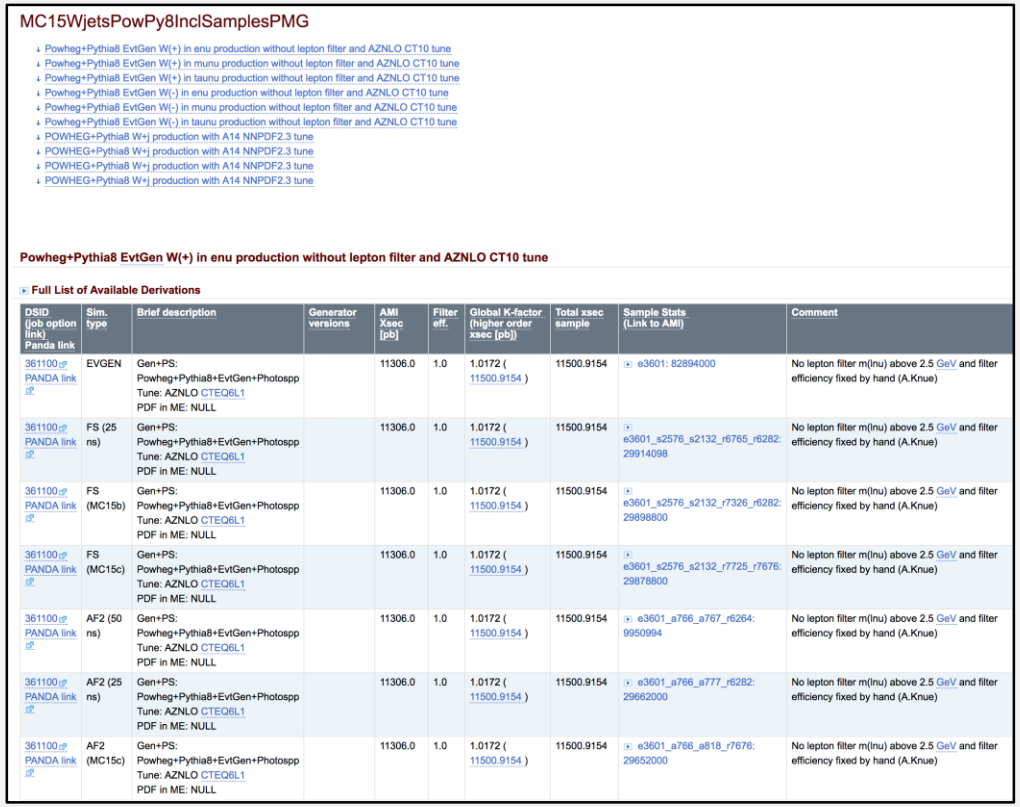
Summary	Dataset	DSID	Group	evgen (EVNT)	simul (HITS)	recon (AOD)	merge (AOD)	Panda
	PowhegPythia8EvtGen_AZNLOCTEQ6L1_DYtautau_120M180 **category:** DrellYan ['2tau', 'drellyan', 'electroweak', 'nlo', 'sm', 'z']	301040	MCGN		AMI Tag: s3126* Stats: 815k/850k 95.9%	AMI Tag: r9476* Stats: 949k/953k 99.6% More...	AMI Tag: r9315* Stats: 938k/950k 98.7% More...	11034
	PowhegPythia8EvtGen_AZNLOCTEQ6L1_Zmumu **category:** DrellYan ['2muon', 'drellyan', 'electroweak', 'nlo', 'sm', 'z']	361107	MCGN		AMI Tag: s2997* Stats: 81893k/81939k 99.9%	AMI Tag: r9364* Stats: 83912k/83912k 100.0% More...	AMI Tag: r9315* Stats: 81913k/81914k 100.0% More...	11049
	PowhegPythia8EvtGen_AZNLOCTEQ6L1_Wminustaunu **category:** DrellYan ['drellyan', 'electroweak', 'neutrino', 'nlo', 'sm', 'tau', 'w']	361105	MCGN		AMI Tag: s3126 Stats: 19955k/19961k 100.0%	AMI Tag: r9364 Stats: 19955k/19955k 100.0%	AMI Tag: r9315 Stats: 19955k/19956k 100.0%	11049

