

PD-VD MC

- request id RITM1998918 , description in the [wiki](#)
- 3 small samples, 10K events each, to validate sim/reconstruction chain
- 1st sample to be produced: cosmics events
- Workdir: */exp/dune/app/home/dunepro/pdvd_spring2024*
- Production shifter notes: [google doc](#)
- Submitted workflows: 1753,1756,1761,1762 total of 170 jobs
 - 10 events/job
 - 4 output files/job: g4 stage 1 (~2.2 GB), g4 stage 2 (~4GB), detsim (~2 GB), reco (~2GB)

expected output volume for 10k events

reconstruction	2 TB
detsim	2 TB
geant4-step2	4.2 TB
geant4-step1	2.2 TB

Submitted workflows: 1753,1756,1761,1762 total of 170 jobs

170*4=680 output files expected, 681 found

one duplicate file (workflow 1761, g4 step1)

1. prod_cosmics_protodunevd_20240330T195949Z_000027_gen_g4_stage1.root
2. prod_cosmics_protodunevd_20240331T015914Z_000027_gen_g4_stage1.root

file 1 has children, and its status is “uploaded”

file 2 has no children, and is in “confirmed” status,

[here](#)

Metadata are created for each of the 4 steps ([here](#))

Outputting started	2024 07 01 12:17:31
Output files	usertests:prod_cosmics_protodunevd_20240401T095613Z_000100_gen_g4_stage1.root usertests:prod_cosmics_protodunevd_20240401T095613Z_000100_gen_g4_stage1_g4_stage2.root usertests:prod_cosmics_protodunevd_20240401T095613Z_000100_gen_g4_stage1_g4_stage2_detsim.root usertests:prod_cosmics_protodunevd_20240401T095613Z_000100_gen_g4_stage1_g4_stage2_detsim_reco.root

Metadata validation needed →

g4 stage1

File has completed and has the status of

=====checking g4stage1 MD

```
{
  "metadata": {
    "DUNE.requestid": "ritm1998918",
    "art.file_format_era": "ART_2011a",
    "art.file_format_version": 15,
    "art.first_event": 1,
    "art.last_event": 10,
    "art.process_name": "G4Stage1",
    "core.application": "art.g4-stage1",
    "core.application.family": "art",
    "core.application.name": "g4-stage1",
    "core.application.version": "v09_82_02d01",
    "core.data_tier": "simulated",
    "core.end_time": 1711965754,
    "core.event_count": 10,
    "core.file_format": "artroot",
    "core.file_type": "mc",
    "core.first_event_number": 1,
    "core.last_event_number": 10,
    "core.run_type": "vd-protodune",
    "core.runs": [
      1
    ],
    "core.runs_subruns": [
      100000
    ],
    "core.start_time": 1711965470,
    "dune.campaign": "pdvd_mc_2024a",
    "dune.config_file": "protodunevd_refactored_g4_stage1.fcl",
    "dune_mc.detector_type": "vd-protodune",
    "dune_mc.electron_lifetime": "35ms",
    "dune_mc.gen_fcl_filename": "gen_protodunevd_cosmics.fcl",
    "dune_mc.generators": "corsika ",
    "dune_mc.geometry_version": "protodunevd_v4_refactored.gdml",
    "dune_mc.liquid_flow": "no",
    "dune_mc.space_charge": "no",
    "dune_mc.with_cosmics": "1"
  },
  "namespace": "usertests"
}
```

g4 stage2

===== checking g4stage2 MD

```
{
  "metadata": {
    "DUNE.requestid": "ritm1998918",
    "art.file_format_era": "ART_2011a",
    "art.file_format_version": 15,
    "art.first_event": 1,
    "art.last_event": 10,
    "art.process_name": "G4Stage2",
    "core.application": "art.g4-stage2",
    "core.application.family": "art",
    "core.application.name": "g4-stage2",
    "core.application.version": "v09_82_02d01",
    "core.data_tier": "simulated",
    "core.end_time": 1711967273,
    "core.event_count": 10,
    "core.file_format": "artroot",
    "core.file_type": "mc",
    "core.first_event_number": 1,
    "core.last_event_number": 10,
    "core.run_type": "vd-protodune",
    "core.runs": [
      1
    ],
    "core.runs_subruns": [
      100000
    ],
    "core.start_time": 1711966060,
    "dune.campaign": "pdvd_mc_2024a",
    "dune.config_file": "protodunevd_refactored_g4_stage2_pureAr.fcl",
    "dune_mc.detector_type": "vd-protodune",
    "dune_mc.electron_lifetime": "35ms",
    "dune_mc.gen_fcl_filename": "gen_protodunevd_cosmics.fcl",
    "dune_mc.generators": "corsika ",
    "dune_mc.geometry_version": "protodunevd_v4_refactored.gdml",
    "dune_mc.liquid_flow": "no",
    "dune_mc.space_charge": "no",
    "dune_mc.with_cosmics": "1"
  },
  "namespace": "usertests",
  "parents": [
    {
      "name": "prod_cosmics_protodunevd_20240401T095613Z_000100_gen_g4_stage1.root",
      "namespace": "usertests"
    }
  ]
}
```

