```
In[1]:=  Clear["Global`*"];
```

```
In[2]:=  $Version
```

```
Out[2]=  10.4.0 for Linux x86 (64-bit) (February 26, 2016)
```

# Manual file for ManeParse Package Version 2.2

Version 2.2
20 May 2016

Comments and questions to:

Eric Godat egodat@smu.edu
Ben Clark dbclark@smu.edu
Fred Olness olness@physics.smu.edu

## Set Absolute Directory Paths Here

Here we set up all the main directories.
 The rest of the notebook uses only RELATIVE paths.
 We'll show what goes in each directory below.

```
In[3]:=  (* This just drops the leading path
   info to make the list of files easier to read *)
 dropPath = Take[(FileNameSplit /@ #) // Transpose, -1][[1]] &;
```

```
In[4]:=  (* This is where the main notebook file resides *)
 workDir = Directory[];
 FileNames["*", workDir] // dropPath
```

```
Out[5]=  {Demo.nb, Demo.pdf, MakeDemo.py, manual_v1.nb,
   manual_v1.pdf, MP_packages, noe2.perl, PDF_Sets, README}
```

```
In[6]:=  (* This is where the ManeParse files reside *)
 dirPackages = workDir <> "/MP_packages";
 FileNames["*.m", dirPackages] // dropPath
```

```
Out[7]=  {pdfCalc.m, pdfErrors.m, pdfParseCTEQ.m, pdfParseLHA.m}
```

In[8]:=
```
(* This is where the LHAPDF files are located *)
lhaDir = workDir <> "/PDF_Sets/LHA";
FileNames["*", lhaDir] // dropPath
```

Out[9]= {CT10, MSTW2008lo68cl, NNPDF30_nlo_as_0118}

In[10]:=
```
(* This is where the PDS format files are located *)
pdsDir = workDir <> "/PDF_Sets/PDS";
FileNames["*", pdsDir] // dropPath
```

Out[11]= {ct10.pds, ctq66m.pds}

## Required PDF sets:

For this notebook to run, it requires the following PDF sets;

LHA SETS: {CT10,MSTW2008lo68cl,NNPDF30_nlo_as_0118}

PDS SETS:  {ct10.pds,ctq66m.pds}

# Just step through and demo each function:

# Load the packages

## Loading the main package provides many useful functions

In[12]:= `Get[dirPackages <> "/pdfParseLHA.m"]`

```
- Required Package: pdfCalc --Loaded -


================================================================


- pdfParseLHA -

Version:  1.0

Authors: E.J. Godat, D.B. Clark & F.I. Olness


Please cite: **************

http://ncteq.hepforge.org/code/pdf.html


For a list of available commands, enter: ?pdf*


================================================================
```

In[13]:= `Get[dirPackages <> "/pdfParseCTEQ.m"]`

```
================================================================


- pdfParseCTEQ -

Version:  1.0

Authors: D.B. Clark, E.J. Godat & F.I. Olness


Please cite: **************

http://ncteq.hepforge.org/code/pdf.html


For a list of available commands, enter: ?pdf*


================================================================
```

### pdfCalc.m is already loaded automatically by pdfParseLHA and pdfParseCTEQ, but it won' t hurt to do it again; just ignore the warnings

In[14]:=

```
(* pdfCalc.m is already loaded automatically by pdfParseLHA and pdfParseCTEQ,
but it won' t hurt to do it again; just ignore the warnings *)

Get[dirPackages <> "/pdfCalc.m"]
```

```
- Required Package: pdfCalc --Loaded -
```

In[15]:=
```
Get[dirPackages <> "/pdfErrors.m"]
```

```
================================================================

 - pdfErrors -

Version:  1.0

Authors: D.B. Clark, E.J. Godat & F.I. Olness

Please cite: **************

http://ncteq.hepforge.org/code/pdf.html

For a list of available commands, enter: ?pdf*

================================================================
```

# Set Interpolator

In[16]:=
**? pdfSetInterpolator**

pdfSetInterpolator[[key]]: This function selects the interpolation routine to use for pdfFunction.

Available functions include: "MMA", the default interpolation routine from Mathematica or "ManeParse", a custom cubic Lagrange interpolation routine.

The x–power for the ManeParse interpolation can be set with pdfSetXpower.

*Note*: The input is optional for this function. No input will reset the default Mathematica interpolator.

In[17]:=
**pdfSetInterpolator["MMA"]**

```
Default Mathematica interpolator will be used.
```

In[18]:= **pdfSetInterpolator["ManeParse"]**

ManeParse cubic interpolation will be used.

The x-power of the interpolation is set to 1

In[19]:= **? pdfSetXpower**

pdfSetXpower[[power]]: This function sets the x–power to be used with the ManeParse interpolation routine.

The defult value of *power* = 1 will interpolate in $x^1 *$pdf(x,Q).

*Note*: The input is optional for this function. No input will reset the default value.

In[20]:= **pdfSetXpower[]**

ManeParse cubic interpolation will be used.

The x-power of the interpolation is set to 1

In[21]:= **pdfSetXpower[2]**

ManeParse cubic interpolation will be used.

The x-power of the interpolation is set to 2

In[22]:= **pdfSetInterpolator["MMA"]**

Default Mathematica interpolator will be used.

In[23]:= **pdfSetXpower[1.5]**

ManeParse cubic interpolation will be used.

The x-power of the interpolation is set to 1.5

# pdfReset

In[24]:= **pdfReset[]**

Default Mathematica interpolator will be used.

All internal variables have been reset.