"Exotic" category breakdown

Summary	Dataset	DSID	Group	evgen (EVNT)	simul (HITS)	recon (AOD)	merge (AOD)	Panda
	MadGraphPythia8EvtGen_AZCTEQ6L1_FRVZ4zdDisplacedmH125 **category:** Exotic ['bsmhiggs', 'exotic']	301292	TRIG		AMI Tag: s2997 Stats: 10k/10k 100.0%	AMI Tag: r9191* Stats: 20k/20k 100.0% More...	AMI Tag: r8996* Stats: 20k/20k 100.0% More...	10398
	Pythia8EvtGen_A14NNPDF23LO_Wprime_munu_SSM2000 **category:** Exotic ['bsm', 'electroweak', 'heavyboson', 'lepton', 'neutrino', 'resonance', 'ssm', 'wprime']	301246	TRIG		AMI Tag: s2997 Stats: 10k/10k 100.0%	AMI Tag: r9191* Stats: 20k/20k 100.0% More...	AMI Tag: r8996* Stats: 20k/20k 100.0% More...	10398
	Pythia8EvtGen_A14NNPDF23LO_Zprime_NoInt_mumu_E6Chi4000 **category:** Exotic ['2muon', 'bsm', 'electroweak', 'heavyboson', 'resonance', 'zprime']	301222	MCGN		AMI Tag: s3126 Stats: 1000k/1000k 100.0%	AMI Tag: r9364 Stats: 1000k/1000k 100.0%	AMI Tag: r9315 Stats: 1000k/1002k 99.8%	11048

