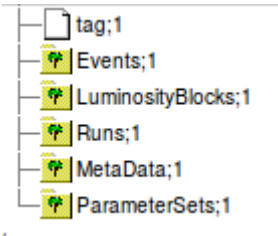# standard NanoAOD contents

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20 May 2020, NanoAOD+Meeting

An example

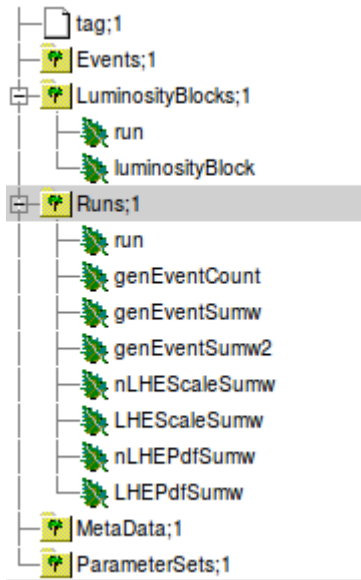- One example file is looked at

- RunIISummer19UL17NanoAOD

- `/eos/cms/store/mc/RunIISummer19UL17NanoAOD/`
  `WZ_TuneCP5_13TeV-pythia8/NANOAODSIM/`
  `106X_mc2017_realistic_v6-v2/70000/98B6A365-39C1-414B-9B64-`
  `8E4D08974138.root`

Trees in the files

```
├─ 📄 tag;1
├─ 🌱 Events;1
├─ 🌱 LuminosityBlocks;1
├─ 🌱 Runs;1
├─ 🌱 MetaData;1
└─ 🌱 ParameterSets;1
```
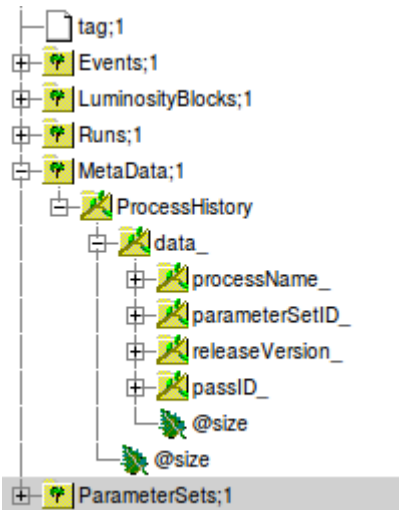
- Events

- LuminosityBlocks

- Runs

- MetaData

- ParameterSets

- All of these trees are created here
  - PhysicsTools/NanoAOD/plugins/NanoAODOutputModule.cc
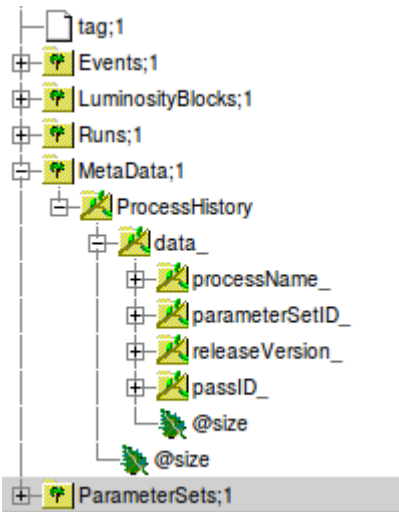
Contents of run and lumi trees

```
tag;1
Events;1
LuminosityBlocks;1
    run
    luminosityBlock
Runs;1
    run
    genEventCount
    genEventSumw
    genEventSumw2
    nLHEScaleSumw
    LHEScaleSumw
    nLHEPdfSumw
    LHEPdfSumw
MetaData;1
ParameterSets;1
```

- LuminosityBlocks

  – Run

  – luminosityBlock

- Runs

  – Run

  – Information about total number of events and sum of weights for MC events

    • Helpful specially after skimming

Contents of MetaData tree

- vector<edm::ProcessHistory>
  - Size=1
- Contains:
  - ProcessName = GEN
  - ReleaseVersion = CMSSW_10_6_4
- There are tools in cmssw to produce the contents
  - DataFormats/Provenance/interface/ProcessHistoryRegistry.h

Contents of ParameterSets tree

- pair<edm::Hash<1>,edm::ParameterSet Blob>
  - Size=10576
- Contains:
  - All the values of the input ParameterSet
- There are tools in cmssw to produce the contents
  - `IOPool/Provenance/interface/CommonProvenanceFiller.h`