# Read Individual LHAPDF files

## read lhapdf file

In[25]:= **lhaList = FileNames$\left["*", \text{lhaDir}\right]$;**
**lhaList // dropPath**

Out[26]= {CT10, MSTW2008lo68cl, NNPDF30_nlo_as_0118}

In[27]:= `lhaList[[1]]`

Out[27]= `/home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/CT10`

In[28]:= `fileNamesLHA[iDir_] := FileNames["*", lhaList[[iDir]]];`
`fileNamesLHA[1] // dropPath`

Out[29]= {CT10_0000.dat, CT10_0001.dat, CT10_0002.dat, CT10_0003.dat,
CT10_0004.dat, CT10_0005.dat, CT10_0006.dat, CT10_0007.dat, CT10_0008.dat,
CT10_0009.dat, CT10_0010.dat, CT10_0011.dat, CT10_0012.dat, CT10_0013.dat,
CT10_0014.dat, CT10_0015.dat, CT10_0016.dat, CT10_0017.dat, CT10_0018.dat,
CT10_0019.dat, CT10_0020.dat, CT10_0021.dat, CT10_0022.dat, CT10_0023.dat,
CT10_0024.dat, CT10_0025.dat, CT10_0026.dat, CT10_0027.dat, CT10_0028.dat,
CT10_0029.dat, CT10_0030.dat, CT10_0031.dat, CT10_0032.dat, CT10_0033.dat,
CT10_0034.dat, CT10_0035.dat, CT10_0036.dat, CT10_0037.dat, CT10_0038.dat,
CT10_0039.dat, CT10_0040.dat, CT10_0041.dat, CT10_0042.dat, CT10_0043.dat,
CT10_0044.dat, CT10_0045.dat, CT10_0046.dat, CT10_0047.dat, CT10_0048.dat,
CT10_0049.dat, CT10_0050.dat, CT10_0051.dat, CT10_0052.dat, CT10.info}

In[30]:= `? pdfParseLHA`

pdfParseLHA[fileNameInfo, fileNameData, [verbose]]: This function reads an individual .info
file and .data file specified by *fileNameInfo* and *fileNameData*, respectively, into memory.

The function returns a set number that corresponds to the listing of the .dat file in *pdfSetList*.

Additionally, the function checks that the number and the order of the flavors are the same in both files.

The optional input allows the user to supress the output of this function by choosing *verbose* to be *False*.

## Read in First LHA file

In[31]:= `iDir = 1;`

In[32]:= `info = fileNamesLHA[iDir][[-1]]`

Out[32]= `/home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/CT10/CT10`
`.info`

In[33]:= `dat = fileNamesLHA[iDir][[1]]`

Out[33]= `/home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/CT10/`
`CT10_0000.dat`

In[34]:= **pdfParseLHA$\left[\text{info, dat}\right]$**

Successfully read
  /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/CT10/CT10.info
    .

Successfully read
  /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/CT10/CT10_
    0000.dat.

Out[34]= 1

## Read in Second LHA file

In[35]:= **iDir = 2;**
**$\left\{\text{info, dat}\right\}$ = $\left\{\text{fileNamesLHA}\left[\text{iDir}\right][[-1]], \text{fileNamesLHA}\left[\text{iDir}\right][[1]]\right\}$**

Out[36]= {/home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/
    MSTW2008lo68cl/MSTW2008lo68cl.info,
  /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/
    MSTW2008lo68cl/MSTW2008lo68cl_0000.dat}

In[37]:= **pdfParseLHA$\left[\text{info, dat}\right]$**

Successfully read
  /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/MSTW2008lo68cl
    /MSTW2008lo68cl.info.

Successfully read
  /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/MSTW2008lo68cl
    /MSTW2008lo68cl_0000.dat.

Out[37]= 2

## Read in Third LHA file

In[38]:= **iDir = 3;**
**$\left\{\text{info, dat}\right\}$ = $\left\{\text{fileNamesLHA}\left[\text{iDir}\right][[-1]], \text{fileNamesLHA}\left[\text{iDir}\right][[1]]\right\}$**

Out[39]= {/home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/
    NNPDF30_nlo_as_0118/NNPDF30_nlo_as_0118.info,
  /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/
    NNPDF30_nlo_as_0118/NNPDF30_nlo_as_0118_0000.dat}

In[40]:= **pdfParseLHA$\left[\text{info, dat}\right]$**

Successfully read
  /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/NNPDF30_nlo_as
    _0118/NNPDF30_nlo_as_0118.info.

Successfully read
  /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/NNPDF30_nlo_as
    _0118/NNPDF30_nlo_as_0118_0000.dat.

Out[40]= 3

# Read Individual PDS files

## read PDS files

In[41]:= `pdsList = FileNames["*", pdsDir];`
`pdsList // dropPath`

Out[42]= `{ct10.pds, ctq66m.pds}`

In[43]:= `fileNamesPDS[iDir_] := FileNames["*", pdsList[[iDir]]];`
`fileNamesPDS[1] // dropPath`

Out[44]= `{ct10.00.pds, ct10.01.pds, ct10.02.pds, ct10.03.pds, ct10.04.pds,`
`  ct10.05.pds, ct10.06.pds, ct10.07.pds, ct10.08.pds, ct10.09.pds, ct10.10.pds,`
`  ct10.11.pds, ct10.12.pds, ct10.13.pds, ct10.14.pds, ct10.15.pds, ct10.16.pds,`
`  ct10.17.pds, ct10.18.pds, ct10.19.pds, ct10.20.pds, ct10.21.pds, ct10.22.pds,`
`  ct10.23.pds, ct10.24.pds, ct10.25.pds, ct10.26.pds, ct10.27.pds, ct10.28.pds,`
`  ct10.29.pds, ct10.30.pds, ct10.31.pds, ct10.32.pds, ct10.33.pds, ct10.34.pds,`
`  ct10.35.pds, ct10.36.pds, ct10.37.pds, ct10.38.pds, ct10.39.pds, ct10.40.pds,`
`  ct10.41.pds, ct10.42.pds, ct10.43.pds, ct10.44.pds, ct10.45.pds, ct10.46.pds,`
`  ct10.47.pds, ct10.48.pds, ct10.49.pds, ct10.50.pds, ct10.51.pds, ct10.52.pds}`

In[45]:= `? pdfParseCTEQ`

> pdfParseCTEQ[fileName, [verbose]]: This function
>     reads an individual .pds file specified by *fileName* into memory.
>
> The function returns a set number that corresponds to the listing of the .pds file in *pdfSetList*.
>
> The optional input allows the user to
>     supress the output of this function by choosing *verbose* to be *False*.

