

MC tutorial

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ALICE



Requirements

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- Grid certificate
- Using local installation:
 - `cd ~/alice`
 - `aliBuild init O2DPG@master`
 - `aliBuild init STARlight@main` (optional)
 - `aliBuild build O2sim`
 - `alienv enter O2sim/latest`
- Usign precompiled libraries via cvmfs:
 - Can be used on lxplus or your machine if you have Alma9
 - `source /cvmfs/alice.cern.ch/etc/login.sh`
 - `alienv enter O2sim::v20251101-1`

Related tutorials

- Simulations is O2:
- <https://indico.cern.ch/event/1574136/timetable/#29-simulations-in-o2o2physics>
- MC analysis:
- <https://indico.cern.ch/event/1574136/timetable/#33-analysis-of-monte-carlo-dat>

UPC related generators in O2DPG

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- Generators:
 - STARlight
 - Generating exclusive UPC events + performing 2 and 4 body decays
 - UpcGen
 - Specialized for two-photon processes
 - Graniti
 - Pion and Kaon continuum + resonances
 - DPMJET
 - Operated through STARlight to produce photo-nuclear events
 - nOOn
 - Produce forward neutrons in coherent UPCs from STARlight
- Decayer
 - EvtGen

STARlight interface in O2DPG

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- EvtGen is MC decayer developed initially by BaBar
 - Used by PWGDQ to decay B mesons etc.
 - Incorporates radiative decays and corrections using devoted package Photos
 - Via EvtGen we can easily simulate any decay of the particles produced by STARlight
 - Used for:
 - $\psi' \rightarrow J/\psi \pi \pi$
 - Radiative corrections in $J/\psi \rightarrow e^+ e^-$ channel
 - Decays with longitudinal polarization and unpolarized
 - τ decays
 - D mesons and other decays in photo-nuclear events
 - Eventually ρ' decays and ω 3-body decay

O2DPG/MC/config/PWGUD/external/generator/DecayTablesEvtGen

```
Decay tau+
1.0 e+      nu_e anti-nu_tau      PHOTOS TAULNUNU; #[Reconstructed PDG2011]
Enddecay
Decay tau-
0.25 pi-    nu_tau                TAUSCALARNU; #[Reconstructed PDG2011]
0.25 pi-    pi0      nu_tau        TAUHADNU -0.108 0.775 0.149 1.364 0.400; #[Reconstructed PDG2011]
0.25 pi0     pi0      pi-      nu_tau TAUHADNU -0.108 0.775 0.149 1.364 0.400 1.23 0.4; #[Reconstructed PDG2011]
0.25 nu_tau  pi-      pi0      pi0      pi0      PHSP; #[Reconstructed PDG2011]
Enddecay
End
```

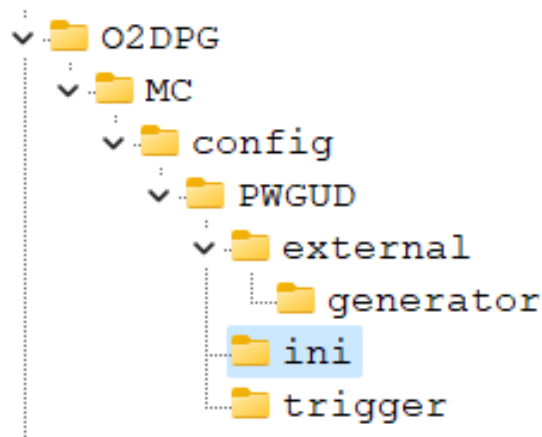
```
Alias myJ/psi J/psi
##
Decay psi(2S)
1.000      myJ/psi  pi+ pi-      VWPIPI;
Enddecay

Decay myJ/psi
1.000      e+  e-      PHOTOS  VLL;
Enddecay
End
```

STARlight interface in O2DPG

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- Consists of few components:
- *external/generator/GeneratorStarlight.C*
- *external/generator/GeneratorStarlightToEvtGen.C*
 - Macro connecting to STARlight and EvtGen
- *trigger/selectParticlesInAcceptance.C*
 - Macro dealing with acceptance cuts (rapidity, eta ...)
- *ini/makeStarlightConfig.py*
 - Python script to create the config.ini file
- Similar structure for the other generators...



STARlight interface in O2DPG

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- Config file (.ini):
- Setup collision system, energy and process
- Trigger takes care of particle selections

```
1  ### The setup uses an external event generator
2  ### This part sets the path of the file and the function call to retrieve it
3
4  [GeneratorExternal]
5  fileName = ${O2DPG_ROOT}/MC/config/PWGUD/external/generator/GeneratorStarlight.C
6  funcName = GeneratorStarlight("kCohJpsiToMu", 5360, 82, 208, 82, 208)
7
8
9  [TriggerExternal]
10 fileName = ${O2DPG_ROOT}/MC/config/PWGUD/trigger/selectParticlesInAcceptance.C
11 funcName = selectMotherPartInAcc(-4.0,-2.5)
12
```

- Config files are created by Python script
 - Based on the process name, beam type and energy creates config file for o2-sim
 - No need to create file for every configuration we need to run, script will do it on-the fly

STARlight interface in O2DPG

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- GeneratorStarlight.C
- Consists of class that connects to STARlight classes

```
1  R_LOAD_LIBRARY(/home/brozmic3/alice/sw/slc7_x86-64/STARlight/20240714-local5/lib/libStarlib.so)
2  R_ADD_INCLUDE_PATH(/home/brozmic3/alice/sw/slc7_x86-64/STARlight/latest/include)
3
4  #include "randomgenerator.h"
5  #include "upcXevent.h"
6  #include "starlight.h"
7  #include "inputParameters.h"
```

```
286 private:
287     starlight      *mStarLight = 0x0;
288     inputParameters mInputParameters; // simulation input information.
289     randomGenerator mRandomGenerator; // STARLIGHT's own random generator
290     upcXEvent       mEvent;           // object holding STARlight simulated event.
291     std::string mSelectedConfiguration = "";
292     int pdgMother = -1;
293     float eCM = 5020; //CMS energy
294     int projA=208;    //Beam
295     int targA=208;
296     int projZ=82;
297     int targZ=82;
```

STARlight interface in O2DPG

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- GeneratorStarlight.C
- Consists of class that connects to STARlight classes and has three main methods:
- Init():Parse all parameters according to the production mode to Starlight

```
const struct SLConfig {
    const char* name;
    int      prod_mode;
    int      prod_pid;
    int      nrbins;
    float     vmin;
    float     vmax;
    int      pdg_mother;
    bool      decay_EvtGen;
} sLConfig[] = {
    {"kTwoGammaToMuLow", 1, 13, 876, 0.4, 15.0, -1, 0 }, // from 0.4 to 15 GeV
    {"kTwoGammaToELow", 1, 11, 876, 0.4, 15.0, -1, 0 }, // from 0.4 to 15 GeV
    {"kTwoGammaToMuMedium", 1, 13, 792, 1.8, 15.0, -1, 0 }, // from 1.8 to 15 GeV
    {"kTwoGammaToELMedium", 1, 11, 792, 1.8, 15.0, -1, 0 }, // from 1.8 to 15 GeV
    {"kTwoGammaToMuHigh", 1, 13, 660, 4.0, 15.0, -1, 0 }, // from 4.0 to 15 GeV
    {"kTwoGammaToELHigh", 1, 11, 660, 4.0, 15.0, -1, 0 }, // from 4.0 to 15 GeV
    {"kTwoGammaToRhoRho", 1, 33, 20, -1.0, -1.0, -1, 0 }, //
    {"kTwoGammaToF2", 1, 225, 20, -1.0, -1.0, -1, 0 }, //
    {"kCohRhoToPi", 3, 113, 1200, -1.0, -1.0, 113, 0 }, //
    {"kCohRhoToE1E1", 3, 113011, 1200, -1.0, -1.0, 113, 0 }, //
    {"kCohRhoToMuMu", 3, 113013, 1200, -1.0, -1.0, 113, 0 }, //
    {"kCohRhoToPiWithCont", 3, 913, 1200, -1.0, -1.0, 113, 0 }, //
    {"kCohRhoToPiFlat", 3, 113, 1, -1.0, 2.5, 113, 0 }, //
    {"kCohPhiToKa", 2, 333, 20, -1.0, -1.0, 333, 0 }, //
    {"kCohPhiToE1", 2, 333011, 20, -1.0, -1.0, 333, 0 }, //
    {"kDirectPhiToKaKa", 3, 933, 20, -1.0, -1.0, 333, 0 }, //
    {"kCohOmegaTo2Pi", 2, 223, 20, -1.0, -1.0, 223, 0 }, //
    {"kCohOmegaTo3Pi", 2, 223, 20, -1.0, -1.0, 223, 1 }, //
    {"kCohOmegaToPiPiPi", 2, 223211111, 20, -1.0, -1.0, 233, 0 }, //
    {"kCohRhoPrimeTo4Pi", 3, 999, 1200, -1.0, 5.0, 30113, 0 }, //
    {"kCohJpsiToMu", 2, 443013, 20, -1.0, -1.0, 443, 0 }, //
    {"kCohJpsiToE1", 2, 443011, 20, -1.0, -1.0, 443, 0 }, //
    {"kCohJpsiToE1Rad", 2, 443011, 20, -1.0, -1.0, 443, 1 }, //
    {"kCohJpsiToProton", 2, 4432212, 20, -1.0, -1.0, 443, 0 }, //
    {"kCohJpsiToLbLbar", 2, 4433122, 20, -1.0, -1.0, 443, 0 }, //
    {"kCohJpsi4Prong", 2, 443013, 20, -1.0, -1.0, 443, 1 }, //
    {"kCohJpsi6Prong", 2, 443013, 20, -1.0, -1.0, 443, 1 }, //
```