CENTRAL MC15 PRODUCTION LIST

https://twiki.cern.ch/twiki/bin/view/AtlasProtected/CentralMC15ProductionList



MC15WjetsPowPy8InclSamplesPMG

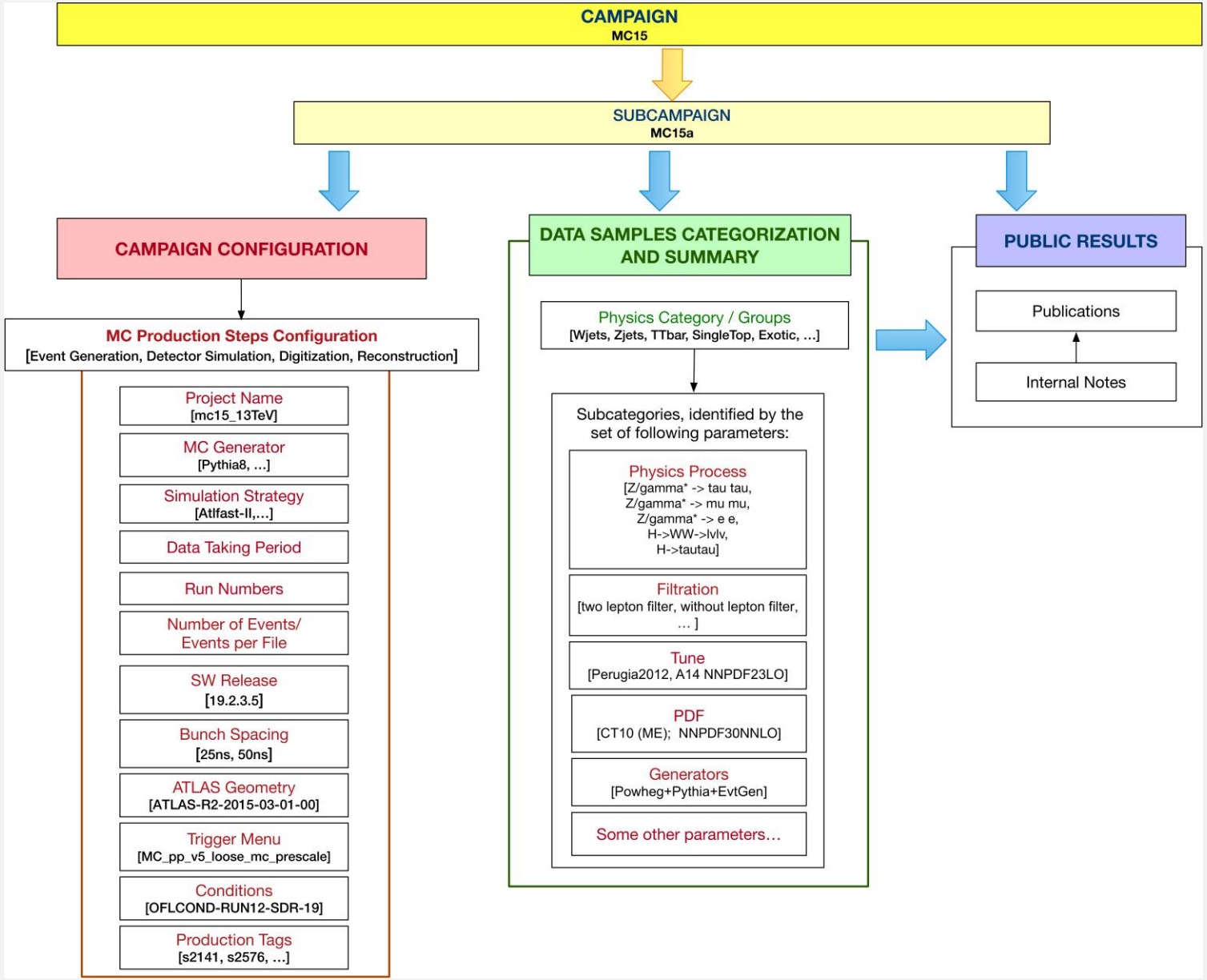
- Powheg+Pythia8 EvtGen W(+) in enu production without lepton filter and AZNLO CT10 tune
- Powheg+Pythia8 EvtGen W(+) in munu production without lepton filter and AZNLO CT10 tune
- Powheg+Pythia8 EvtGen W(+) in taunu production without lepton filter and AZNLO CT10 tune
- Powheg+Pythia8 EvtGen W(-) in enu production without lepton filter and AZNLO CT10 tune
- Powheg+Pythia8 EvtGen W(-) in munu production without lepton filter and AZNLO CT10 tune
- Powheg+Pythia8 EvtGen W(-) in taunu production without lepton filter and AZNLO CT10 tune
- POWHEG+Pythia8 W+j production with A14 NNPDF2.3 tune
- POWHEG+Pythia8 W+j production with A14 NNPDF2.3 tune
- POWHEG+Pythia8 W+j production with A14 NNPDF2.3 tune
- POWHEG+Pythia8 W+j production with A14 NNPDF2.3 tune

Powheg+Pythia8 EvtGen W(+) in enu production without lepton filter and AZNLO CT10 tune