## Read in First PDS file

In[46]:= `iDir = 1;`
`dat = fileNamesPDS[iDir] // First`

Out[47]= `/home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/PDS/ct10.pds/`
`  ct10.00.pds`

In[48]:= `pdfParseCTEQ[dat]`

`PDF Table for Fit ♯: cx22a`

Out[48]= `4`

### Read in Second PDS file

In[49]:= `iDir = 2;`
`dat = fileNamesPDS[iDir] // First`

Out[50]= /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/PDS/ctq66m.
pds/ctq66.00.pds

In[51]:= `pdfParseCTEQ[dat]`

PDF Table for Fit ♯: p82a3

Out[51]= 5

# Current PDFs

In[52]:= `pdfSetListDisplay[]`

Out[52]=

| Set Number | File Name | Max Flavors | Valance Flavors |
|:---:|:---:|:---:|:---:|
| 1 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0000.dat | 5 | n/a |
| 2 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/<br>MSTW2008lo68cl/MSTW2008lo68cl_0000.dat | 5 | n/a |
| 3 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/<br>NNPDF30_nlo_as_0118/NNPDF30_nlo_as_<br>0118_0000.dat | 5 | n/a |
| 4 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/PDS/ct10<br>.pds/ct10.00.pds | 5 | 2 |
| 5 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/PDS/<br>ctq66m.pds/ctq66.00.pds | 5 | 2 |

In[53]:= `isetMax = Length[pdfSetList]`

Out[53]= 5

In[54]:= `Table[{iSet, pdfFunction[iSet, 0, 0.1, 10.]}, {iSet, 1, isetMax}] // TableForm`

Out[54]//TableForm=
```
1    11.2111
2    10.873
3    12.207
4    11.2111
5    11.0883
```

# PDF short-hand:

We save the short name "pdf" for a user defined function. If you wish, you can put in some error checking or impose boundaries or positivity here.

```
In[55]:= pdf[args___] := pdfFunction[args]
        SetAttributes[pdf, Listable];
```

```
In[57]:= Range[isetMax]
```

```
Out[57]= {1, 2, 3, 4, 5}
```

```
In[58]:= pdf[Range[isetMax], 0, 0.1, 10.] // TableForm
```

```
Out[58]//TableForm=
        11.2111
        10.873
        12.207
        11.2111
        11.0883
```

```
In[59]:= pdfPositive[args__] := Module[{},
          tmp = pdf[args];
          tmp = Max[tmp, 0.0];
          Return[tmp];
         ]
```

```
        {pdf[1, 0, 0.9, 2.0], pdfPositive[1, 0, 0.9, 2.0]}
```

```
Out[60]= {0.000337703, 0.000337703}
```

# pdfReset

```
In[61]:= pdfReset[]
```

```
        Default Mathematica interpolator will be used.
```

```
        All internal variables have been reset.
```

# Read Groups of LHAPDF files

## read lhapdf file

```
In[62]:= lhaList = FileNames["*", lhaDir];
        lhaList // dropPath
```

```
Out[63]= {CT10, MSTW2008lo68cl, NNPDF30_nlo_as_0118}
```

In[64]:= **? pdfFamilyParseLHA**

---

pdfFamilyParseLHA[path, [fileType]]: This function reads all
the files of type *fileType* in the directory *path* and stores them in memory.

The function returns a list of set numbers that can be used to define
a list. These set numbers correspond to the listing of the .dat files in *pdfSetList*.

The optional input *fileType* has a default value of "*.dat".

Example:
pdfFamilyParseLHA["MyGrids","ct10*.dat"] reads all
.dat files in the subdirectory "MyGrids" beginning with "ct10" into memory.

## Read in First LHA file group

In[65]:= **lhaList[[1]]**

Out[65]= /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/CT10

In[66]:= **ct10 = pdfFamilyParseLHA[lhaList[[1]]]**

Successfully read
/home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/CT10/CT10.info
.

Included 53 files in the PDF family.

Out[66]= {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18,
19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35,
36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53}

## Read in Second LHA file group

In[67]:= **lhaList[[2]]**

Out[67]= /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/
MSTW2008lo68cl

In[68]:= **mstw = pdfFamilyParseLHA[lhaList[[2]]]**

Successfully read
/home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/MSTW2008lo68cl
/MSTW2008lo68cl.info.

Included 41 files in the PDF family.

Out[68]= {54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74,
75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94}

### Read in Third LHA file group

In[69]:= `lhaList[[3]]`

Out[69]= /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/
    NNPDF30_nlo_as_0118

In[70]:= `nnpdf = pdfFamilyParseLHA[lhaList[[3]]]`

Successfully read
 /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/NNPDF30_nlo_as
    _0118/NNPDF30_nlo_as_0118.info.

Included 101 files in the PDF family.