STARlight interface in O2DPG

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- GeneratorStarlight.C
- Consists of class that connects to STARlight classes and has three main methods
- Init(): Parse all parameters according to the production mode to Starlight

```
120 setParameter(Form("BEAM_1_Z = %3i #Z of target", targZ));
121 setParameter(Form("BEAM_1_A = %3i #A of target", targA));
122 setParameter(Form("BEAM_2_Z = %3i #Z of projectile", projZ));
123 setParameter(Form("BEAM_2_A = %3i #A of projectile", projA));
124 setParameter(Form("BEAM_1_GAMMA = %6.1f #Gamma of the target", gamma1));
125 setParameter(Form("BEAM_2_GAMMA = %6.1f #Gamma of the projectile", gamma2));
126 setParameter(Form("W_MAX = %1.1f #Max value of w", slConfig[idx].wmax));
127 setParameter(Form("W_MIN = %1.1f #Min value of w", slConfig[idx].wmin));
128 setParameter(Form("W_N_BINS = %3i #Bins i w", slConfig[idx].nwbins));
129 setParameter(Form("RAP_MAX = %1.2f #max y", rapMax));
130 setParameter(Form("RAP_N_BINS = %0.0f #Bins i y", rapMax*2./slConfig[idx].dy));
131 setParameter("CUT_PT = 0 #Cut in pT? 0 = (no, 1 = yes)");
132 setParameter("PT_MIN = 0 #Minimum pT in GeV");
133 setParameter("PT_MAX = 10 #Maximum pT in GeV");
134 setParameter("CUT_ETA = 0 #Cut in pseudorapidity? (0 = no, 1 = yes)");
135 setParameter("ETA_MIN = -5 #Minimum pseudorapidity");
136 setParameter("ETA_MAX = 5 #Maximum pseudorapidity");
137 setParameter(Form("PROD_MODE = %i #gg or gP switch (1 = 2-photon, 2 = coherent vector meson (narrow), 3 = coherent vector me
138 setParameter(Form("PROD_PID = %6i #Channel of interest (not relevant for photonuclear processes)", slConfig[idx].prod_pid));
139 setParameter(Form("RND_SEED = %i #Random number seed", random_seed));
140 setParameter("BREAKUP_MODE = 5 #Controls the nuclear breakup");
141 setParameter("INTERFERENCE = 0 #Interference (0 = off, 1 = on)");
142 setParameter("IF_STRENGTH = 1. #% of interference (0.0 - 0.1)");
143 setParameter("INT_PT_MAX = 0.24 #Maximum pt considered, when interference is turned on");
144 setParameter("INT_PT_N_BINS = 120 #Number of pt bins when interference is turned on");
145 setParameter("XSEC_METHOD = 1 # Set to 0 to use old method for calculating gamma-gamma luminosity"); //CM
146 setParameter("BSLOPE_DEFINITION = 0"); // using default slope
147 setParameter("BSLOPE_VALUE = 4.0"); // default slope value
148 setParameter("PRINT_VM = 0"); // print cross sections and fluxes vs rapidity in stdout for VM photoproduction processes
149
150 if (not mInputParameters.init()) {
151     std::cout << "InitStarLight parameter initialization has failed" << std::endl;
152     return false;
153 }
```

STARlight configuration

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Beam parameters

```
setParameter(Form("BEAM_1_Z    =    %3i    #Z of target",targZ));
setParameter(Form("BEAM_1_A    =    %3i    #A of target",targA));
setParameter(Form("BEAM_2_Z    =    %3i    #Z of projectile",projZ));
setParameter(Form("BEAM_2_A    =    %3i    #A of projectile",projA));
setParameter(Form("BEAM_1_GAMMA = %6.1f    #Gamma of the target",gammal));
setParameter(Form("BEAM_2_GAMMA = %6.1f    #Gamma of the projectile",gamma2));

setParameter(Form("W_MAX      =    %1f    #Max value of w",slConfig[idx].wmax));
setParameter(Form("W_MIN      =    %1f    #Min value of w",slConfig[idx].wmin));
setParameter(Form("W_N_BINS   =    %3i    #Bins i w",slConfig[idx].nwbins));
setParameter(Form("RAP_MAX    =    %2f    #max y",rapMax));
setParameter(Form("RAP_N_BINS =    %0f    #Bins i y",rapMax*2./slConfig[idx].dy));

setParameter("CUT_PT      =    0    #Cut in pT? 0 = (no, 1 = yes)");
setParameter("PT_MIN      =    0    #Minimum pT in GeV");
setParameter("PT_MAX      =    10   #Maximum pT in GeV");
setParameter("CUT_ETA      =    0    #Cut in pseudorapidity? (0 = no, 1 = yes)");
setParameter("ETA_MIN      =    -5   #Minimum pseudorapidity");
setParameter("ETA_MAX      =    5    #Maximum pseudorapidity");
setParameter(Form("PROD_MODE   =    %i    #gg or gP switch (1 = 2-photon, 2 = coherent vector meson (narrow), 3 = coherent vector meson (wide), # 4 = incoherent
vector meson, 5 = A+A DPMJet single, 6 = A+A DPMJet double, 7 = p+A DPMJet single, 8 = p+A Pythia single )",slConfig[idx].prod_mode));
setParameter(Form("PROD_FID    =    %6i    #Channel of interest (not relevant for photonuclear processes)",slConfig[idx].prod_pid));
setParameter(Form("RND_SEED    =    %i    #Random number seed", random_seed));
setParameter("BREAKUP_MODE =    5    #Controls the nuclear breakup");
setParameter("INTERFERENCE =    0    #Interference (0 = off, 1 = on)");
setParameter("IF_STRENGTH   =    1.   %% of interference (0.0 - 0.1)");
setParameter("INT_PT_MAX    =    0.24 #Maximum pt considered, when interference is turned on");
setParameter("INT_PT_N_BINS =    120  #Number of pt bins when interference is turned on");
setParameter("XSEC_METHOD   =    0    # Set to 0 to use old method for calculating gamma-gamma luminosity"); //CM

setParameter("BSLOPE_DEFINITION = 1"); // using default slope
setParameter("BSLOPE_VALUE     =    4.0"); // default slope value
setParameter("PRINT_VM = 0"); // print cross sections and fluxes vs rapidity in stdout for VM photoproduction processes
```

STARlight configuration

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```
setParameter(Form("BEAM_1_Z    =    %3i    #Z of target",targZ));
setParameter(Form("BEAM_1_A    =    %3i    #A of target",targA));
setParameter(Form("BEAM_2_Z    =    %3i    #Z of projectile",projZ));
setParameter(Form("BEAM_2_A    =    %3i    #A of projectile",projA));
setParameter(Form("BEAM_1_GAMMA = %6.1f    #Gamma of the target",gammal));
setParameter(Form("BEAM_2_GAMMA = %6.1f    #Gamma of the projectile",gamma2));
setParameter(Form("W_MAX      =    %1f    #Max value of w",slConfig[idx].wmax));
setParameter(Form("W_MIN      =    %1f    #Min value of w",slConfig[idx].wmin));
setParameter(Form("W_N_BINS   =    %3i    #Bins i w",slConfig[idx].nwbins));
setParameter(Form("RAP_MAX    =    %2f    #max y",rapMax));
setParameter(Form("RAP_N_BINS =    %0f    #Bins i y",rapMax*2./slConfig[idx].dy));
setParameter("CUT_PT        =    0    #Cut in pT? 0 = (no, 1 = yes)");
setParameter("PT_MIN        =    0    #Minimum pT in GeV");
setParameter("PT_MAX        =    10   #Maximum pT in GeV");
setParameter("CUT_ETA       =    0    #Cut in pseudorapidity? (0 = no, 1 = yes)");
setParameter("ETA_MIN       =    -5   #Minimum pseudorapidity");
setParameter("ETA_MAX       =    5    #Maximum pseudorapidity");
setParameter(Form("PROD_MODE   =    %i    #gg or gP switch (1 = 2-photon, 2 = coherent vector meson (narrow), 3 = coherent vector meson (wide), # 4 = incoherent
vector meson, 5 = A+A DPMJet single, 6 = A+A DPMJet double, 7 = p+A DPMJet single, 8 = p+A Pythia single )",slConfig[idx].prod_mode));
setParameter(Form("PROD_FID    =    %6i    #Channel of interest (not relevant for photonuclear processes)",slConfig[idx].prod_pid));
setParameter(Form("RND_SEED    =    %i    #Random number seed", random_seed));
setParameter("BREAKUP_MODE  =    5    #Controls the nuclear breakup");
setParameter("INTERFERENCE   =    0    #Interference (0 = off, 1 = on)");
setParameter("IF_STRENGTH    =    1.    %% of interference (0.0 - 0.1)");
setParameter("INT_PT_MAX     =    0.24 #Maximum pt considered, when interference is turned on");
setParameter("INT_PT_N_BINS  =    120  #Number of pt bins when interference is turned on");
setParameter("XSEC_METHOD    =    0    # Set to 0 to use old method for calculating gamma-gamma luminosity"); //CM
setParameter("BSLOPE_DEFINITION = 1"); // using default slope
setParameter("BSLOPE_VALUE     =    4.0"); // default slope value
setParameter("PRINT_VM = 0"); // print cross sections and fluxes vs rapidity in stdout for VM photoproduction processes
```

Kinematic cuts - not used, done in O2DPG

STARlight configuration

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```
setParameter(Form("BEAM_1_Z    =    %3i    #Z of target",targZ));
setParameter(Form("BEAM_1_A    =    %3i    #A of target",targA));
setParameter(Form("BEAM_2_Z    =    %3i    #Z of projectile",projZ));
setParameter(Form("BEAM_2_A    =    %3i    #A of projectile",projA));
setParameter(Form("BEAM_1_GAMMA = %6.1f    #Gamma of the target",gammal));
setParameter(Form("BEAM_2_GAMMA = %6.1f    #Gamma of the projectile",gamma2));
setParameter(Form("W_MAX      =    %.1f    #Max value of w",slConfig[idx].wmax));
setParameter(Form("W_MIN      =    %.1f    #Min value of w",slConfig[idx].wmin));
setParameter(Form("W_N_BINS   =    %3i    #Bins i w",slConfig[idx].nwbins));
setParameter(Form("RAP_MAX    =    %.2f    #max y",rapMax));
setParameter(Form("RAP_N_BINS =    %.0f    #Bins i y",rapMax*2./slConfig[idx].dy));
setParameter("CUT_PT        =    0    #Cut in pT? 0 = (no, 1 = yes)");
setParameter("PT_MIN        =    0    #Minimum pT in GeV");
setParameter("PT_MAX        =    10    #Maximum pT in GeV");
setParameter("CUT_ETA        =    0    #Cut in pseudorapidity? (0 = no, 1 = yes)");
setParameter("ETA_MIN        =    -5    #Minimum pseudorapidity");
setParameter("ETA_MAX        =    5    #Maximum pseudorapidity");

setParameter(Form("PROD_MODE   =    %i    #gg or gP switch (1 = 2-photon, 2 = coherent vector meson (narrow), 3 = coherent vector meson (wide), # 4 = incoherent
vector meson, 5 = A+A DPMJet single, 6 = A+A DPMJet double, 7 = p+A DPMJet single, 8 = p+A Pythia single )",slConfig[idx].prod_mode));
setParameter(Form("PROD_PID    =    %6i    #Channel of interest (not relevant for photonuclear processes)",slConfig[idx].prod_pid));
setParameter(Form("RND_SEED    =    %i    #Random number seed", random_seed));
setParameter("BREAKUP_MODE   =    5    #Controls the nuclear breakup");
setParameter("INTERFERENCE    =    0    #Interference (0 = off, 1 = on)");
setParameter("IF_STRENGTH     =    1.    %% of interference (0.0 - 0.1)");
setParameter("INT_PT_MAX      =    0.24 #Maximum pt considered, when interference is turned on");
setParameter("INT_PT_N_BINS   =    120  #Number of pt bins when interference is turned on");
setParameter("XSEC_METHOD    =    0    # Set to 0 to use old method for calculating gamma-gamma luminosity"); //CM
setParameter("BSLOPE_DEFINITION = 1"); // using default slope
setParameter("BSLOPE_VALUE     =    4.0"); // default slope value
setParameter("PRINT_VM = 0"); // print cross sections and fluxes vs rapidity in stdout for VM photoproduction processes
```