Full List of Available Derivations

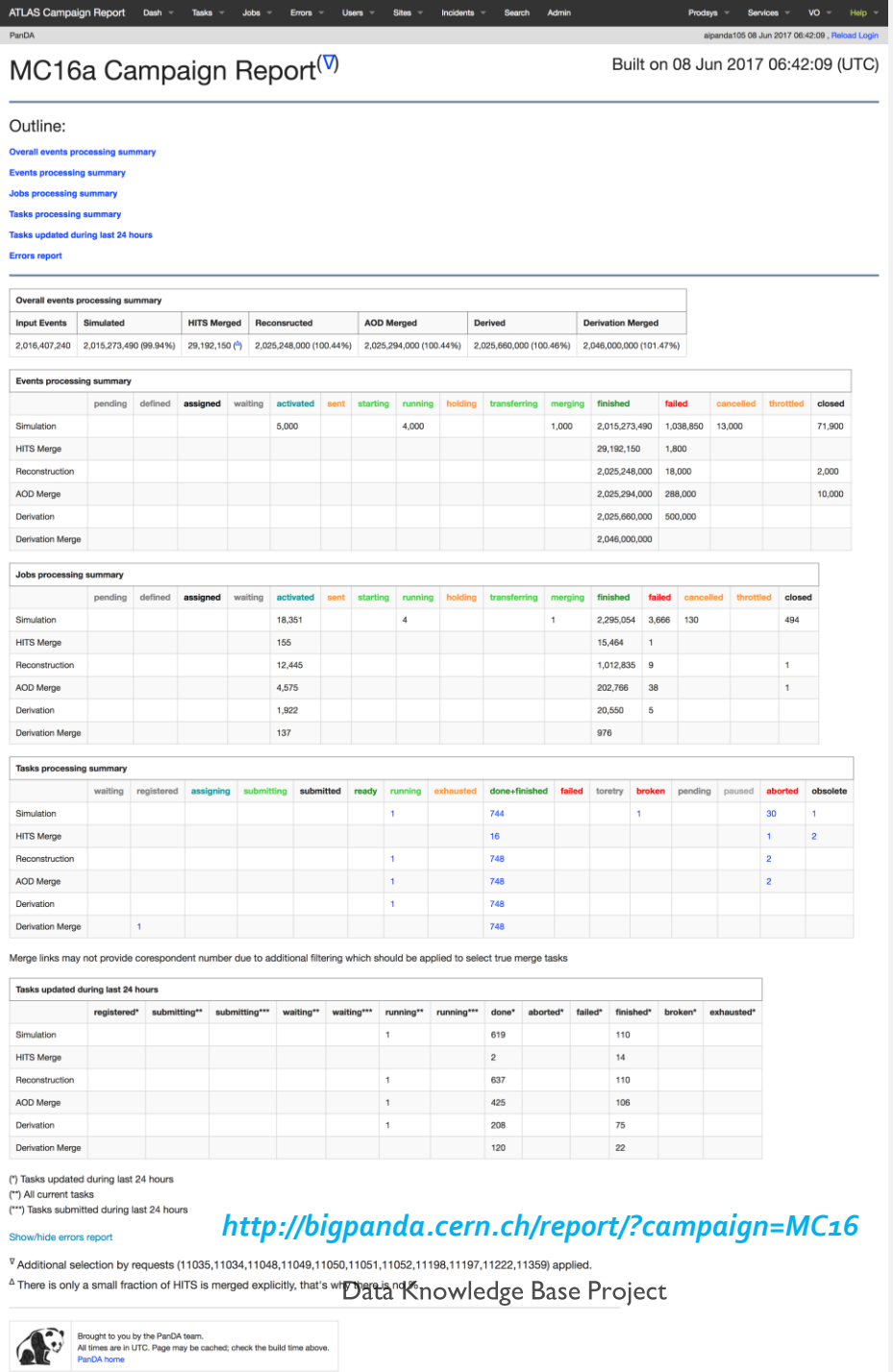
DSID (job option link) Panda link	Sim. type	Brief description	Generator versions	AMI Xsec [pb]	Filter eff.	Global K-factor (higher order xsec [pb])	Total xsec sample	Sample Stats (Link to AMI)	Comment
361100 PANDA link	EVGEN	Gen+PS: Powheg+Pythia8+EvtGen+Photospp Tune: AZNLO CTEQ6L1 PDF in ME: NULL		11306.0	1.0	1.0172 (11500.9154)	11500.9154	e3601: 82894000	No lepton filter m(lnu) above 2.5 GeV and filter efficiency fixed by hand (A.Knue)
361100 PANDA link	FS (25 ns)	Gen+PS: Powheg+Pythia8+EvtGen+Photospp Tune: AZNLO CTEQ6L1 PDF in ME: NULL		11306.0	1.0	1.0172 (11500.9154)	11500.9154	e3601_s2576_s2132_r6765_r6282: 29914098	No lepton filter m(lnu) above 2.5 GeV and filter efficiency fixed by hand (A.Knue)
361100 PANDA link	FS (MC15b)	Gen+PS: Powheg+Pythia8+EvtGen+Photospp Tune: AZNLO CTEQ6L1 PDF in ME: NULL		11306.0	1.0	1.0172 (11500.9154)	11500.9154	e3601_s2576_s2132_r7326_r6282: 29898800	No lepton filter m(lnu) above 2.5 GeV and filter efficiency fixed by hand (A.Knue)
