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BkgTreePlotter

The BkgTreePlotter package provides tools to visualise the MC true origin of a background candidate (which works as well for signal candidates). It has been presented
https://indico.cern.ch/event/355690/contribution/3/material/slides/0.pdf

If included in the DaVinci main sequence, a .dot file will be created for every candidate at the input TES location(s). The MCTools/BkgTreePlotter package is required and the configuration is:

```
from Configurables import DotCreator
DaVinci().appendToMainSequence ( [ DotCreator(Inputs = [ "Phys/MyTau23MuCandidates/Particles" ] )
```

for an apropriate TES location. The .dot files can be converted to .pdf with the shell script in the package: ./postprocessing.sh will process all .dot files in the current working directory.

The output should look somehow like this:
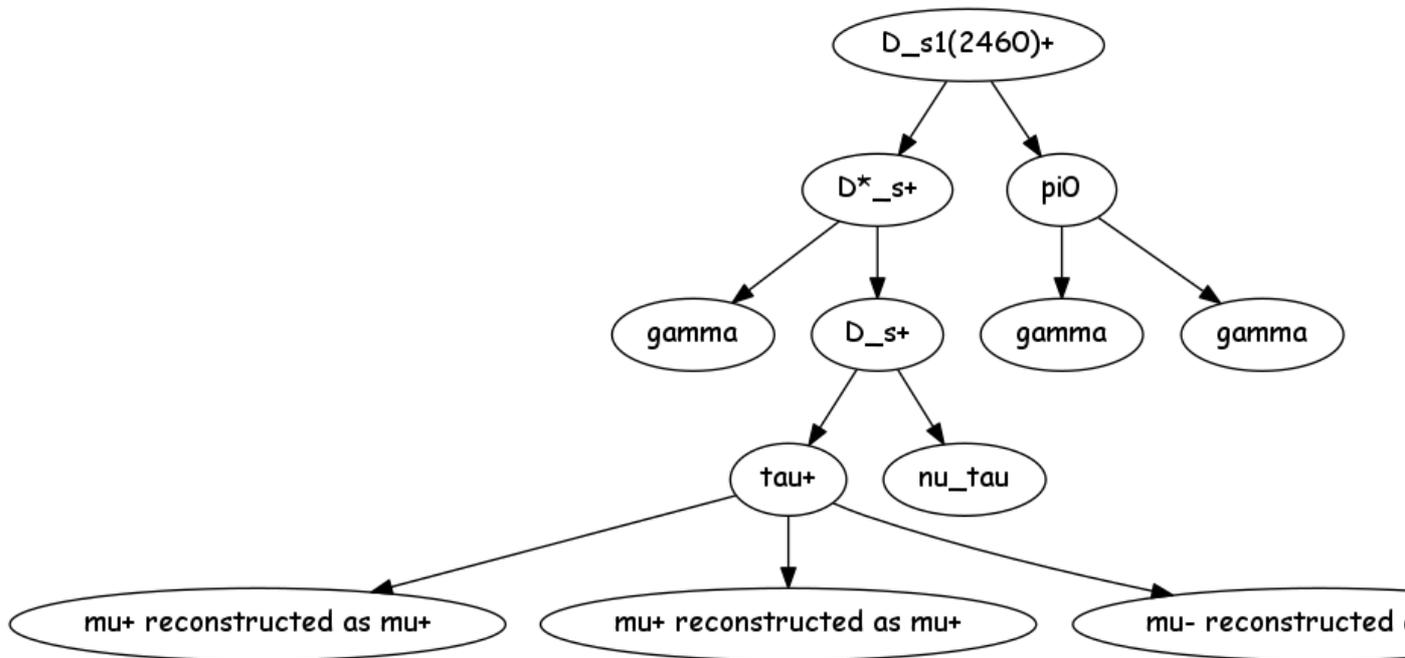
Usage recommendation

I recommend not to create thousands of plots to look at them (dull work and often inconclusive). Either cut very tight on your BDT / neural network until you're left with O(10) events or create a short list of run&event numbers from your ntuple (I assume that you already have ntuples, so let's start from there) and then process these events:

```
from Configurables import LoKi__ODINFilter
odin = LoKi__ODINFilter (
    'ODINfilter' ,
    Code       =  ' odin_runevts (  the_list ) ' ,
    Preambulo = [
    "from LoKiHlt.functions  import *" ,
    "from LoKiHlt.decorators import *" ,
    "the_list = runevt_lst ( [RunEvt(112290, 888056458), RunEvt(112290,
891370819)] )" ])
DaVinci().EventPreFilters = [odin]
```

options

`DotCreator.NoFragmentation`

(enabled by default) suppresses string fragmentation, so you won't see gazillions of fragmentation particles. For tagging studies, you might want to change this.

Feedback

Please send feedback to Paul.Seyfert-at-mib.infn.it. Especially the following items are of interest:

- at the moment, each candidate receives their own diagram. (from the filename you will see that the candidates are from the same event)
  feedback welcome: should they go to the same diagram? how to highlight which tracks belong to which candidate?
- when you reconstruct B 0s   D s (KK) , the plot won t distinguish the bachelor pion from the D daughter pion.
  feedback welcome: is this needed? suggestions how to best visualise
- I didn t test how the code reacts when encountering a   0 candidate and I know too little about MC association of neutral clusters
  feedback welcome: test case
- At the moment the list of MCVertexTypes which are ignored is hard coded. There is no cut on the z position of the MCVertex
  feedback welcome: is this needed to be configurable?

-- PaulSeyfert - 2015-05-11

This topic: LHCb > BkgTreePlotter
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