Out[70]= {95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113,
    114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130,
    131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147,
    148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163,
    164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179,
    180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195}

# Read Groups of PDS files

### read pds file

In[71]:= `pdsList = FileNames["*", pdsDir];`
       `pdsList // dropPath`

Out[72]= {ct10.pds, ctq66m.pds}

In[73]:= `? pdfFamilyParseCTEQ`

pdfFamilyParseCTEQ[path, [fileType]]: This function reads all
    the files of type *fileType* in the directory *path* and stores them in memory.

The function returns a list of set numbers that can be used to define
    a list. These set numbers correspond to the listing of the .pds files in *pdfSetList*.

The optional input *fileType* has a default value of "*.pds".

Example:
  pdfFamilyParseCTEQ["MyGrids","ct10*pds"] reads all
    .pds files in the subdirectory "MyGrids" beginning with "ct10" into memory.

## Read in First PDS file group

In[74]:= **pdsList[[1]]**

Out[74]= /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/PDS/ct10.pds

In[75]:= **ct10pds = pdfFamilyParseCTEQ[pdsList[[1]]]**

Included 53 files in the PDF family.

Out[75]= {196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248}

## Read in Second PDS file group

In[76]:= **pdsList[[2]]**

Out[76]= /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/PDS/ctq66m.pds

In[77]:= **cteq66 = pdfFamilyParseCTEQ[pdsList[[2]]]**

Included 45 files in the PDF family.

Out[77]= {249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293}

# Read Groups of PDS files

## read PDS files

In[78]:= **pdsList = FileNames["*", pdsDir];**
**pdsList // dropPath**

Out[79]= {ct10.pds, ctq66m.pds}

In[80]:= **fileNamesPDS[iDir_] := FileNames["*", pdsList[[iDir]]];**
**fileNamesPDS[1] // dropPath**

Out[81]= {ct10.00.pds, ct10.01.pds, ct10.02.pds, ct10.03.pds, ct10.04.pds, ct10.05.pds, ct10.06.pds, ct10.07.pds, ct10.08.pds, ct10.09.pds, ct10.10.pds, ct10.11.pds, ct10.12.pds, ct10.13.pds, ct10.14.pds, ct10.15.pds, ct10.16.pds, ct10.17.pds, ct10.18.pds, ct10.19.pds, ct10.20.pds, ct10.21.pds, ct10.22.pds, ct10.23.pds, ct10.24.pds, ct10.25.pds, ct10.26.pds, ct10.27.pds, ct10.28.pds, ct10.29.pds, ct10.30.pds, ct10.31.pds, ct10.32.pds, ct10.33.pds, ct10.34.pds, ct10.35.pds, ct10.36.pds, ct10.37.pds, ct10.38.pds, ct10.39.pds, ct10.40.pds, ct10.41.pds, ct10.42.pds, ct10.43.pds, ct10.44.pds, ct10.45.pds, ct10.46.pds, ct10.47.pds, ct10.48.pds, ct10.49.pds, ct10.50.pds, ct10.51.pds, ct10.52.pds}

In[82]:= **? pdfParseCTEQ**

---

pdfParseCTEQ[fileName, [verbose]]: This function
reads an individual .pds file specified by *fileName* into memory.

The function returns a set number that corresponds to the listing of the .pds file in *pdfSetList* .

The optional input allows the user to
supress the output of this function by choosing *verbose* to be *False* .

## Read in First PDS file

In[83]:= **iDir = 1;**
**pdsFile1 = fileNamesPDS[iDir] // First**

Out[84]= /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/PDS/ct10.pds/
ct10.00.pds

In[85]:= **pdfParseCTEQ[pdsFile1]**

PDF Table for Fit ♯: cx22a

Out[85]= 294

## Read in Second PDS file

In[86]:= **iDir = 2;**
**pdsFile2 = fileNamesPDS[iDir] // First**

Out[87]= /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/PDS/ctq66m.
pds/ctq66.00.pds

In[88]:= **pdfParseCTEQ[pdsFile2]**

PDF Table for Fit ♯: p82a3

Out[88]= 295

---

# Current PDFs

In[89]:= **pdfSetListDisplay[]**

| Set Number | File Name | Max Flavors | Valance Flavors |
|---|---|---|---|
| 1 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0000.dat | 5 | n/a |
| 2 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0001.dat | 5 | n/a |

| 3 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0002.dat | 5 | n/a |
|---|---|---|---|
| 4 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0003.dat | 5 | n/a |
| 5 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0004.dat | 5 | n/a |
| 6 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0005.dat | 5 | n/a |
| 7 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0006.dat | 5 | n/a |
| 8 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0007.dat | 5 | n/a |
| 9 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0008.dat | 5 | n/a |
| 10 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0009.dat | 5 | n/a |
| 11 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0010.dat | 5 | n/a |
| 12 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0011.dat | 5 | n/a |
| 13 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0012.dat | 5 | n/a |
| 14 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0013.dat | 5 | n/a |
| 15 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0014.dat | 5 | n/a |
| 16 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0015.dat | 5 | n/a |
| 17 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0016.dat | 5 | n/a |

| 18 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0017.dat | 5 | n/a |
|----|-----|---|-----|
| 19 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0018.dat | 5 | n/a |
| 20 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0019.dat | 5 | n/a |
| 21 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0020.dat | 5 | n/a |
| 22 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0021.dat | 5 | n/a |
| 23 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0022.dat | 5 | n/a |
| 24 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0023.dat | 5 | n/a |
| 25 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0024.dat | 5 | n/a |
| 26 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0025.dat | 5 | n/a |
| 27 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0026.dat | 5 | n/a |
| 28 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0027.dat | 5 | n/a |
| 29 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0028.dat | 5 | n/a |
| 30 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0029.dat | 5 | n/a |
| 31 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0030.dat | 5 | n/a |
| 32 | /home/egodat/Documents/ben/MMA_package/<br>trunk/ManeParse/Demo/PDF_Sets/LHA/CT10<br>/CT10_0031.dat | 5 | n/a |