Configured per process

STARlight configuration

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```
setParameter(Form("BEAM_1_Z    =    %3i    #Z of target",targZ));
setParameter(Form("BEAM_1_A    =    %3i    #A of target",targA));
setParameter(Form("BEAM_2_Z    =    %3i    #Z of projectile",projZ));
setParameter(Form("BEAM_2_A    =    %3i    #A of projectile",projA));
setParameter(Form("BEAM_1_GAMMA = %6.1f    #Gamma of the target",gammal));
setParameter(Form("BEAM_2_GAMMA = %6.1f    #Gamma of the projectile",gamma2));
setParameter(Form("W_MAX      =    %.1f    #Max value of w",slConfig[idx].wmax));
setParameter(Form("W_MIN      =    %.1f    #Min value of w",slConfig[idx].wmin));
setParameter(Form("W_N_BINS   =    %3i    #Bins i w",slConfig[idx].nwbins));
setParameter(Form("RAP_MAX    =    %.2f    #max y",rapMax));
setParameter(Form("RAP_N_BINS =    %.0f    #Bins i y",rapMax*2./slConfig[idx].dy));
setParameter("CUT_PT        =    0    #Cut in pT? 0 = (no, 1 = yes)");
setParameter("PT_MIN        =    0    #Minimum pT in GeV");
setParameter("PT_MAX        =    10    #Maximum pT in GeV");
setParameter("CUT_ETA       =    0    #Cut in pseudorapidity? (0 = no, 1 = yes)");
setParameter("ETA_MIN       =    -5    #Minimum pseudorapidity");
setParameter("ETA_MAX       =    5    #Maximum pseudorapidity");
setParameter(Form("PROD_MODE   =    %i    #gg or gP switch (1 = 2-photon, 2 = coherent vector meson (narrow), 3 = coherent vector meson (wide), # 4 = incoherent
vector meson, 5 = A+A DPMJet single, 6 = A+A DPMJet double, 7 = p+A DPMJet single, 8 = p+A Pythia single )",slConfig[idx].prod_mode));
setParameter(Form("PROD_FID    =    %6i    #Channel of interest (not relevant for photonuclear processes)",slConfig[idx].prod_pid));
setParameter(Form("RND_SEED    =    %i    #Random number seed", random_seed));
setParameter("BREAKUP_MODE  =    5    #Controls the nuclear breakup");

setParameter("INTERFERENCE   =    0    #Interference (0 = off, 1 = on)");
setParameter("IF_STRENGTH    =    1.    %% of interference (0.0 - 0.1)");
setParameter("INT_PT_MAX     =    0.24 #Maximum pt considered, when interference is turned on");
setParameter("INT_PT_N_BINS  =    120  #Number of pt bins when interference is turned on");
setParameter("XSEC_METHOD    =    0    # Set to 0 to use old method for calculating gamma-gamma luminosity"); //CM
setParameter("BSLOPE_DEFINITION = 1"); // using default slope
setParameter("BSLOPE_VALUE    =    4.0"); // default slope value
setParameter("PRINT_VM = 0"); // print cross sections and fluxes vs rapidity in stdout for VM photoproduction processes
```

Other params

STARlight interface in O2DPG

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- GeneratorStarlight.C
- Consists of class that connects to STARlight classes and has three main methods
- generateEvent():

```
197 bool generateEvent() override {
198     ...
199     if (!mStarLight) {
200         std::cout <<"GenerateEvent: StarLight class/object not properly constructed"<<std::endl;
201         return false;
202     }
203
204     mEvent = mStarLight->produceEvent();
205     // boost event to the experiment CM frame
206     mEvent.boost(0.5*(TMath::ACosh(mInputParameters.beam1LorentzGamma()) - TMath::ACosh(mInputParameters.beam2LorentzGamma())));
207
208     return true;
209
210 };
```


STARlight interface in O2DPG

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- GeneratorStarlight.C
- Consists of class that connects to STARlight classes and has three main methods
- importParticles(): Reconstructs the mother particle

```
214 | bool importParticles() override
226 | const std::vector<starlightParticle>* slPartArr(mEvent.getParticles());
227 | const int npart(mEvent.getParticles()->size());
228 |
229 | if(mInputParameters.productionMode()>1){ //Reconstruct mother particle for VM processes
230 |   TLorentzVector lmoth;
231 |   TLorentzVector ldaug;
232 |   for(int ipart=0;ipart<npart;ipart++) {
233 |     const starlightParticle* slPart(&(slPartArr->at(ipart)));
234 |     ldaug.SetPxPyPzE(slPart->GetPx(), slPart->GetPy(), slPart->GetPz(), slPart->GetE());
235 |     lmoth += ldaug;
236 |   }
237 |   TParticle particle(pdgMother,
238 |                     11,
239 |                     -1,
240 |                     -1,
241 |                     1,
242 |                     npart+1,
243 |                     lmoth.Px(),
244 |                     lmoth.Py(),
245 |                     lmoth.Pz(),
246 |                     lmoth.E(),
247 |                     0,0,0,0);
248 |   //particle.Print();
249 |   mParticles.push_back(particle);
```

STARlight interface in O2DPG

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- GeneratorStarlight.C
- Consists of class that connects to STARlight classes and has three main methods
- importParticles(): Create TParticle objects from SLparticles

```
214 bool importParticles() override
253 for(int ipart=0;ipart<npart;ipart++) {
254     const starlightParticle* slPart(&(slPartArr->at(ipart)));
255     if (nVtx < 1) { // No vertices
256         vtx = vty = vtz = vtt = 0.0;
257     } else {
258         vtx = (slVtx->at((ipart < nVtx ? ipart : 0))).X();
259         vty = (slVtx->at((ipart < nVtx ? ipart : 0))).Y();
260         vtz = (slVtx->at((ipart < nVtx ? ipart : 0))).Z();
261         vtt = 0.0; // no time given.
262     } // end if
263     TParticle particle(slPart->getPdgCode(),
264                       1,
265                       0,
266                       -1,
267                       slPart->getFirstDaughter(),
268                       slPart->getLastDaughter(),
269                       slPart->GetPx(),
270                       slPart->GetPy(),
271                       slPart->GetPz(),
272                       slPart->GetE(),
273                       vtx,vty,vtz,vtt);
274     //particle.Print();
275     mParticles.push_back(particle);
```

STARlight processes

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- Coherent and incoherent photoproduction
- $\rho(770)$
 - Breit-Wigner peak
 - Breit-Wigner + interference with $\pi\pi$ continuum
 - Flat mass distribution
- $\rho(1700)$
 - $\pi^+ \pi^- \pi^+ \pi^-$
 - Only coherent
- $\gamma\gamma \rightarrow \mu\mu, \gamma\gamma \rightarrow ee$
 - Starting at $M=0.4\text{GeV}/c$

Rho processes:

Process	N Events	Acceptance cut
kTwoGammaToMuLow	5M	Yes
kTwoGammaToElLow	5M	Yes
kCohRhoToPi	10M	No
kCohRhoToPiWithCont	10M	No
kCohRhoToPiFlat	5M	No
kIncohRhoToPi	10M	No
kIncohRhoToPiWithCont	10M	No
kIncohRhoToPiFlat	5M	No
kCohRhoPrimeTo4Pi	5M	No

STARlight processes

- Coherent and incoherent photoproduction
- J/ψ
 - $\mu\mu$
 - $ee + \gamma$ radiative corrections
 - $p \bar{p}$
 - $K^+K^- \pi^+ \pi^-, \pi^+ \pi^- \pi^+ \pi^-, p \bar{p} \pi^+ \pi^-$
 - $K^+K^- \pi^+ \pi^- \pi^+ \pi^-, \pi^+ \pi^- \pi^+ \pi^- \pi^+ \pi^-$
- ψ'
 - $\mu\mu$
 - ee
 - $J/\psi \pi^+ \pi^-$
- $\gamma\gamma \rightarrow \mu\mu, \gamma\gamma \rightarrow ee$
 - Starting at $M=1.8\text{GeV}/c$

Charmonia processes:

Process	N Events	Acceptance cut
kTwoGammaToMuMedium	5M	Yes
kTwoGammaToElMedium	5M	Yes
kCohJpsiToMu	10M	No
kCohJpsiToElRad	10M	No
kCohJpsiToProton	2M	No
kCohPsi2sToMu	5M	No
kCohPsi2sToEl	5M	No
kCohPsi2sToMuPi	5M	No
kCohPsi2sToElPi	5M	No
klIncohJpsiToMu	10M	No
klIncohJpsiToElRad	10M	No
klIncohJpsiToProton	2M	No
klIncohPsi2sToMu	5M	No
klIncohPsi2sToEl	5M	No
klIncohPsi2sToMuPi	2M	No
klIncohPsi2sToElPi	2M	No
kCohJpsi4Prong	5M	Yes
kCohJpsi6Prong	5M	Yes

STARlight processes

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- $\gamma\gamma \rightarrow \tau\tau$
 - Using STARlight process 15 and EvtGen decays:
 - $\tau\tau \rightarrow e^+ \pi^- \pi^+ \pi^-$
 - $\tau\tau \rightarrow e^- \pi^+ \pi^- \pi^+$
 - $\tau\tau \rightarrow ee, e\mu, \mu\mu$
 - $\tau\tau \rightarrow e^+ \pi^- + (0,1,2,3) * \pi^0$
 - $\tau\tau \rightarrow e^- \pi^+ + (0,1,2,3) * \pi^0$

Tau processes:

Process	N Events	Acceptance cut
kTauLowToEI3Pi	2M	Yes
kTauLowToPo3Pi	2M	Yes
kTauLowToEIMu	10M	Yes
kTauLowToEIPiPi0	10M	Yes
kTauLowToPoPiPi0	10M	Yes

STARlight processes

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- STARlight + DPMJET to produce photo-nuclear interactions
 - Photon coming from A-side or C-side
 - Minimum-bias processes
 - Triggered processes: Store only events with at least one requested particle at mid-rapidity
 - ϕ : K^+K^- pair with both in $|\eta| < 0.9$
 - K^* : π^+K^- pair with both in $|\eta| < 0.9$
 - D mesons: D in $|y| < 0.9$
 - Decays of various open-charmed via EvtGen

PhotoNuclear processes

Process	N Events	Acceptance cut
kDpmjetSingleA	10M	No
kDpmjetSingleC	10M	No
kDpmjetSingleA_Dzero	2M	Yes
kDpmjetSingleA_Dcharged	2M	Yes
kDpmjetSingleA_Dstar	2M	Yes
kDpmjetSingleA_Phi	2M	Yes
kDpmjetSingleA_Kstar	2M	Yes
kDpmjetSingleC_Dzero	2M	Yes
kDpmjetSingleC_Dcharged	2M	Yes
kDpmjetSingleC_Dstar	2M	Yes
kDpmjetSingleC_Phi	2M	Yes
kDpmjetSingleC_Kstar	2M	Yes

Running simulation

Event generation and Anchored MC

Event Generation

- **Prepare config:**

- `$O2DPG_ROOT/MC/config/PWGUD/ini/makeStarlightConfig.py --process kCohJpsiToMu --collType PbPb --eCM 5360 --rapidity cent_rap`
- `$O2DPG_ROOT/MC/config/PWGUD/ini/makeStarlightConfig.py --process kDpmjetSingleC_Dzero --collType PbPb --eCM 5360 --dpmjetConf '$O2DPG_ROOT/MC/config/PWGUD/ini/dpmjet_PbPb5360.txt'`
- `$O2DPG_ROOT/MC/config/PWGUD/ini/makeStarlightConfig.py --process kTauLowToElPiPio --collType Op --eCM 9620 --rapidity cent_eta --extraPars 'BEAM_1_GAMMA = 3620.9;BEAM_2_GAMMA = 7249.5'`

- **Run event generation:**

- `o2sim -g external -t external --configFile 'GenStarlight.ini' --noGeant -n 100 -j 1`

- **Output:**

- `o2sim_Kine.root, o2sim_MCHheader.root`

Reading kinematics tree

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```
int analyzeKine()
{
    std::string path{"o2sim_Kine.root"};
    TFile file(path.c_str(), "READ");
    if (file.IsZombie())
    {
        std::cerr << "Cannot open ROOT file " << path << "\n";
        return 1;
    }
    auto tree = (TTree *)file.Get("o2sim");
    if (!tree)
    {
        std::cerr << "Cannot find tree o2sim in file " << path << "\n";
        return 1;
    }

    std::vector<o2::MCTrack> *tracks{};
    tree->SetBranchAddress("MCTrack", &tracks);

    auto nEvents = tree->GetEntries();

    for (int i = 0; i < nEvents; i++)
    {
        cout<<"Event "<<i<<endl;
        auto check = tree->GetEntry(i);

        for (int idxMCTrack = 0; idxMCTrack < tracks->size()-1; ++idxMCTrack)
        {
            auto track = tracks->at(idxMCTrack);
            cout<<track.GetPdgCode()<<" "<< track.GetPt()<<" "<<track.GetEta()<<" "<< track.getMotherTrackId()<<" "<< track.isTransported()<<"
            "<<track.getFirstDaughterTrackId()<<endl;
        }
    }
    return 0;
}
```