361100 PANDA link	FS (MC15c)	Gen+PS: Powheg+Pythia8+EvtGen+Photospp Tune: AZNLO CTEQ6L1 PDF in ME: NULL		11306.0	1.0	1.0172 (11500.9154)	11500.9154	e3601_s2576_s2132_r7725_r7676: 29878800	No lepton filter m(lnu) above 2.5 GeV and filter efficiency fixed by hand (A.Knue)
361100 PANDA link	AF2 (50 ns)	Gen+PS: Powheg+Pythia8+EvtGen+Photospp Tune: AZNLO CTEQ6L1 PDF in ME: NULL		11306.0	1.0	1.0172 (11500.9154)	11500.9154	e3601_a766_a767_r6264: 9950994	No lepton filter m(lnu) above 2.5 GeV and filter efficiency fixed by hand (A.Knue)
361100 PANDA link	AF2 (25 ns)	Gen+PS: Powheg+Pythia8+EvtGen+Photospp Tune: AZNLO CTEQ6L1 PDF in ME: NULL		11306.0	1.0	1.0172 (11500.9154)	11500.9154	e3601_a766_a777_r6282: 29662000	No lepton filter m(lnu) above 2.5 GeV and filter efficiency fixed by hand (A.Knue)
361100 PANDA link	AF2 (MC15c)	Gen+PS: Powheg+Pythia8+EvtGen+Photospp Tune: AZNLO CTEQ6L1 PDF in ME: NULL		11306.0	1.0	1.0172 (11500.9154)	11500.9154	e3601_a766_a818_r7676: 29652000	No lepton filter m(lnu) above 2.5 GeV and filter efficiency fixed by hand (A.Knue)