detsim

```
----- CHECKING DETSIM MD
{
  "metadata": {
    "DUNE.requestid": "ritm1998918",
    "art.file_format_era": "ART_2011a",
    "art.file_format_version": 15,
    "art.first_event": 1,
    "art.last_event": 10,
    "art.process_name": "Detsim",
    "art.run_type": "physics",
    "core.application": "art.detsim",
    "core.application.family": "art",
    "core.application.name": "detsim",
    "core.application.version": "v09_82_02d01",
    "core.data_stream": "out1",
    "core.data_tier": "detector-simulated",
    "core.end_time": 1711972683,
    "core.event_count": 10,
    "core.file_format": "artroot",
    "core.file_type": "mc",
    "core.first_event_number": 1,
    "core.last_event_number": 10,
    "core.run_type": "vd-protodune",
    "core.runs": [
      1
    ],
    "core.runs_subruns": [
      100000
    ],
    "core.start_time": 1711967892,
    "dune.campaign": "pdvd_mc_2024a",
    "dune.config_file": "protodunevd_refactored_detsim_pureAr.fcl",
    "dune_mc.detector_type": "vd-protodune",
    "dune_mc.electron_lifetime": "35ms",
    "dune_mc.gen_fcl_filename": "gen_protodunevd_cosmics.fcl",
    "dune_mc.generators": "corsika ",
    "dune_mc.geometry_version": "protodunevd_v4_refactored.gdml",
    "dune_mc.liquid_flow": "no",
    "dune_mc.space_charge": "no",
    "dune_mc.with_cosmics": "1"
  ],
  "namespace": "usertests",
  "parents": [
    {
      "name": "prod_cosmics_protodunevd_20240401T095613Z_000100_gen_g4_stage1_g4_stage2.root",
      "namespace": "usertests"
    }
  ]
}
}
```

reco

```
----- RECO
"metadata": {
  "art.file_format_era": "ART_2011a",
  "art.file_format_version": 15,
  "art.first_event": 1,
  "art.last_event": 10,
  "art.process_name": "Reco",
  "art.run_type": "physics",
  "core.application": "art.reco",
  "core.application.family": "art",
  "core.application.name": "reco",
  "core.application.version": "v09_82_02d01",
  "core.data_stream": "out1",
  "core.data_tier": "full-reconstructed",
  "core.end_time": 1711973684.0,
  "core.event_count": 10,
  "core.file_format": "artroot",
  "core.file_type": "mc",
  "core.first_event_number": 1,
  "core.last_event_number": 10,
  "core.run_type": "vd-protodune",
  "core.runs": [
    1
  ],
  "core.runs_subruns": [
    100000
  ],
  "core.start_time": 1711972813.0,
  "dune.campaign": "pdvd_mc_2024a",
  "dune.config_file": "protodunevd_reco.fcl",
  "dune.output_status": "recorded",
  "dune.requestid": "ritm1998918",
  "dune.workflow": {
    "cpuinfo": "Intel(R) Xeon(R) Gold 6248 CPU @ 2.50GHz",
    "hostname": "comp08-12",
    "job_id": "187515.93@justin-prod-sched01.dune.hep.ac.uk",
    "jobscript_cpu_seconds": 8195,
    "jobscript_finish": 1711973691,
    "jobscript_real_seconds": 8321,
    "jobscript_start": 1711965369,
    "os_release": "Scientific Linux release 7.9 (Nitrogen)",
    "site_name": "UK_Lancaster",
    "stage_id": 1,
    "user": "epennacc@fnal.gov",
    "workflow_id": 1762
  },
  "dune_mc.detector_type": "vd-protodune",
  "dune_mc.electron_lifetime": "35ms",
  "dune_mc.gen_fcl_filename": "gen_protodunevd_cosmics.fcl",
  "dune_mc.generators": "corsika ",
  "dune_mc.geometry_version": "protodunevd_v4_refactored.gdml",
  "dune_mc.liquid_flow": "no",
  "dune_mc.space_charge": "no",
  "dune_mc.with_cosmics": "1"
},
-----
```