Anchored MC

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- `${O2DPG_ROOT}/GRID/utils/grid_submit.sh --script ./runSTARlightANCHOR.sh --jobname Prodtest --outputspec "*.log@disk=1","*.root@disk=2" --packagespec "VO_ALICE@O2sim::v20250415-1" --wait --fetch-output --asuser mbroz --local`
- With `--local` it runs on your computer in `/tmp/alien_work/...`

```
export ALIEN_JDL_LPMANCHORPASSNAME=apass4
export ALIEN_JDL_MCANCHOR=apass4
export ALIEN_JDL_COLLISIONSYSTEM=PbPb
export ALIEN_JDL_CPULIMIT=8
export ALIEN_JDL_LPMPASSNAME=apass4
export ALIEN_JDL_LPMRUNNUMBER=544123
export ALIEN_JDL_LPMPRODUCTIONTYPE=MC
export ALIEN_JDL_LPMINTERACTIONTYPE=PbPb
export ALIEN_JDL_LPMPRODUCTIONTAG=MyPass4Test
export ALIEN_JDL_LPMANCHORRUN=544123
export ALIEN_JDL_LPMANCHORPRODUCTION=LHC23zzh
export ALIEN_JDL_LPMANCHORYEAR=2023

export NTIMEFRAMES=5
export NSIGEVENTS=100
export NBKGEVENTS=5
export SPLITID=10
export PRODSPLIT=10
export CYCLE=0
export ALIEN_PROC_ID=2963436952

export ALIEN_JDL_ANCHOR_SIM_OPTIONS="-gen external -trigger external -ini ${PWD}/GenStarlight.ini"

${O2DPG_ROOT}/MC/config/PWGUD/ini/makeStarlightConfig.py --process kCohJpsiToMu --collType PbPb --eCM 5360 --rapidity muon_eta
${O2DPG_ROOT}/MC/run/ANCHOR/anchorMC.sh
```

Anchored MC

Welcome **siragoni**,

PID	Main sw package	Command	Status
3049882297		testPhi-20240403-0	RUNNING (1 jobs, 100%) 3049882298 : trace, 3.739 GB PSS, No Swap PSS
			1 jobs

/alice/cern.ch/user/s/siragoni/selfjobs/testPhi-20240403-070924

Welcome siragoni (~) with role (~)

Permissions	Owner	Timestamp	Name
drwxr-xr-x	siragoni:siragoni	today 09:09	output 

Create new folder

1 folder

Permissions	Owner	Timestamp	Size	Filename
-rwxr-xr-x	siragoni:siragoni	today 10:09	1.274 KB	alien_jobscript.sh 
-rwxr-xr-x	siragoni:siragoni	today 09:29	580 B	testPhi-20240403-070924.jdl 
-rwxr-xr-x	siragoni:siragoni	today 09:49	23.41 KB	testPhi-20240403-070924.sh 

Edit new file

25.25 KB in 3 files

Upload files in this folder (500MB max, multiple selection possible)

Choose Files No file chosen

Upload...

Embedded productions

With hadronic background

Production with embedding

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- Events from STARlight (Signal) and Pythia (Background) are injected in a fixed pattern (here S B S B...) to orbits according to filling scheme and interaction rate
- One can control S/B ratio: the pattern can be S B B B S B B B S or so

```
Collision parts taken from simulations specified by prefix:
Part 0 : bkg
Part 1 : sgn_1
QED information included 0
Number of Collisions 39
Collision 0 TIME BCid: 2542 Orbit: 176635102 |T in BC(ns): 0.206 (1 , 0)
Collision 1 TIME BCid: 3097 Orbit: 176635102 |T in BC(ns): 0.261 (0 , 0)
Collision 2 TIME BCid: 1575 Orbit: 176635103 |T in BC(ns): 0.200 (1 , 1)
Collision 3 TIME BCid: 2472 Orbit: 176635104 |T in BC(ns): 0.138 (0 , 1)
Collision 4 TIME BCid: 806 Orbit: 176635109 |T in BC(ns): 0.198 (1 , 2)
Collision 5 TIME BCid: 838 Orbit: 176635109 |T in BC(ns): 0.002 (0 , 2)
Collision 6 TIME BCid: 1325 Orbit: 176635109 |T in BC(ns): 0.071 (1 , 3)
Collision 7 TIME BCid: 1475 Orbit: 176635109 |T in BC(ns): 0.193 (0 , 3)
Collision 8 TIME BCid: 1008 Orbit: 176635110 |T in BC(ns): -0.189 (1 , 4)
Collision 9 TIME BCid: 1573 Orbit: 176635110 |T in BC(ns): 0.263 (0 , 4)
Collision 10 TIME BCid: 1020 Orbit: 176635111 |T in BC(ns): 0.286 (1 , 5)
Collision 11 TIME BCid: 3127 Orbit: 176635111 |T in BC(ns): 0.276 (0 , 5)
Collision 12 TIME BCid: 1711 Orbit: 176635112 |T in BC(ns): -0.046 (1 , 6)
Collision 13 TIME BCid: 362 Orbit: 176635113 |T in BC(ns): -0.100 (0 , 6)
Collision 14 TIME BCid: 1759 Orbit: 176635113 |T in BC(ns): 0.121 (1 , 7)
Collision 15 TIME BCid: 2753 Orbit: 176635113 |T in BC(ns): -0.482 (0 , 7)
Collision 16 TIME BCid: 826 Orbit: 176635114 |T in BC(ns): 0.066 (1 , 8)
Collision 17 TIME BCid: 692 Orbit: 176635116 |T in BC(ns): -0.023 (0 , 8)
Collision 18 TIME BCid: 2166 Orbit: 176635116 |T in BC(ns): 0.287 (1 , 9)
Collision 19 TIME BCid: 2817 Orbit: 176635116 |T in BC(ns): -0.021 (0 , 9)
Collision 20 TIME BCid: 1949 Orbit: 176635117 |T in BC(ns): -0.412 (1 , 10)
Collision 21 TIME BCid: 2190 Orbit: 176635118 |T in BC(ns): 0.230 (0 , 0)
Collision 22 TIME BCid: 446 Orbit: 176635120 |T in BC(ns): 0.035 (1 , 11)
```

Embedding

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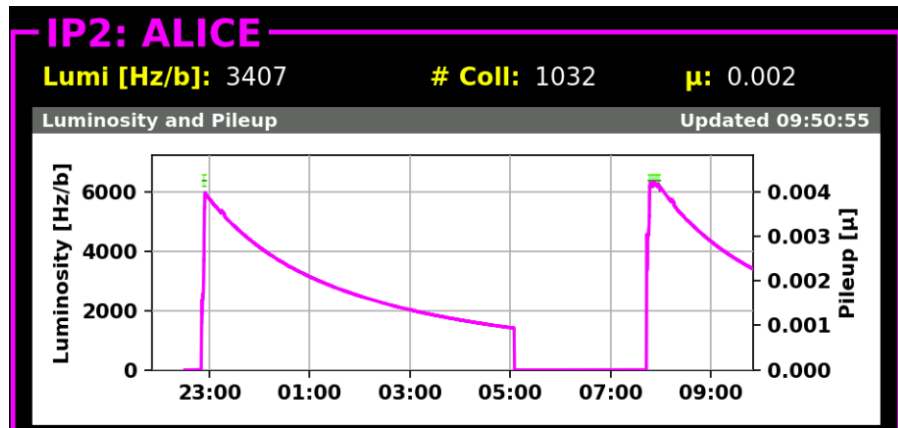
- The background from hadronic events affects the vertex reconstruction if there is hadronic event in the same ITS readout frame as UPC event
- Probability follows the Poisson distribution with λ = Interaction rate/ITS readout rate
- ITS readout rate = 67 kHz for Pb-Pb data taking
- Interaction rate 10 kHz – 35 kHz, never exceed 45 kHz for 2023 and 50 kHz in 2024 – has an exponential distribution within run/fill
- We run embedded production for kCohJpsiToMu, kCohRhoToPi, kCohPsi2sToMuPi with ... S B S B ... pattern

$$f(k; \lambda) = \Pr(X=k) = \frac{\lambda^k e^{-\lambda}}{k!},$$

where

- k is the number of occurrences ($k = 0, 1, 2, \dots$)