- More fine-grained data samples categorization
- Data samples are categorized by a set of parameters:
  - Generators
    - Powheg+Pythia8 …
  - Physics process
    - W+ in mumu
    - W- in taumu
    - Z/gamma* in tau tau ...
  - Filtration
    - Without lepton filter
    - Two lepton filter ...
  - Tune software
    - AZNLO CT10 …



CAMPAIGNS DATA MODEL

1. Campaigns / subcampaigns configuration metadata *[from Twiki pages]*
2. Data Samples categorization and summary – data samples lists breakdown by categories with various granularity, beginning from physics categories *[from ProdSys2]*
3. Public results, connected with campaign could also be categorized the same way as Data Samples *[from current DKB results]*


ATLAS Campaign Report Dash Tasks Jobs Errors Users Sites Incidents Search Admin Prodsys Services VO Help

PanDA aipanda105 08 Jun 2017 06:42:09 , Reload Login

MC16a Campaign Report(▽)

Built on 08 Jun 2017 06:42:09 (UTC)

Outline:

Overall events processing summary
Events processing summary
Jobs processing summary
Tasks processing summary
Tasks updated during last 24 hours
Errors report

Overall events processing summary

Input Events	Simulated	HITS Merged	Reconsructed	AOD Merged	Derived	Derivation Merged
2,016,407,240	2,015,273,490 (99.94%)	29,192,150 (△)	2,025,248,000 (100.44%)	2,025,294,000 (100.44%)	2,025,660,000 (100.46%)	2,046,000,000 (101.47%)

Events processing summary

	pending	defined	assigned	waiting	activated	sent	starting	running	holding	transferring	merging	finished	failed	cancelled	throttled	closed
Simulation					5,000			4,000			1,000	2,015,273,490	1,038,850	13,000		71,900
HITS Merge												29,192,150	1,800			
Reconstruction												2,025,248,000	18,000			2,000
AOD Merge												2,025,294,000	288,000			10,000
Derivation												2,025,660,000	500,000			
Derivation Merge												2,046,000,000				

Jobs processing summary

	pending	defined	assigned	waiting	activated	sent	starting	running	holding	transferring	merging	finished	failed	cancelled	throttled	closed
Simulation					18,351			4			1	2,295,054	3,666	130		494
HITS Merge					155							15,464	1			
Reconstruction					12,445							1,012,835	9			1
AOD Merge					4,575							202,766	38			1
Derivation					1,922							20,550	5			
Derivation Merge					137							976				

Tasks processing summary

	waiting	registered	assigning	submitting	submitted	ready	running	exhausted	done+finished	failed	toretry	broken	pending	paused	aborted	obsolete
Simulation							1		744			1			30	1
HITS Merge									16						1	2
Reconstruction							1		748						2	
AOD Merge							1		748						2	
Derivation							1		748							
Derivation Merge		1							748							

Merge links may not provide corespondent number due to additional filtering which should be applied to select true merge tasks

Tasks updated during last 24 hours

	registered*	submitting**	submitting***	waiting**	waiting***	running**	running***	done*	aborted*	failed*	finished*	broken*	exhausted*
Simulation						1		619			110		
HITS Merge								2			14		
Reconstruction						1		637			110		
AOD Merge						1		425			106		
Derivation						1		208			75		
Derivation Merge								120			22		

(*) Tasks updated during last 24 hours
(**) All current tasks
(***) Tasks submitted during last 24 hours

Show/hide errors report

http://bigpanda.cern.ch/report/?campaign=MC16

▽ Additional selection by requests (11035,11034,11048,11049,11050,11051,11052,11198,11197,11222,11359) applied.

△ There is only a small fraction of HITS is merged explicitly, that's why there is no ...

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All times are in UTC. Page may be cached; check the build time above.
PanDA home

Data Knowledge Base Project

NEAR TERM PLANS

1. Create sample page in BigPanDA monitor with Campaign/Subcampaign configurations and summaries with physics category breakdown in BigPanDA monitor (*Siarhei Padolski*)
    1. Campaigns metadata must be taken from Twiki pages by hand (*Maria*) or using parsing (*Vasily*) [to JSON format]
2. Development of the data model and it's implementation in OrientDB (*Maria&Marina*)
3. Analysis of ElasticSearch (Lucene) approach to metadata processing in terms of campaigns/datasets curation and discovery (*Maria&Marina&Vasily*)
4. Finishing first DKB prototype scripts (*Maria&Marina&Anastasia*)
5. Installation of the DKB software at CERN (*Alexander&Marina*)
6. Execution updated DKB dataflow (*Marina*)
7. Installation of the SPARQL-Endpoint for DEFT at CERN (*Maxim*)