| 33 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0032.dat | 5 | n/a |
|----|---|---|---|
| 34 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0033.dat | 5 | n/a |
| 35 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0034.dat | 5 | n/a |
| 36 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0035.dat | 5 | n/a |
| 37 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0036.dat | 5 | n/a |
| 38 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0037.dat | 5 | n/a |
| 39 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0038.dat | 5 | n/a |
| 40 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0039.dat | 5 | n/a |
| 41 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0040.dat | 5 | n/a |
| 42 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0041.dat | 5 | n/a |
| 43 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0042.dat | 5 | n/a |
| 44 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0043.dat | 5 | n/a |
| 45 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0044.dat | 5 | n/a |
| 46 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0045.dat | 5 | n/a |
| 47 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0046.dat | 5 | n/a |

| 48 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0047.dat | 5 | n/a |
|---|---|---|---|
| 49 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0048.dat | 5 | n/a |
| 50 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0049.dat | 5 | n/a |
| 51 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0050.dat | 5 | n/a |
| 52 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0051.dat | 5 | n/a |
| 53 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/CT10 /CT10_0052.dat | 5 | n/a |
| 54 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0000.dat | 5 | n/a |
| 55 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0001.dat | 5 | n/a |
| 56 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0002.dat | 5 | n/a |
| 57 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0003.dat | 5 | n/a |
| 58 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0004.dat | 5 | n/a |
| 59 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0005.dat | 5 | n/a |
| 60 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0006.dat | 5 | n/a |
| 61 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0007.dat | 5 | n/a |
| 62 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0008.dat | 5 | n/a |

| 63 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0009.dat | 5 | n/a |
|---|---|---|---|
| 64 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0010.dat | 5 | n/a |
| 65 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0011.dat | 5 | n/a |
| 66 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0012.dat | 5 | n/a |
| 67 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0013.dat | 5 | n/a |
| 68 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0014.dat | 5 | n/a |
| 69 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0015.dat | 5 | n/a |
| 70 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0016.dat | 5 | n/a |
| 71 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0017.dat | 5 | n/a |
| 72 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0018.dat | 5 | n/a |
| 73 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0019.dat | 5 | n/a |
| 74 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0020.dat | 5 | n/a |
| 75 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0021.dat | 5 | n/a |
| 76 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0022.dat | 5 | n/a |
| 77 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0023.dat | 5 | n/a |

| 78 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0024.dat | 5 | n/a |
|---|---|---|---|
| 79 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0025.dat | 5 | n/a |
| 80 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0026.dat | 5 | n/a |
| 81 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0027.dat | 5 | n/a |
| 82 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0028.dat | 5 | n/a |
| 83 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0029.dat | 5 | n/a |
| 84 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0030.dat | 5 | n/a |
| 85 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0031.dat | 5 | n/a |
| 86 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0032.dat | 5 | n/a |
| 87 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0033.dat | 5 | n/a |
| 88 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0034.dat | 5 | n/a |
| 89 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0035.dat | 5 | n/a |
| 90 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0036.dat | 5 | n/a |
| 91 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0037.dat | 5 | n/a |
| 92 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0038.dat | 5 | n/a |

| 93 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0039.dat | 5 | n/a |
|---|---|---|---|
| 94 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ MSTW2008lo68cl/MSTW2008lo68cl_0040.dat | 5 | n/a |
| 95 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0000.dat | 5 | n/a |
| 96 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0001.dat | 5 | n/a |
| 97 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0002.dat | 5 | n/a |
| 98 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0003.dat | 5 | n/a |
| 99 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0004.dat | 5 | n/a |
| 100 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0005.dat | 5 | n/a |
| 101 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0006.dat | 5 | n/a |
| 102 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0007.dat | 5 | n/a |
| 103 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0008.dat | 5 | n/a |
| 104 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0009.dat | 5 | n/a |

| 105 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0010.dat | 5 | n/a |
|---|---|---|---|
| 106 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0011.dat | 5 | n/a |
| 107 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0012.dat | 5 | n/a |
| 108 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0013.dat | 5 | n/a |
| 109 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0014.dat | 5 | n/a |
| 110 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0015.dat | 5 | n/a |
| 111 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0016.dat | 5 | n/a |
| 112 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0017.dat | 5 | n/a |
| 113 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0018.dat | 5 | n/a |
| 114 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0019.dat | 5 | n/a |
| 115 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0020.dat | 5 | n/a |

| 116 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0021.dat | 5 | n/a |
|---|---|---|---|
| 117 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0022.dat | 5 | n/a |
| 118 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0023.dat | 5 | n/a |
| 119 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0024.dat | 5 | n/a |
| 120 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0025.dat | 5 | n/a |
| 121 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0026.dat | 5 | n/a |
| 122 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0027.dat | 5 | n/a |
| 123 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0028.dat | 5 | n/a |
| 124 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0029.dat | 5 | n/a |
| 125 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0030.dat | 5 | n/a |
| 126 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0031.dat | 5 | n/a |

| 127 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0032.dat | 5 | n/a |
|---|---|---|---|
| 128 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0033.dat | 5 | n/a |
| 129 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0034.dat | 5 | n/a |
| 130 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0035.dat | 5 | n/a |
| 131 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0036.dat | 5 | n/a |
| 132 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0037.dat | 5 | n/a |
| 133 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0038.dat | 5 | n/a |
| 134 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0039.dat | 5 | n/a |
| 135 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0040.dat | 5 | n/a |
| 136 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0041.dat | 5 | n/a |
| 137 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0042.dat | 5 | n/a |

| 138 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0043.dat | 5 | n/a |
|---|---|---|---|
| 139 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0044.dat | 5 | n/a |
| 140 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0045.dat | 5 | n/a |
| 141 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0046.dat | 5 | n/a |
| 142 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0047.dat | 5 | n/a |
| 143 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0048.dat | 5 | n/a |
| 144 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0049.dat | 5 | n/a |
| 145 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0050.dat | 5 | n/a |
| 146 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0051.dat | 5 | n/a |
| 147 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0052.dat | 5 | n/a |
| 148 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0053.dat | 5 | n/a |