	Rate [kHz]		
N int	10	30	45
0	86%	64%	51%
1	13%	29%	34%
2	1%	6%	12%
3	0%	1%	3%

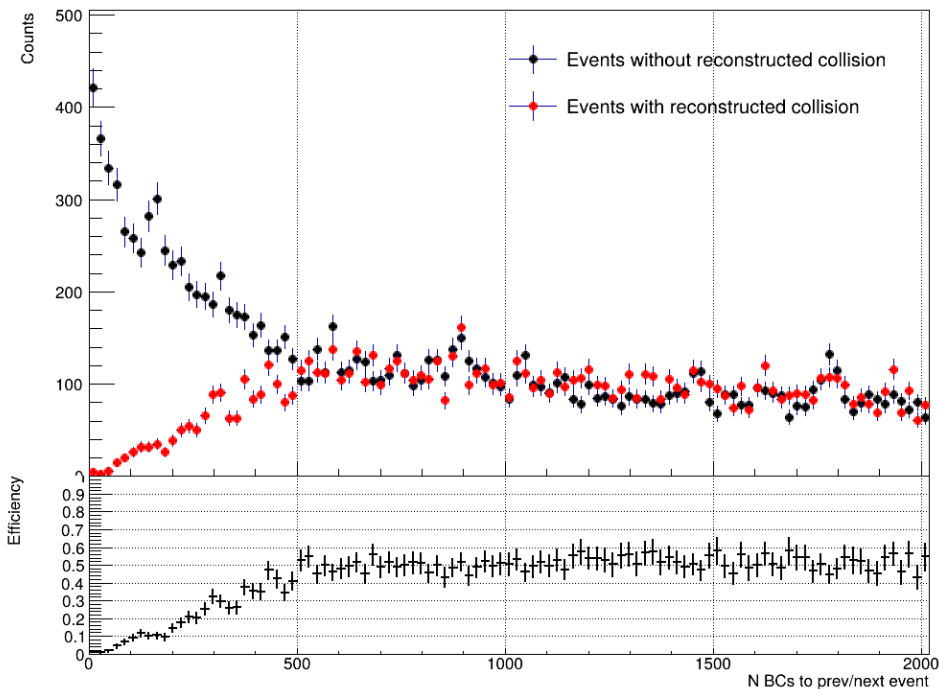


Production with embedding

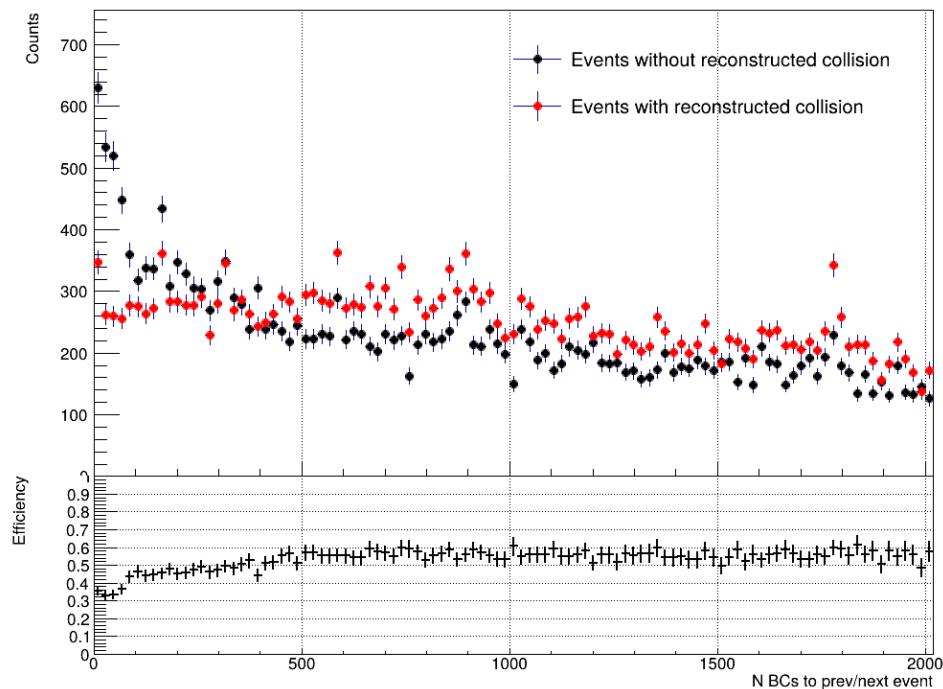
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- ITS readout rate in Pb-Pb data-taking = 67 kHz $\rightarrow$ Readout frame length is ~ 600 BCs
- Collision reconstruction efficiency drops when there is another event in the same ITS readout frame – effect is more pronounced with hadronic events, but exists also for only STARlight events

kCohJpsiToMu_Embed



kCohJpsiToMu



alimonitor and JIRA how-to

How to find info on official productions

https://alimonitor.cern.ch

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MonALISA Repository for ALICE



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- ALICE Repository
 - Google Map
 - Shifter's dashboard
 - Run Condition Table
 - Production Overview
 - Production Info
 - Run view
 - RAW production cycles
 - RAW activities
 - LEGO trains
 - Analysis train
 - MC production cycles
 - MC activities
 - QA feedback status
 - Jobs Information
 - Site Views
 - User Views
 - Aggregated jobs
 - Aggregated cores
 - Per user history
 - All users history
 - Grid packages
 - Quotas
 - Task queue
 - Multicore jobs
 - Job timings
 - Memory Profiles
 - Federation views
 - Job Agents
 - SE Information
 - Services
 - Network Traffic
 - Data Transfers
 - Dynamic charts

close all

☆ User space

- Catalogue
- Jobs
- LEGO Trains

≡ Production list

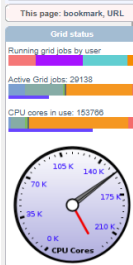
- Monte-Carlo
- RAW data
- RCT

✧ Grid status

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https://alimonitor.cern.ch/job_details.jsp

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MonALISA Repository for ALICE



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PRODUCTION CYCLES

Job Details » No filter

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		Runs				Remaining time									
		Range		Count	Event Count	Requested	@10000 cores	Comment		Known issues		Running time	Saving time	Output size	Software packages
LHC25k7	pp, 13.0 TeV - Non-prompt psi(2S) -> Jpsi pi pi in pp at 13.0 TeV (2024 - pass1 anchoring), O2-6389			550367-550369	2	108,468		RAW OCDB				12d 1:51	6:56	78.79 GB	O2PDPSuite:IMC-prod-2025-v14-1
LHC25k6	pp, 13.0 TeV - Prompt psi(2S) -> Jpsi pi pi in pp at 13.0 TeV (2024 - pass1 anchoring), O2-6389			550367-550369	2	107,664		RAW OCDB				12d 10:12	5:36	66.74 GB	O2PDPSuite:IMC-prod-2025-v14-1
LHC25k5	O-O, 5.36 TeV - UD, UPC forward rapidity STARlight production anchored to O-O 2025 pass2, O2-6416			564356-564445	9	6,859,600		RAW OCDB				5y 62d	14d 20:23	200.3 GB	O2PDPSuite:IMC-prod-2025-v14-1
LHC25k4a_2	Pb-Pb, 5.36 TeV - HF c,b enriched CRModel2 embedded (1signal-2bkg embedded pattern) in Angantyr with signal filtering, Pb-Pb, 5.36 TeV 2023 apass4 anchored production, without loopers, half 2, O2-6438			544123-544123	1	630,968		RAW OCDB				12y 35d	51d 4:06	954.3 GB	O2PDPSuite:IMC-prod-2025-v14-1
LHC25k4a_1	Pb-Pb, 5.36 TeV - HF c,b enriched CRModel2 embedded (1signal-2bkg embedded pattern) in Angantyr with signal filtering, Pb-Pb, 5.36 TeV 2023 apass4 anchored production, without loopers, half 1, O2-6438			544123-544123	1	614,321		RAW OCDB				12y 20d	57d 6:43	939.7 GB	O2PDPSuite:IMC-prod-2025-v14-1
LHC25k3	pp, 5.36 TeV - Prompt charmonia to e+e- in pp at 5.36 TeV (2024 - pJpsi anchoring), O2-6433			559348-559361	2	7,716,220		RAW OCDB				2y 76d	5d 2:10	1,012 TB	O2PDPSuite:IMC-prod-2025-v14-1
LHC25k2	Pb-Pb, 5.36 TeV - Prompt charmonia to e+e- in PbPb at 5.36 TeV (2023 - pass2 anchoring), O2-6430			544013-544032	3	97,136		RAW OCDB				3y 96d	7d 0:03	451.5 GB	O2PDPSuite:IMC-prod-2025-v14-1
LHC25k1	O-O, 5.36 TeV - LF MC with injected nuclei and hypernuclei anchored to O2 2025 apass2 (LHC25ae), O2-6418			564356-564373	3	865,307		RAW OCDB				2y 273d	8d 11:23	698.9 GB	O2PDPSuite:IMC-prod-2025-v14-1
LHC25j1b	Pb-Pb, 5.36 TeV - General-purpose MC production test for ITS performance/processing anchored to apass2 of Pb-Pb 2024 data, b-cycle, O2-6328			560184-560184	1	802,305		RAW OCDB				20y 333d	20d 15:48	1,661 TB	O2PDPSuite:daily-20251101-0000-1
LHC25h5_pp_residuals_vsdist	pp, 13.0 TeV - General Purpose MC production anchored to apass1 of 2025 data, low-B data, TPC correction maps extraction test with MC, residual extraction w/ distortions, O2-6224			566341-566407	2	19,633,636		RAW OCDB				7y 185d	36d 17:35	1,778 TB	O2PDPSuite:IMC-prod-2025-v13-1
LHC25h5_pp_residuals_nodist	pp, 13.0 TeV - General Purpose MC production anchored to apass1 of 2025 data, low-B data, TPC correction maps extraction test with MC, residual extraction w/o distortions, O2-6224			566341-566407	2	10,091,685		RAW OCDB				6y 276d	31d 18:06	1,789 TB	O2PDPSuite:IMC-prod-2025-v13-1
LHC25j11	p-O, 0.02 TeV - Prompt Jpsi and psi(2S) production in p-O collisions at forward rapidity (2025 - pass2 anchoring) [parametric generator], O2-6408			564250-564251	2	3,265,432		RAW OCDB				4y 59d	44d 6:28	340.2 GB	O2PDPSuite:IMC-prod-2025-v13-1
LHC25h5_nodist_vescorr_v2_oldtag	Pb-Pb, 5.36 TeV - General Purpose MC production anchored to apass2 of 2024 data, TPC correction maps extraction test with MC, with no distortions, correction on, old tag, O2-6359			559781-559781	1	3,786,052		RAW OCDB				90y 317d	199d 3:10	15.97 TB	O2PDPSuite:daily-20250905-0000-1
LHC25h5_dist_v2_oldtag	Pb-Pb, 5.36 TeV - General Purpose MC production anchored to apass2 of 2024 data, TPC correction maps extraction test with MC, with distortions, old tag, O2-6359			559781-559781	1	3,845,706		RAW OCDB				102y 220d	204d 19:38	16.16 TB	O2PDPSuite:daily-20250905-0000-1
LHC25j10_2	O-O, 5.36 TeV - HF c,b enriched SC-CR + MB gap 2, OQ65 36 TeV 2025 apass2 anchored production, half 2, O2-6392			564356-564373	3	10,485,772		RAW OCDB				31y 43d	158d 4:41	5,214 TB	O2PDPSuite:daily-20251012-0000-1
LHC25j10_1	O-O, 5.36 TeV - HF c,b enriched SC-CR + MB gap 2, OQ65 36 TeV 2025 apass2 anchored production, half 1, O2-6392			564356-564373	3	10,399,973		RAW OCDB				32y 292d	163d 8:14	5,133 TB	O2PDPSuite:daily-20251012-0000-1
LHC25j9	pp, 13.0 TeV - Non-prompt psi(2S) -> Jpsi pi pi in pp at 13.0 TeV (2022 - pass1 anchoring), O2-6390			526641-526964	2	5,499,328		RAW OCDB				2y 17d	5d 1:03	964 GB	O2PDPSuite:IMC-prod-2025-v14-1
LHC25j8	O-O, 5.36 TeV - Prompt Jpsi and psi(2S) production in O-O collisions at midrapidity (2025 - pass2 anchoring) [parametric generator], O2-6391			564356-564373	3	2,702,580		RAW OCDB				7y 169d	23d 1:45	1,13 TB	O2PDPSuite:IMC-prod-2025-v13-1
LHC25j7	Pb-Pb, 5.36 TeV - Prompt Jpsi and psi(2S) production in Pb-Pb collisions at forward rapidity (2023 - pass4 anchoring) [parametric generator], O2-6383			544123-544123	1	0		RAW OCDB				-	-	0 B	O2PDPSuite:IMC-prod-2025-v14-1
LHC25h5_nodist_vescorr_v2	Pb-Pb, 5.36 TeV - General Purpose MC production anchored to apass2 of 2024 data, TPC correction maps extraction test with MC, with no distortions, correction on, Oct 14, O2-6359			559781-559781	1	7,598,745		RAW OCDB				209y 361d	295d 5:32	30.48 TB	O2PDPSuite:IMC-prod-2025-v13-1
LHC25j6	O-O, 5.36 TeV - Test of General Purpose MC production anchored to apass2 of 2025 O-O data, O2-6207			564356-564373	2	18,654		RAW OCDB				19d 11:06	21d 10:06	99.08 GB	O2PDPSuite:IMC-prod-2025-v9-1
LHC25h5_dist_v2	Pb-Pb, 5.36 TeV - General Purpose MC production anchored to apass2 of 2024 data, TPC correction maps extraction test with MC, with distortions, Oct 14, O2-6359			559781-559781	1	9,500,697		RAW OCDB				265y 276d	1y	38 TB	O2PDPSuite:IMC-prod-2025-v13-1
LHC25j5	Pb-Pb, 5.36 TeV - UD Simulation of forward dimuons anchored to apass5 of Pb-Pb data periods in LHC25, O2-6373			544013-545367	111	64,170,982		RAW OCDB				71y 207d	1y 337d	84.34 GB	O2PDPSuite:asyncc-2023-PbPb-apass5-v5-slc9-alidist-asyncc-2023-PbPb-apass5-v5-1
LHC25b8a_v8	Pb-Pb, 5.36 TeV - High occupancy studies anchored to PbPb 2024 apass2, no distortions, no loopers, MB, maps 000V, v8, O2-6582			559781-559781	1	7,805,988		RAW OCDB				182y 35d	1y 7d	16.86 TB	O2PDPSuite:daily-20250710-0000-1
LHC25j4b	pp, 13.0 TeV - General-purpose MC production test for ITS dE/dxROF anchored to apass1 of pp 2025 data, detaRef1, O2-6390			565804-565804	1	22,067,239		RAW OCDB				9y 23d	31d 22:45	1,606 TB	O2PDPSuite:IMC-prod-2025-v13-1
LHC25j4a	pp, 13.0 TeV - General-purpose MC production test for ITS dE/dxROF anchored to apass1 of pp 2025 data, detaRef0, O2-6390			565804-565804	1	22,019,249		RAW OCDB				8y 353d	27d 23:40	1,602 TB	O2PDPSuite:IMC-prod-2025-v13-1
LHC25j4c	Ne-Ne, 5.36 TeV - General Purpose MC production anchored to apass2 of			564356-564373	3	10,485,772		RAW OCDB				48y 145d	717d 14:06	8,008 TB	O2PDPSuite:IMC-prod-2025-v13-1