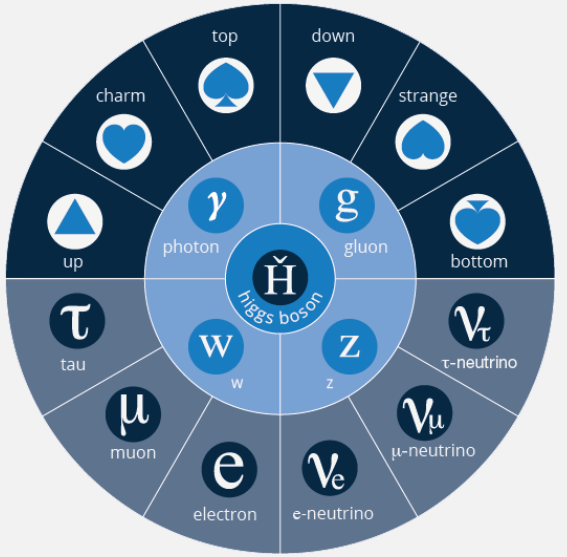
BACKUP SLIDES

FULL MC PRODUCTION CHAIN

1. Event Generation
2. Detector Simulation
3. Digitization
4. Reconstruction

PRODUCTION STEP: EVENT GENERATION

- The generation of the physics event by creating sets of particles.
- Around 30 different MC event generators are in use in ATLAS. Some of them are wonderfully generic (Pythia, HERWIG, Sherpa,…), but often you have to string them together to get a full description of a single collision between two protons at the LHC.
  - FeynRules + MadGraph5 + Pythia8 + EvtGen
- These event generators give you a list of all the particles that come out of a collision between two protons.



We need a different piece of software to take those particles and move them through the detector one by one, helping model the detector's response to each one of the particles as it goes.

PRODUCTION STEP: DETECTOR SIMULATION

- All stable particles from the event generation are tracked through the ATLAS geometry.
- The ATLAS detector simulation is based on Geant4.
  - Geometry description and full detector simulation including the tracing of particles and the electronic response of the active detector elements.
  - It provides a very detailed description of every possible particle interaction within the detector as a long list of energy deposits, times, and locations in the detector.
- Different approaches have been developed to speed up the detector simulation:
  - Atlfast-II
  - Atlfast-IIF
  - Integrated Simulation Framework

http://atlas.cern/updates/atlas-blog/defending-your-life-part-2

PRODUCTION STEP: DIGITIZATION

- The simple idea is to change the energies into whatever it is that the detector reads out – usually times, voltages, and currents (can be different for each type of detector).

PRODUCTION STEP: RECONSTRUCTION

- Event reconstruction consists of the local pattern recognition (i.e. the clustering and resolving of readout channels on the readout detector elements), reconstruction of tracks, segments, vertices, cells and clusters in the different sub-detectors, and finally the creation of high level objects, such as particles of different identification, jets including their flavor tag, or missing energy estimation.

THE PROCEDURE TO GET OFFICIAL MC SAMPLES

https://twiki.cern.ch/twiki/bin/view/AtlasProtected/AtlasProductionGroup

- There are several characters: requesters, MC contacts, PMG conveners, Physics Coordinators (PC), MC production team.
- Requesters contact the group sub-conveners (or conveners) to discuss new samples, the extension of samples etc.
- Once requesters and sub-conveners agree, requesters contact MC contacts in your group (look for a term of "MC Production" at PMG contacts) to make a JIRA ticket to explain what samples are needed etc.
  - The important point to use JIRA is to keep all the discussions as much as possible to have official MC samples.
- Requesters and MC contacts need to do the following items before making its approval request.
  - Requesters prepare JobOption files (JOs), LHE/preconfig files (if necessary) and validate them.
    - The procedure for the validation should follow the steps defined by PMG.
    - MC contacts help requesters to prepare these files but if necessary, requesters or MC contacts can contact PMG and/or MC prod team.

THE PROCEDURE TO GET OFFICIAL MC SAMPLES

https://twiki.cern.ch/twiki/bin/view/AtlasProtected/AtlasProductionGroup

- Once the process is validated,
  - The JO files need to be included in SVN. MC contacts create a JIRA ticket as specified in JobOptions.
  - The LHE/preconfig files (if needed) need to be registered to rucio. MC contacts create a JIRA ticket as specified in LHE/preconfig files.
  - If new model files etc are required, requesters contact generator package's responsible persons.
  - The setup should now be tested in a clean cache (no local jobOption files, using the ones from SVN) and log files should be provided.
- Requesters and MC contacts need to make a spreadsheet, using campaign-specific template.