Out[89]=

| 149 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0054.dat | 5 | n/a |
|-----|---|---|---|
| 150 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0055.dat | 5 | n/a |
| 151 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0056.dat | 5 | n/a |
| 152 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0057.dat | 5 | n/a |
| 153 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0058.dat | 5 | n/a |
| 154 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0059.dat | 5 | n/a |
| 155 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0060.dat | 5 | n/a |
| 156 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0061.dat | 5 | n/a |
| 157 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0062.dat | 5 | n/a |
| 158 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0063.dat | 5 | n/a |
| 159 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0064.dat | 5 | n/a |

| 160 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0065.dat | 5 | n/a |
|---|---|---|---|
| 161 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0066.dat | 5 | n/a |
| 162 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0067.dat | 5 | n/a |
| 163 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0068.dat | 5 | n/a |
| 164 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0069.dat | 5 | n/a |
| 165 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0070.dat | 5 | n/a |
| 166 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0071.dat | 5 | n/a |
| 167 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0072.dat | 5 | n/a |
| 168 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0073.dat | 5 | n/a |
| 169 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0074.dat | 5 | n/a |
| 170 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0075.dat | 5 | n/a |

| 171 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0076.dat | 5 | n/a |
|---|---|---|---|
| 172 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0077.dat | 5 | n/a |
| 173 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0078.dat | 5 | n/a |
| 174 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0079.dat | 5 | n/a |
| 175 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0080.dat | 5 | n/a |
| 176 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0081.dat | 5 | n/a |
| 177 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0082.dat | 5 | n/a |
| 178 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0083.dat | 5 | n/a |
| 179 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0084.dat | 5 | n/a |
| 180 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0085.dat | 5 | n/a |
| 181 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0086.dat | 5 | n/a |

| 182 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0087.dat | 5 | n/a |
|---|---|---|---|
| 183 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0088.dat | 5 | n/a |
| 184 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0089.dat | 5 | n/a |
| 185 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0090.dat | 5 | n/a |
| 186 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0091.dat | 5 | n/a |
| 187 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0092.dat | 5 | n/a |
| 188 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0093.dat | 5 | n/a |
| 189 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0094.dat | 5 | n/a |
| 190 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0095.dat | 5 | n/a |
| 191 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0096.dat | 5 | n/a |
| 192 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0097.dat | 5 | n/a |

| 193 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0098.dat | 5 | n/a |
|---|---|---|---|
| 194 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0099.dat | 5 | n/a |
| 195 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/LHA/ NNPDF30_nlo_as_0118/NNPDF30_nlo_as_ 0118_0100.dat | 5 | n/a |
| 196 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.00.pds | 5 | 2 |
| 197 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.01.pds | 5 | 2 |
| 198 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.02.pds | 5 | 2 |
| 199 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.03.pds | 5 | 2 |
| 200 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.04.pds | 5 | 2 |
| 201 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.05.pds | 5 | 2 |
| 202 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.06.pds | 5 | 2 |
| 203 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.07.pds | 5 | 2 |
| 204 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.08.pds | 5 | 2 |
| 205 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.09.pds | 5 | 2 |
| 206 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.10.pds | 5 | 2 |

| 207 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.11.pds | 5 | 2 |
|---|---|---|---|
| 208 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.12.pds | 5 | 2 |
| 209 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.13.pds | 5 | 2 |
| 210 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.14.pds | 5 | 2 |
| 211 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.15.pds | 5 | 2 |
| 212 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.16.pds | 5 | 2 |
| 213 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.17.pds | 5 | 2 |
| 214 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.18.pds | 5 | 2 |
| 215 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.19.pds | 5 | 2 |
| 216 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.20.pds | 5 | 2 |
| 217 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.21.pds | 5 | 2 |
| 218 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.22.pds | 5 | 2 |
| 219 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.23.pds | 5 | 2 |
| 220 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.24.pds | 5 | 2 |
| 221 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.25.pds | 5 | 2 |

| 222 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.26.pds | 5 | 2 |
|---|---|---|---|
| 223 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.27.pds | 5 | 2 |
| 224 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.28.pds | 5 | 2 |
| 225 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.29.pds | 5 | 2 |
| 226 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.30.pds | 5 | 2 |
| 227 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.31.pds | 5 | 2 |
| 228 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.32.pds | 5 | 2 |
| 229 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.33.pds | 5 | 2 |
| 230 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.34.pds | 5 | 2 |
| 231 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.35.pds | 5 | 2 |
| 232 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.36.pds | 5 | 2 |
| 233 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.37.pds | 5 | 2 |
| 234 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.38.pds | 5 | 2 |
| 235 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.39.pds | 5 | 2 |
| 236 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.40.pds | 5 | 2 |