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MonALISA Repository for ALICE



My jobs

My home dir

LEGO Trains

Hyperloop

Administration Section

Alert XML Feed

JAREn docs

MonaLisa GUI

PRODUCTION CYCLES

Job Details » No filter

STARlight_dimuon

Runs

Remaining time

»

Production

Description

Status

Range

Count

Event Count

Requested

@10000 cores

Comment

Known issues

Running time

Saving time

Output size

Software packages

LHC25k5

O-O, 5.36 TeV - UD, UPC forward rapidity STARlight production anchored to O-O 2025 pass2, O2-6416

Running

564356-564445

9

6,858,600

RAW OCB

5y 62d 14d 20:23

200.3 GB

O2PDPsuite::MC-prod-2025-v14-1

LHC25j5

Pb-Pb, 5.36 TeV - UD Simulation of forward dimuons anchored to apass5 of Pb-Pb data periods in LHC23, O2-8373

Running

544013-545367

111

64,170,982

RAW OCB

71y 207d 1y 337d

84.34 GB

O2PDPsuite::async-async-2023-PbPb-apass5-v5-slc9-alidist-async-2023-PbPb-apass5-v5-1

LHC25j3

p-O, 9.82 TeV - UD, UPC midrapidity STARlight production anchored to p-O 2025 pass2, O2-8251

Running

564250-564251

2

6,602,246

RAW OCB

7y 10d 51d 21:49

4.989 TB

O2PDPsuite::MC-prod-2025-v13-1

LHC25j2

O-O, 5.36 TeV - UD, UPC midrapidity STARlight production anchored to O-O 2025 pass2, O2-8237

Running

564356-564373

3

11,751,825

RAW OCB

14y 100d 81d 11:42

4.455 TB

O2PDPsuite::MC-prod-2025-v13-1

LHC25g15

Pb-Pb, 5.36 TeV - UD, UPC midrapidity STARlight production anchored to Pb-Pb 2023 pass5, O2-0065

Running

544013-545312

92

297,429,652

RAW OCB

1047y 232d 16y 167d

185.8 TB

O2PDPsuite::async-async-2023-PbPb-apass5-v5-slc9-alidist-async-2023-PbPb-apass5-v5-1

LHC25f7

Pb-Pb, 5.36 TeV - UD Simulation of forward dimuons anchored to apass5 of Pb-Pb data periods in LHC23, O2-5967

Completed

544013-545367

111

53,441,490

RAW OCB

60y 343d 158d 18:50

42.33 GB

O2PDPsuite::daily-20250512-0000-1

LHC25d1

Pb-Pb, 5.36 TeV - UD, UPC midrapidity DPMJET+STARlight production anchored to Pb-Pb 2023 pass4, O2-5900

Completed

544013-544492

3

39,478,670

RAW OCB

149y 25d 1y 160d

20.64 TB

O2PDPsuite::async-async-v1-01-26-slc9-alidist-async-v1-01-05-1

LHC24k4_kDpmjetSingleC_Embed

Pb-Pb, 5.36 TeV - UD, UPC midrapidity STARlight production anchored to Pb-Pb 2023 pass4 - kDpmjetSingleC_Embed, O2-5560

1

Completed

544013-545367

113

5,234,574

RAW OCB

30y 228d 99d 13:39

5.6 TB

O2PDPsuite::async-async-v1-01-26-slc9-alidist-async-v1-01-05-1

LHC24k4_kDpmjetSingleA_Embed

Pb-Pb, 5.36 TeV - UD, UPC midrapidity STARlight production anchored to Pb-Pb 2023 pass4 - kDpmjetSingleA_Embed, O2-5560

1

Completed

544013-545367

113

5,109,126

RAW OCB

30y 87d 97d 3:59

5.514 TB

O2PDPsuite::async-async-v1-01-26-slc9-alidist-async-v1-01-05-1

LHC24k4_fix

Pb-Pb, 5.36 TeV - UD, UPC midrapidity STARlight production anchored to Pb-Pb 2023 pass4 fix, O2-5560

1

Completed

544013-545367

113

268,764,274

RAW OCB

36d 19:24 22d 12:44

23.82 TB

O2PDPsuite::daily-20250302-0000-1

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My jobs My home dir LEGO Trains Hyperloop Administration Section Alert XML Feed JAIEn docs MonALISA GUI

Usage info

Login

Jobs details - extracted from JDL

Job parameters		Application software		Details				Timings		Output		
Run#	PID	Owner	Events	Packages	Date	Staged	Output dir	Type of job	Remarks Options	Running	Saving	size
564356-5644												
		allprod			-All-	-All-		O-O, 5.36 TeV - UD, UPC f	edit Filter			
564445	3454692736	allprod	8090	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564445	O-O, 5.36 TeV - UD, UPC forward...		1d 13:49	9m 52s	227 MB
564445	3454692735	allprod	16018	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564445	O-O, 5.36 TeV - UD, UPC forward...		3d 5:20	19m 44s	449.9 MB
564445	3454692734	allprod		O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564445	O-O, 5.36 TeV - UD, UPC forward...				0 B
564445	3454692733	allprod	53086	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564445	O-O, 5.36 TeV - UD, UPC forward...		9d 19:21	2:01	1.744 GB
564445	3454692652	allprod	5367	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564445	O-O, 5.36 TeV - UD, UPC forward...		1d 0:39	6m 16s	150.7 MB
564445	3454692651	allprod		O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564445	O-O, 5.36 TeV - UD, UPC forward...		1d 14:20	11m 36s	227.3 MB
564445	3454691517	allprod	15789	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:42		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564445	O-O, 5.36 TeV - UD, UPC forward...		2d 18:48	14m 48s	441.3 MB
564445	3455292157	allprod		O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 18:54		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564445	O-O, 5.36 TeV - UD, UPC forward...		11d 22:55	5:02	1.666 GB
564445	3455292156	allprod		O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 18:54		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564445	O-O, 5.36 TeV - UD, UPC forward...		13d 18:40	1:46	1.637 GB
564445	3455292075	allprod	108903	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 18:54		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564445	O-O, 5.36 TeV - UD, UPC forward...		26d 4:46	6:16	3.009 GB
564445	3455292032	allprod	101052	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 18:54		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564445	O-O, 5.36 TeV - UD, UPC forward...		22d 17:53	3:08	3.291 GB
564445	3455291994	allprod		O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 18:54		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564445	O-O, 5.36 TeV - UD, UPC forward...		21d 19:16	6:34	2.796 GB
564445	3455291992	allprod	140865	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 18:54		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564445	O-O, 5.36 TeV - UD, UPC forward...		32d 13:25	3:44	3.91 GB
564445	3455291938	allprod	141224	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 18:54		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564445	O-O, 5.36 TeV - UD, UPC forward...		34d 15:10	3:44	3.852 GB
564445	3455291937	allprod	138106	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 18:54		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564445	O-O, 5.36 TeV - UD, UPC forward...		34d 15:14	3:40	3.35 GB
564430	3454692650	allprod	5312	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564430	O-O, 5.36 TeV - UD, UPC forward...		1d 4:15	8m 40s	151.5 MB
564430	3454692649	allprod	23832	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564430	O-O, 5.36 TeV - UD, UPC forward...		4d 20:05	1:10	668.2 MB
564430	3454692648	allprod	5246	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564430	O-O, 5.36 TeV - UD, UPC forward...		1d 4:17	7m 12s	147.1 MB
564430	3454692577	allprod	79431	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564430	O-O, 5.36 TeV - UD, UPC forward...		18d 18:21	2:37	2.636 GB
564430	3454692566	allprod	5319	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564430	O-O, 5.36 TeV - UD, UPC forward...		23:43	5m 36s	148.2 MB
564430	3454692429	allprod	7788	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564430	O-O, 5.36 TeV - UD, UPC forward...		1d 9:08	15m 52s	220.1 MB
564430	3454691458	allprod	18696	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:42		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564430	O-O, 5.36 TeV - UD, UPC forward...		3d 5:36	29m 52s	426.6 MB
564430	3455154513	allprod	89499	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 14:31		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564430	O-O, 5.36 TeV - UD, UPC forward...		18d 6:39	3:24	2.197 GB
564430	3455154512	allprod	105319	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 14:31		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564430	O-O, 5.36 TeV - UD, UPC forward...		22d 11:08	4:31	2.703 GB
564430	3455154511	allprod	142084	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 14:31		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564430	O-O, 5.36 TeV - UD, UPC forward...		37d 10:49	5:35	3.602 GB
564430	3455154510	allprod	127001	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 14:31		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564430	O-O, 5.36 TeV - UD, UPC forward...		28d 22:18	4:46	3.501 GB
564430	3455154509	allprod	160683	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 14:31		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564430	O-O, 5.36 TeV - UD, UPC forward...		39d 18:29	5:09	4.115 GB
564430	3455154507	allprod	206140	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 14:31		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564430	O-O, 5.36 TeV - UD, UPC forward...		46d 22:03	6:07	5.218 GB
564430	3455154506	allprod	205437	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 14:31		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564430	O-O, 5.36 TeV - UD, UPC forward...		46d 21:48	5:39	5.12 GB
564430	3455154505	allprod		O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 14:31		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564430	O-O, 5.36 TeV - UD, UPC forward...		47d 16:21	5:42	4.573 GB
564414	3454692424	allprod	2585	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564414	O-O, 5.36 TeV - UD, UPC forward...		13:13	3m 36s	72.8 MB
564414	3454692423	allprod	8008	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564414	O-O, 5.36 TeV - UD, UPC forward...		1d 21:43	53m 20s	231.8 MB
564414	3454692422	allprod	10722	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564414	O-O, 5.36 TeV - UD, UPC forward...		2d 13:42	56m 32s	300.4 MB
564414	3454692371	allprod	55633	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564414	O-O, 5.36 TeV - UD, UPC forward...		13d 1:32	3:12	1.84 GB
564414	3454692370	allprod	7832	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564414	O-O, 5.36 TeV - UD, UPC forward...		1d 13:49	9m 36s	222.1 MB
564414	3454692369	allprod	2629	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:45		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/1/564414	O-O, 5.36 TeV - UD, UPC forward...		10:54	2m 28s	72.78 MB
564414	3454691457	allprod	16148	O2PDPSuite:IMC-prod-2025-v14-1	10.11.2025 16:42		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564414	O-O, 5.36 TeV - UD, UPC forward...		3d 10:37	55m 28s	451.5 MB
564414	3454332684	allprod	70871	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 11:12		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564414	O-O, 5.36 TeV - UD, UPC forward...		15d 2:20	2:08	1.942 GB
564414	3454332683	allprod	63774	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 11:12		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564414	O-O, 5.36 TeV - UD, UPC forward...		14d 14:21	2:19	1.699 GB
564414	3454332682	allprod	111112	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 11:12		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564414	O-O, 5.36 TeV - UD, UPC forward...		28d 5:04	3:51	3.056 GB
564414	3454332567	allprod	135828	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 11:12		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564414	O-O, 5.36 TeV - UD, UPC forward...		30d 16:58	4:13	4.33 GB
564414	3454332566	allprod	100858	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 11:12		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564414	O-O, 5.36 TeV - UD, UPC forward...		25d 1:21	6:42	2.704 GB
564414	3454332565	allprod	105348	O2PDPSuite:IMC-prod-2025-v14-1	08.11.2025 11:12		/alice/sim/2025/LHC25k5/klnchPsi2sToMu/0/564414	O-O, 5.36 TeV - UD, UPC forward...		21d 7:36	6:16	4.082 GB