THE PROCEDURE TO GET OFFICIAL MC SAMPLES

https://twiki.cern.ch/twiki/bin/view/AtlasProtected/AtlasProductionGroup

- MC contacts follow the procedure on how to submit an approval request explained at MCRequestProdSys2.
  - Once MC contacts get the approval request e-mail from the system, MC contacts add the prodsys2 URL to the JIRA ticket page.
    - MC contacts can edit "Description" of the JIRA ticket page so that MC contacts add https://prodtask-dev.cern.ch/prodtask/inputlist_with_request/XXXX/ to the bottom part of the "Description".
  - The decision on whether/when/what size of the sample to be produced is taken by PMG conveners or PC.
- If the request is approved by PMG/PC, MC prod team then handles the production of approved samples.
- Please, read the recent tutorial!
  - https://indico.cern.ch/event/626719/contributions/2531807/attachments/1438017/2212136/Tutorial_MCProdRequest_Junichi_20170403.pdf

PILE-UP

- With increased luminosity, more and more unwanted particle collisions take place (known as "pile-up"), distorting the interaction we are interested in measuring.
- For example, in the data collected last year, a typical collision being studied might be part of an event with 30 other collisions we are not interested in. The interesting collision is characterised by having high momentum particles coming out of it, whilst the other 30 would typically contain low momentum particles.
- One of the greatest challenges faced by the ATLAS experiment is the increasing "pile-up" seen in Run 2 data.
- "Pile-up" consists of numerous additional proton collisions that do not result in what physicists would consider interesting physics, and can drown out signals of much sought-after heavy particles.

PHYSICS CATEGORIES KEYWORDS

https://twiki.cern.ch/twiki/bin/viewauth/AtlasProtected/CentralMC15ProductionList

```
TTbarMap          = ["ttbar"]
SingleTopMap      = ["singleTop", "singletop"]
ExoticMap         = ["exotic", "monojet", "blackhole", "technicolor", "RandallSundrum", "Wprime", "Zprime", "magneticMonopole", "extraDimensions", "warpedED",
                     "randallsundrum", "wprime", "zprime", "magneticmonopole", "extradimensions", "warpeded", "contactInteraction","contactinteraction"]
SUSYMap           = ["SUSY", "pMSSM", "leptoSUSY", "RPV", "bino", "susy", "pmssm", "leptosusy", "rpv"]
HiggsMap          = ["WHiggs", "ZHiggs", "mH125", "Higgs", "VBF", "SMHiggs", "higgs", "mh125", "zhiggs", "whiggs", "bsmhiggs", "chargedHiggs","BSMHiggs","smhiggs"]
MultijetMap       = ["dijet", "multijet", "qcd"]
PerformanceMap    = ["performance"]
TribosonMap       = ["tripleGaugeCoupling", "triboson", "ZZW", "WWW", "triplegaugecoupling", "zzw", "www"]
UpgradeMap        = ["upgrad"]
WjetsMap          = ["W", "w"]
ZjetsMap          = ["Z", "z"]
DibosonMap        = ["diboson","ZZ", "WW", "WZ", "WWbb", "WWll", "zz", "ww", "wz", "wwbb", "wwll"]
MinbiasMap        = ["minBias", "minbias"]
TTbarXMap         = ["ttw","ttz","ttv","ttvv","4top","ttW","ttZ","ttV","ttWW","ttVV"]
BtagMap           = ["bTagging", "btagging"]
SingleParticleMap = ["singleparticle"]
GammaJetsMap      = ["photon", "diphoton"]
DrellYanMap       = ["drellyan"]
BPhysicsMap       = ["charmonium","Jpsi","Bs","Bd","Bminus","Bplus"]
```