| 237 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.41.pds | 5 | 2 |
|---|---|---|---|
| 238 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.42.pds | 5 | 2 |
| 239 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.43.pds | 5 | 2 |
| 240 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.44.pds | 5 | 2 |
| 241 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.45.pds | 5 | 2 |
| 242 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.46.pds | 5 | 2 |
| 243 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.47.pds | 5 | 2 |
| 244 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.48.pds | 5 | 2 |
| 245 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.49.pds | 5 | 2 |
| 246 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.50.pds | 5 | 2 |
| 247 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.51.pds | 5 | 2 |
| 248 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.52.pds | 5 | 2 |
| 249 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.00.pds | 5 | 2 |
| 250 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.01.pds | 5 | 2 |
| 251 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.02.pds | 5 | 2 |

| 252 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.03.pds | 5 | 2 |
|---|---|---|---|
| 253 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.04.pds | 5 | 2 |
| 254 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.05.pds | 5 | 2 |
| 255 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.06.pds | 5 | 2 |
| 256 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.07.pds | 5 | 2 |
| 257 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.08.pds | 5 | 2 |
| 258 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.09.pds | 5 | 2 |
| 259 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.10.pds | 5 | 2 |
| 260 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.11.pds | 5 | 2 |
| 261 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.12.pds | 5 | 2 |
| 262 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.13.pds | 5 | 2 |
| 263 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.14.pds | 5 | 2 |
| 264 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.15.pds | 5 | 2 |
| 265 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.16.pds | 5 | 2 |
| 266 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.17.pds | 5 | 2 |

| 267 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.18.pds | 5 | 2 |
|-----|------|---|---|
| 268 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.19.pds | 5 | 2 |
| 269 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.20.pds | 5 | 2 |
| 270 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.21.pds | 5 | 2 |
| 271 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.22.pds | 5 | 2 |
| 272 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.23.pds | 5 | 2 |
| 273 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.24.pds | 5 | 2 |
| 274 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.25.pds | 5 | 2 |
| 275 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.26.pds | 5 | 2 |
| 276 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.27.pds | 5 | 2 |
| 277 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.28.pds | 5 | 2 |
| 278 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.29.pds | 5 | 2 |
| 279 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.30.pds | 5 | 2 |
| 280 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.31.pds | 5 | 2 |
| 281 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.32.pds | 5 | 2 |

| 282 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.33.pds | 5 | 2 |
|---|---|---|---|
| 283 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.34.pds | 5 | 2 |
| 284 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.35.pds | 5 | 2 |
| 285 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.36.pds | 5 | 2 |
| 286 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.37.pds | 5 | 2 |
| 287 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.38.pds | 5 | 2 |
| 288 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.39.pds | 5 | 2 |
| 289 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.40.pds | 5 | 2 |
| 290 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.41.pds | 5 | 2 |
| 291 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.42.pds | 5 | 2 |
| 292 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.43.pds | 5 | 2 |
| 293 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.44.pds | 5 | 2 |
| 294 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ct10 .pds/ct10.00.pds | 5 | 2 |
| 295 | /home/egodat/Documents/ben/MMA_package/ trunk/ManeParse/Demo/PDF_Sets/PDS/ ctq66m.pds/ctq66.00.pds | 5 | 2 |

In[90]:= **pdfSetList // Short[#, 10] &**

Out[90]//Short= {{1,
    /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/CT10/
      CT10_0000.dat, 5, n/a}, {2,
    /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/CT10/
      CT10_0001.dat, 5, n/a}, {3,
    /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/CT10/
      CT10_0002.dat, 5, n/a}, ≪289≫, {293,
    /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/PDS/
      ctq66m.pds/ctq66.44.pds, 5, 2}, {294,
    /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/PDS/ct10.
      pds/ct10.00.pds, 5, 2}, {295,
    /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/PDS/
      ctq66m.pds/ctq66.00.pds, 5, 2}}

