

Application of nanoAODtools in nanoAODplus

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nanoAODtools

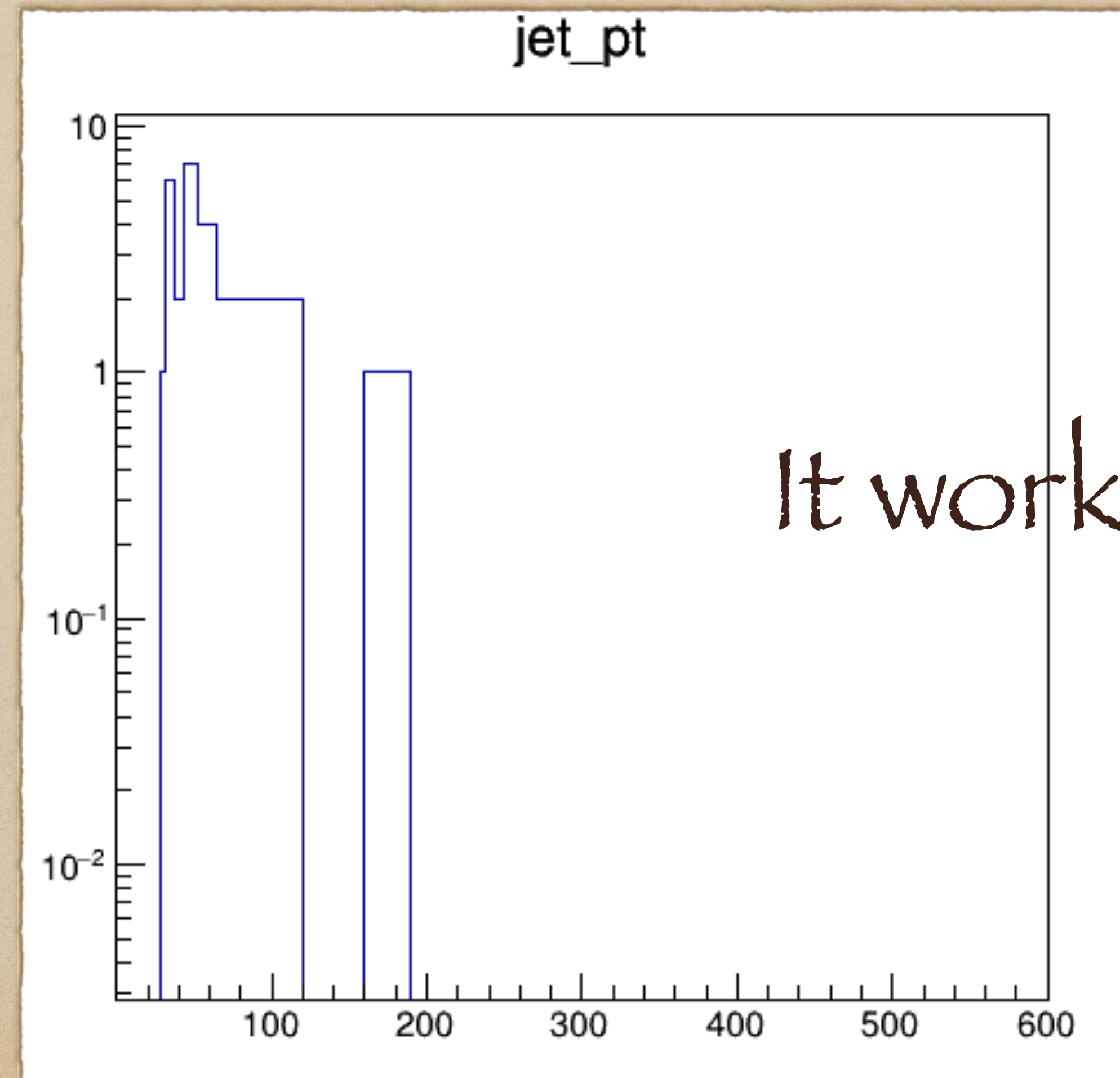
- ◆ <https://github.com/cms-nanoAOD/nanoAOD-tools>
- ◆ apply cuts on datasets and produce a smaller ntuple
- ◆ e.g. 144.6 GB -> 481 M

The screenshot shows the GitHub repository page for `cms-nanoAOD / nanoAOD-tools`. The repository has 22 watchers, 25 stars, and 149 forks. It contains 34 issues, 3 pull requests, 0 actions, 0 projects, 0 wiki pages, 0 security issues, and 0 insights. The repository description is "Tools for working with NanoAOD (requiring only python + root, not CMSSW)". It has 453 commits, 16 branches, 0 packages, 0 releases, and 34 contributors. The current branch is `master`. A new pull request can be created. The repository contains several files and directories, with the following table summarizing the visible items:

File/Directory	Description	Last Commit
<code>crab</code>	avoid listing all directory tree	8 months ago
<code>data</code>	adding new tarball for Summer16 FastSim JECs	4 months ago
<code>interface</code>	HT module from Sal Rappoccio	12 months ago
<code>python/postprocessing</code>	Add docstring to prefiring correction module	3 months ago
<code>scripts</code>	Fix import numpy	7 months ago
<code>src</code>	bugfix: cropped vector should be cleared in each iteration	7 months ago
<code>standalone</code>	Fix readme and use BASH_SOURCE instead of \$0	3 years ago
<code>.gitignore</code>	Add few binary extensions to gitignore	3 years ago
<code>BuildFile.xml</code>	Merge pull request #24 from veelken/jetmetUncertainties	3 years ago
<code>README.md</code>	Update README.md	2 years ago

What I do is...

- ◆ use the nanoAODplus with nanoAODtools
- ◆ apply some simple cuts
- ◆ muon: $|\eta| < 2.4$, invariant mass in $[76, 106]\text{GeV}$, medium ID, leading $p_t > 25\text{GeV}$, subleading $p_t > 20\text{GeV}$
- ◆ jet: $p_t > 30\text{GeV}$, $|\eta| < 2.4$



It works!!

some variables are missing in the nanoAODplus

- ◆ Muon_pflsold: PFIso ID from miniAOD selector, (1=PFIsoVeryLoose, 2=PFIsoLoose, 3=PFIsoMedium, 4=PFIsoTight, 5=PFIsoVeryTight, 6=PFIsoVeryVeryTight)
- ◆ Jet_jetId : Jet ID flags, (bit1 is loose, bit2 is tight, bit3 is tightLepVeto)
- ◆ nGenJet : slimmedGenJets, (i.e. ak4 Jets made with visible genparticles)
- ◆ Reference: [nanoAOD content](#)

THANK YOU :))