MonALISA Repository for ALICE



>>

My jobs

My home dir

LEGO Trains

Hyperloop

Administration Section

Alert XML Feed

JAI/En docs

MonALISA GUI

- alice
 - bin
 - cern.ch
 - data
 - ddl
 - macros
 - packages
 - production
 - QA
 - reference
 - sc2003
 - sim
 - 2008
 - 2007
 - 2011
 - 2012
 - 2013
 - 2014
 - 2015
 - 2016
 - 2017
 - 2018
 - 2019
 - 2020
 - 2021
 - 2022
 - 2023
 - 2024
 - 2025
 - EP25e1
 - EP25f1
 - EP25f1_GeneratorHF_D2H_bbbar_Mode2_XICplu
 - EP25f1_GeneratorHF_D2H_bbbar_Mode2_XIC_Nc
 - EP25f1_GeneratorHF_D2H_sobar_Mode2_XICplu
 - EP25f1_GeneratorHF_D2H_sobar_Mode2_XIC_Nc
 - EP25f2_GeneratorHF_D2H_bbbar_Mode2_Omega
 - EP25f2_GeneratorHF_D2H_bbbar_Mode2_XICplu
 - EP25f2_GeneratorHF_D2H_bbbar_Mode2_XIC_Nc
 - EP25f2_GeneratorHF_D2H_sobar_Mode2_Omega
 - EP25f2_GeneratorHF_D2H_sobar_Mode2_XICplu
 - EP25f2_GeneratorHF_D2H_sobar_Mode2_XIC_Nc
 - EP25p1_GeneratorLF_Coalescence
 - LHC22k4_rightly
 - LHC22k5_rightly
 - LHC22k4h
 - LHC22k1
 - LHC22k5?

/alice/sim/2025/LHC22k5/CohJpsiToMu/0594445/027

Welcome mbroz (-) with role aliproduct (-)

Permissions	Owner	Timestamp	Size	Filename
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	124 B	0_0_0_2561.stat
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	2 B	0_0_1_0.stat
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	1.85 MB	AQ2D.root
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	1.845 MB	AQ2D_pire.root
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	6.438 KB	async_pass_log.log
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	4.267 MB	clusters_archive.tgz
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	48.54 KB	config-json.json
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29		debug_log_archive.tgz
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29		digits_archive.tgz
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	1.062 KB	dph-config.json
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	21.4 KB	final_config.json
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	437.3 KB	log_archive.zip
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	109.1 KB	e2_timeseries_tpc.root
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	1.736 MB	pipeline_action_1326.log
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	813.1 KB	pipeline_metric_1326.log
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	44.87 KB	QC_production.json
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	8.404 KB	stderr
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	682.9 KB	stdout
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	552 KB	timestampsampling_564445.log
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	455 B	time_series_tracks.root
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	109.8 KB	tpc_timeseries_archive.zip
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	4.003 MB	tracks_archive.tgz
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	48.54 KB	user_config.json
-rw-rw-rw-	aliproduct:aliproduct	10 Nov 2025 17:29	1.481 MB	workFlow.json

Edit new file

77.56 MB in 24 files

Upload files in this folder (500MB max, multiple selection possible)

Choose Files

No file chosen

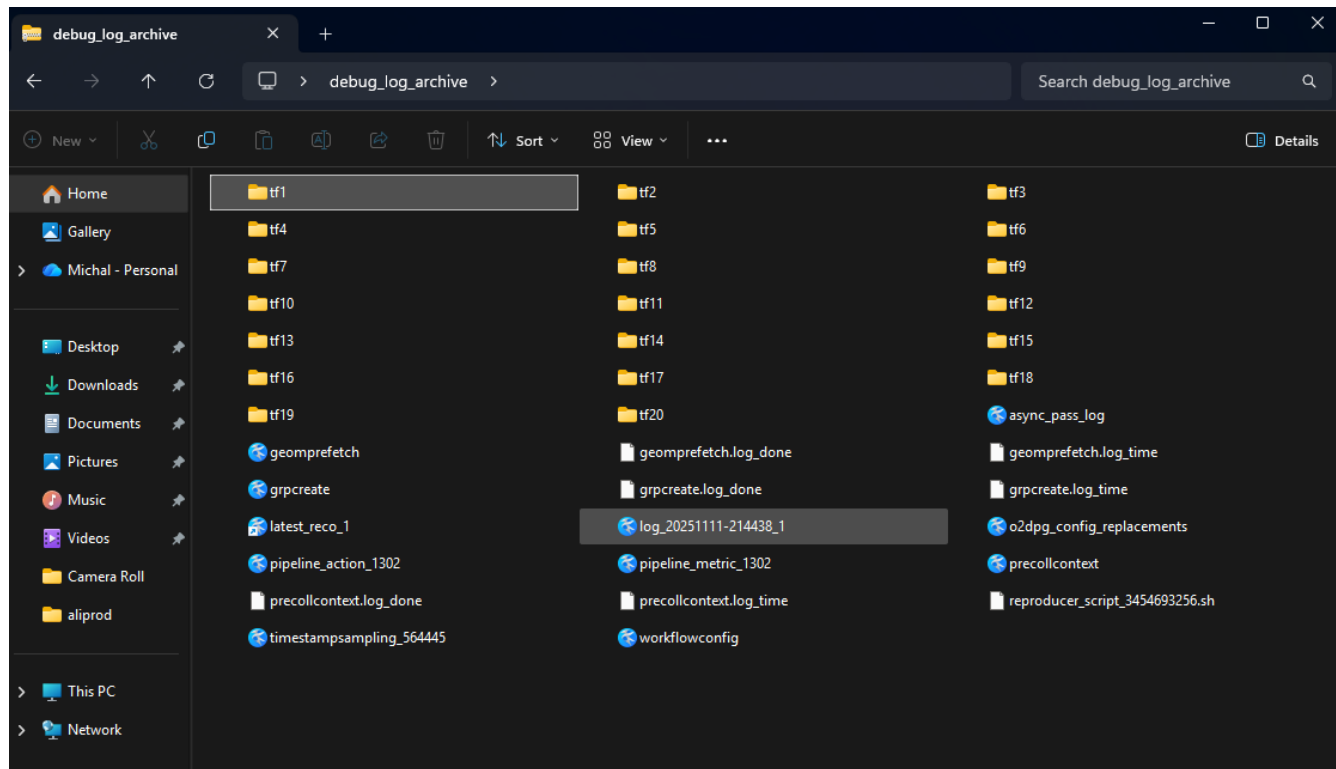
Upload...

Create subfolder

Create new folder

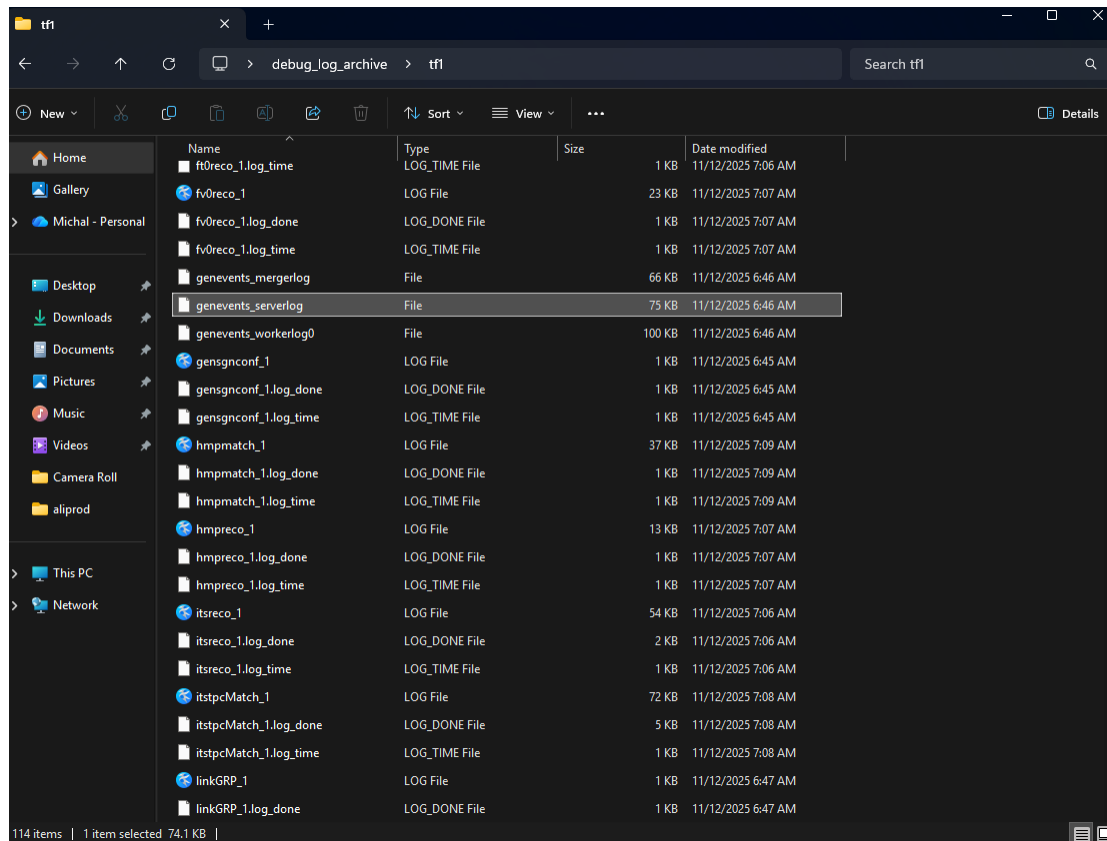
debug_log_archive.tgz

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debug_log_archive.tgz

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genevents_serverlog: STARlight

