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A Walkthrough Guide to NTuples at LHCb

This is a walk through Tutorial to Create NTuples for the sample `D* \x{2192} D^0 \x{03c0} ; D^0 \x{2192} K \x{03c0}`.

At the end of this tutorial, you should be able to

- Find Monte Carlo DST files using the LHCb Bookkeeping system
- From the Bookkeeping system, create a python file with the names of these DST files
- Make NTuples from these DST files

1. Finding the Monte Carlo files

One must be logged into lxplus5 in order to access the LHCb Bookkeeping system. If you're not at CERN directly, it's best to do this via VNC. You can find the info here.

Once logged into the VPN, execute

```
lhcb-proxy-init
```

This initializes your proxy. It will ask you for your Grid Certificate Password.

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Once there, follow the instructions for getting a new grid certificate. You will need to use Firefox or IE. When prompted, choose the "Through CERN" option. The rest should be pretty self explanatory. You will need to do this only once. Then, you can use the same Certificate over and over again.

Next, access the bookkeeping GUI:

```
lhcb_bkk &
```

The ampersand following `lhcb_bkk` tells the operating system to execute the command in background mode so you will have access to the command prompt without killing `lhcb_bkk`. In any case, this command will open the bookkeeping system browser. There is information about many types of data here. We are specifically interested in find Monte Carlo data sets.

- Open the MC folder. As the name suggests, this is where Monte Carlo Data is.
- Open the subfolder MC11a. There is, a priori, no reason for guessing this.
- Open Beam3500GeV-2011-MigDown-Nu2-EmNoCuts. As the name suggests, this is for a 3.5 TeV beam (single beam) in 2011 with the Magnet down orientation. EmNoCuts probably means no additional cuts made on what is observed in the EM calorimeter, but this is simply a guess at this point.
- Open the Sim05 folder. The only reason for this is that this is where our sample exists.

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- Open the Reco12a folder. Again, this is where the sample we want exists.
- Open Stripping17NoPrescalingFlagged. "Flagged" means trigger decisions are recorded, but all events are kept.
- Scroll down and choose folder 27163003. The description is Dst_D0pi, Kpi=DecProdCut, hence what we want.

NB: If you are looking for a different decay chain, and don't want to search endlessly around the GUI, a helpful website is http://lhcb-release-area.web.cern.ch/LHCB-release-area/DOC/decfiles/releases/dev/table_evttype.php. By simply doing a search for the decays you'd like, you can find the corresponding number in the Bookkeeping system

- Choose ALLSTREAMS.DST
- Click Nb. of Files/Events. This will open a new GUI which lists names of files, event statistics, etc.

From here, it is literally a point and click to save the desired files.

- Click Save Files on the bottom right. This will bring up a dialogue box where you choose the directory and file name where the list of files will be stored as a python file which can be used in DaVinci applications.
- Click OK. That's it!
- Repeat the same for MgUp data.

3. Making NTuples

-- AdamDavis - 21-Aug-2012

This topic: Main > NtupleTutorial

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