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```
[21:45:54][INFO] ** Generator to use: 'external'
[21:45:54][INFO] Setting up external generator with following parameters
[21:45:54][INFO] GeneratorExternal.fileName : ${O2DPG_MC_CONFIG_ROOT}/MC/config/PWGUD/external/generator/GeneratorStarlight.C [ RT ]
GeneratorExternal.funcName : GeneratorStarlight("kCohJpsiToMu", 5360.000000, 8, 16, 8, 16, "", "") [ RT ]
GeneratorExternal.markAllAsPrimary : true [ CODE ]

[21:45:58][INFO] Setting up external trigger with following parameters
[21:45:58][INFO] TriggerExternal.fileName : ${O2DPG_MC_CONFIG_ROOT}/MC/config/PWGUD/trigger/selectParticlesInAcceptance.C [ RT ]
TriggerExternal.funcName : selectMotherPartInAcc(-4.0,-2.5) [ RT ]

[21:45:58][INFO] Initialising primary generator
Rapidity beam 1: 8.65043, rapidity beam 2: -8.65043, rapidity CMS system: 0, beam gamma in CMS: 2856.3
In inputParameters setting J/psi mass!
>>> bool inputParameters::init() [/local/workspace/DailyBuilds/Daily02Physics-slc9/daily-tags.M3tUFd6X0g/SOURCES/STARlight/20241115/b845eb773cd5be1ed2286e236e575519d08fed4d/src/InputParameters.cpp:840]:
Warning: Note: Outgoing beam information is only available for 0\n breakup mode
>>> bool inputParameters::init() [/local/workspace/DailyBuilds/Daily02Physics-slc9/daily-tags.M3tUFd6X0g/SOURCES/STARlight/20241115/b845eb773cd5be1ed2286e236e575519d08fed4d/src/InputParameters.cpp:849]:
Warning: HEPMC3 output cannot be used for this type of ultraperipheral collision because outgoing beam info is not available>>> inputParameters::init(): Info: using the following starlight parameters:
  base file name ..... 'slight'
  HEPMC3 Format Turned on ..... no
  beam 1 atomic mass ..... 8
  beam 1 atomic mass number ..... 16
  beam 2 atomic mass ..... 8
  beam 2 atomic mass number ..... 16
  Lorentz gamma of beams in CM frame ..... 2856.3
  mass W of produced hadronic system ..... 3.09645 < W < 3.09738 GeV/c^2
  # of W bins ..... 20
  maximum absolute value for rapidity ..... 4.1
  # of rapidity bins ..... 820
  cut in pT..... no
  cut in eta..... no
  production mode ..... 2
  number of events to generate ..... 0
  PDG ID of produced particle ..... 443013
  seed for random generator ..... 635036471
  breakup mode for beam particles ..... 5
  interference enabled ..... no
  coherent scattering off nucleus ..... yes
  Quantum Glauber parameter..... 0
  Impulse VM parameter..... 0

#####
  Initialising Starlight version: trunk...
#####

>>> beamBeamSystem::generateBreakupProbabilities(): Info: Requiring no hadronic interactions.
>>> starlight::luminosityTableIsValid(): Info: using random seed = 635036471
>>> starlight::init(): Info: creating luminosity table for coherent photon-Pomeron channel
Creating Luminosity Tables.
Calculating photon flux from Emin = 1.000000e-05 GeV to Emax = 1.296683e+03 GeV (CM frame) for source with Z = 8
Luminosity Tables created.
Reading in luminosity tables. Gammaanarrowvm()
Creating and calculating crossection. Gammaanarrowvm()
Using Narrow Resonance ...
gamma+nucleon threshold: 1.436797e-03 GeV

Total cross section: 19.170 microb.
```


genevents_serverlog: DPMJET

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```
+-----+
| DPMJET-III version 19.3.7
|
| (Last change: 18 Mar 2023)
|
| Authors:
|   Stefan Roesler   (CERN)
|   Anatoli Fedynitch (ASIoP)
|   Ralph Engel     (KIT)
|   Johannes Ranft   (Siegen Univ.)
|
| https://github.com/afedynitch/dpmjet
|-----+
| Contact: @github
+-----+

*****
* Example for a DTUNUC input file.
* Uncomment the input-cards according to your requirements.
*
* Format: A10,6E10.0,A8
* (except for the section enclosed by "PHOINPUT" and "ENDINPUT"
* which is format-free)
* lines starting with "*" are comment lines
*****
*
* projectile / target / Energy
* -----
*      1      2      3      4      5      6      7
*234567890123456789012345678901234567890123456789012345678
PROJPAR  0.00  0.00  0.00  0.00  0.00  0.00  0.00  PHOTON
TARPAR   16.0   8.00  0.00  0.00  0.00  0.00
ENERGY   0.100E+04 0.600E+06 0.00  0.00  0.00  0.00
*ENERGY   100.0
* Initialize the random number generator
RNDMINIT 40.0   116.   101.   9.00  0.00  0.00
*
*
* PHOJET-specific input
* -----
* The following lines control the event-generation with PHOJET for
* individual photon/nucleon-nucleon collisions.
* For details see the PHOJET-manual available at
* http://lepton.bartol.udel.edu/~eng/phojet.html
* Any options explained in the PHOJET-manual can be used in between
* the "PHOINPUT" and "ENDINPUT" cards.
PHOINPUT  0.00  0.00  0.00  0.00  0.00  0.00
```

genevents_serverlog: EvtGen

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```
EvtGen:In readDecayFile, reading:/cvmfs/alice.cern.ch/e19-x86_64/Packages/02DPG/daily-20251010-0000-2/MC/config/PWGUD/external/generator/DecayTablesEvtGen/OPENCHARM.DEC
EvtGen:Redefined decay of D*+
EvtGen:Redefined decay of D*-
EvtGen:Redefined decay of D+
EvtGen:Redefined decay of D-
EvtGen:Redefined decay of D0
EvtGen:Redefined decay of anti-D0
EvtGen:Redefined decay of Lambda_c+
EvtGen:Redefined decay of anti-Lambda_c-
EvtGen:Redefined decay of D_s+
EvtGen:Redefined decay of D_s-
EvtGen:Redefined decay of phi
```

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ATLAS ProdSys commented on ATLPTASKS-1646252 - Request 64488

Request = 64488, Chain = 20139 (9514075), input = mc23_13p6TeV.mc23_13p6TeV.568518.MGPY8EG_MavTopDarkPhoton lep_ee_2500_5.deriv.DAOD_PHYS.e8590_e8586_s4159_s4114_r15530_r15514_p6697_tid45835793_00, exception occurred: Exception: Number of events to

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Request = 64488, Chain = 19618 (9513409), input = mc23_13p6TeV.mc23_13p6TeV.568518.MGPY8EG_MavTopDarkPhoton lep_ee_2500_5.deriv.DAOD_PHYS.LITE.e8590_e8586_s4159_s4114_r15530_r15514_p6697_tid45835793_00, exception occurred: Exception: Number of events to

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Request = 64488, Chain = 15152 (9437662), input = mc23_13p6TeV.561676.MGPY8EG_A14NNPDF23LO_ggH_MH600_MS275_CTAU300.deriv.DAOD_PHYS.LITE.e8577_e8586_s4159_s4114_r15530_r15514_p6697_tid46350548_00, exception occurred: Exception: Number of events to be

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Request = 64488, Chain = 15120 (9437623), input = mc23_13p6TeV.561676.MGPY8EG_A14NNPDF23LO_ggH_MH600_MS275_CTAU300.deriv.DAOD_PHYS.e8577_e8586_s4159_s4114_r15530_r15514_p6697_tid46350548_00, exception occurred: Exception: Number of events to be

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ATLAS ProdSys commented on ATLPTASKS-1646252 - Request 64488

Request = 64488, Chain = 414 (9282467), input = mc20_13TeV.mc20_13TeV.603291.PHPY8EG_A14NNPDF23_bb4l_d_md_wgts.deriv.DAOD_PHYS.LITE.e8590_e8455_s3889_r13144_r13146_p6697_tid45317717_00, exception occurred: Exception: Number of events to be processed

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☒	O2-6433	Prompt charmonia to e+e- in pp at 5.36 TeV (2024 - ppRef anchoring)	☒
☒	O2-6430	Prompt charmonia to e+e- in PbPb at 5.36 TeV (2023 - pass5 anchoring)	☒
☒	O2-6418	LF MC with injected nuclei and hypernuclei anchored to OO 2025 apass2 (LHC25ae)	☒
☒	O2-6416	UD, UPC forward rapidity STARlight production anchored to O-O 2025 pass2	☒
☒	O2-6408	Prompt J/ψ + ψ(2S) production in p-O collisions at forward rapidity (2025 - pass2 anchoring) [parametric generator]	☒
☒	O2-6392	HF c.b enriched SC-CR + MB gap 2. OO@5.36 TeV 2025 apass2 anchored production	☒
☒	O2-6391	Prompt J/ψ + ψ(2S) production in O-O collisions at midrapidity (2025 - pass2 anchoring) [parametric generator]	☒
☒	O2-6390	Non-prompt ψ(2S) → J/ψm in pp at 13.6 TeV (2022 - pass7 anchoring)	☒
☒	O2-6389	Prompt and non-prompt ψ(2S) → J/ψm in pp at 13.6 TeV (2024 - pass1 anchoring)	☒

1-10 of 54

123456

https://its.cern.ch/jira

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LHC25g15

Pb-Pb, 5.36 TeV - UD, UPC midrapidity STARlight production anchored to PbPb 2023 pass5, O2-6065

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Request = 64488, Chain = 414 (9282467), input = mc20_13TeV.mc20_13TeV.803291.Phy8EO_A14NNPDF23LO_b4d4l_md_vgts.deriv.DAOD_PHYS.LITE.e8590_e8455_s3889_r13144_r13146_p6697_id4531717_00, exception occurred: Exception: Number of events to be processed

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UD, UPC midrapidity STARlight producti...

O2-6065

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