In[91]:= **isetMax = Length[pdfSetList]**

Out[91]= 295

In[92]:= `pdf[Range[isetMax], 0, 0.1, 10.]`

Out[92]= {11.2111, 11.2411, 11.1835, 11.2479, 11.1739, 11.2892, 11.1395, 11.584, 10.8682,
11.2591, 11.1483, 11.2247, 11.2034, 11.2734, 11.1084, 11.1538, 11.2646, 11.1343,
11.25, 11.0791, 11.2739, 11.0974, 11.3223, 11.4609, 10.9436, 11.1641, 11.3055,
11.2178, 11.2101, 11.2612, 11.1734, 11.0699, 11.3524, 11.6641, 10.9092, 11.1899,
11.2257, 11.2024, 11.2147, 11.0661, 11.3169, 11.2463, 11.1828, 11.2255, 11.1947,
11.1695, 11.2627, 11.042, 11.1654, 11.2094, 11.209, 11.2859, 11.2088, 10.873,
10.855, 10.883, 10.876, 10.871, 10.849, 10.904, 10.853, 10.885, 10.847, 10.89,
10.904, 10.841, 10.861, 10.882, 10.779, 10.969, 10.844, 10.894, 10.9, 10.838,
10.96, 10.778, 10.813, 10.917, 10.873, 10.875, 10.991, 10.75, 10.826, 10.921,
10.876, 10.873, 10.923, 10.849, 10.87, 10.873, 10.962, 10.766, 10.736, 10.938,
12.207, 12.5159, 12.3313, 12.6324, 11.88, 12.4589, 12.3173, 12.1461, 12.1531,
12.5251, 12.2188, 11.5647, 12.3295, 11.6583, 12.2525, 12.4926, 12.4428,
12.3161, 12.4497, 12.2567, 12.9039, 12.2476, 12.1758, 12.2701, 12.3423,
12.0201, 12.3131, 12.2846, 12.1049, 12.6721, 12.6727, 12.0485, 11.939, 11.8537,
12.2906, 12.3333, 11.9892, 12.3866, 12.1174, 12.2578, 11.9409, 12.2117, 12.143,
12.0268, 12.4167, 12.2573, 12.4035, 12.1066, 12.224, 12.1717, 12.0302, 12.1057,
12.1563, 12.4831, 11.682, 11.9222, 12.3201, 12.0099, 12.0033, 12.7423, 12.1389,
12.1197, 12.5887, 11.7591, 12.2829, 12.051, 12.148, 12.7144, 12.163, 11.7889,
11.7722, 11.9971, 12.324, 12.088, 12.4275, 12.1174, 12.0023, 11.9895, 12.1092,
12.1207, 11.9701, 12.2022, 11.8597, 12.8039, 12.1035, 12.2958, 12.0569,
12.3436, 12.1236, 12.592, 12.0457, 12.0285, 12.043, 12.3269, 12.5831, 12.1724,
12.205, 12.212, 12.0737, 12.1698, 12.2588, 11.2111, 11.2411, 11.1835, 11.2478,
11.1739, 11.2892, 11.1395, 11.584, 10.8682, 11.2591, 11.1483, 11.2247, 11.2033,
11.2734, 11.1084, 11.1538, 11.2646, 11.1343, 11.25, 11.0791, 11.2739, 11.0974,
11.3223, 11.4609, 10.9436, 11.164, 11.3055, 11.2178, 11.21, 11.2612, 11.1734,
11.0699, 11.3524, 11.664, 10.9091, 11.1899, 11.2257, 11.2024, 11.2147, 11.066,
11.3169, 11.2463, 11.1828, 11.2255, 11.1947, 11.1695, 11.2626, 11.0419,
11.1654, 11.2094, 11.209, 11.2859, 11.2087, 11.0883, 11.1187, 11.0573, 11.1202,
11.0572, 11.0862, 11.0903, 11.2019, 10.9682, 11.2574, 10.9013, 11.3857,
10.7655, 10.9657, 11.2108, 11.0705, 11.1066, 11.1095, 11.0642, 11.0989,
11.0751, 10.9216, 11.2274, 11.1034, 11.072, 11.1813, 10.9852, 11.0453, 11.1219,
11.0529, 11.1283, 10.9425, 11.194, 11.0119, 11.1392, 11.1182, 11.0519, 10.8565,
11.3081, 11.1406, 11.0347, 11.1061, 11.0658, 11.082, 11.0617, 11.2111, 11.0883}

---

# details after here :

# Sum Rules

## Check sum rule:

In[93]:= `Off[NIntegrate::slwcon]`
`Off[NIntegrate::izero]`
`Off[NIntegrate::ncvb]`
`Off[NIntegrate::inumr]`

In[97]:= `mom[iset_, ipart_: 0, q0_: 10.] :=`
`   NIntegrate[ x pdfFunction[iset, ipart, x, q0], {x, 0, 1}]`

In[98]:= `momSum[iset_, q0_: 10.] :=`
`   NIntegrate[ Sum[ x pdfFunction[iset, ipart, x, q0], {ipart, -6, 6, 1}], {x, 0, 1}]`

In[99]:= `tab1 = Table[mom[1, ipart], {ipart, -6, 6}]`

Out[99]= `{0., 0.0041174, 0.0128802, 0.0252676, 0.0323816, 0.0379873,`
`   0.456946, 0.130436, 0.257292, 0.0252676, 0.0128802, 0.0041174, 0.}`

In[100]:= `{momSum[1], Plus @@ tab1}`

Out[100]= `{0.999573, 0.999573}`

In[101]:= `{Table[pdfFlavor[i], {i, -6, 6}], tab1} // Transpose // TableForm`

Out[101]//TableForm=
```
tbar        0.
bbar        0.0041174
cbar        0.0128802
sbar        0.0252676
ubar        0.0323816
dbar        0.0379873
gluon       0.456946
down        0.130436
up          0.257292
strange     0.0252676
charm       0.0128802
bottom      0.0041174
top         0.
```

In[102]:= `tab2 = Table[mom[iset, ipart], {ipart, -6, 6}, {iset, 1, 3}]`

Out[102]= `{{0., 0., 0.}, {0.0041174, 0.00411982, 0.00411517},`
`   {0.0128802, 0.0128898, 0.0128713}, {0.0252676, 0.0249226, 0.0255864},`
`   {0.0323816, 0.0318319, 0.0328893}, {0.0379873, 0.0372761, 0.0386445},`
`   {0.456946, 0.457206, 0.456707}, {0.130436, 0.130592, 0.13029},`
`   {0.257292, 0.258801, 0.255896}, {0.0252676, 0.0249226, 0.0255864},`
`   {0.0128802, 0.0128898, 0.0128713}, {0.0041174, 0.00411982, 0.00411517}, {0., 0., 0.}}`

In[103]:= `100 * tab2  // Transpose //`
`   TableForm[#, TableHeadings → {Range[Length[tab2]], pdfFlavor /@ Range[-6, 6]}] &`

Out[103]//TableForm=

|   | tbar | bbar | cbar | sbar | ubar | dbar | gluon | down |
|---|------|------|------|------|------|------|-------|------|
| 1 | 0. | 0.41174 | 1.28802 | 2.52676 | 3.23816 | 3.79873 | 45.6946 | 13.043 |
| 2 | 0. | 0.411982 | 1.28898 | 2.49226 | 3.18319 | 3.72761 | 45.7206 | 13.059 |
| 3 | 0. | 0.411517 | 1.28713 | 2.55864 | 3.28893 | 3.86445 | 45.6707 | 13.029 |

# Plot PDFs

In[104]:= `q0 = 100.;`
`iset0 = 1;`
`iParton0 = 0;`

In[107]:= `fullSetList = {ct10, mstw, nnpdf, ct10pds, cteq66};`
`setList = First /@ fullSetList`

Out[108]= `{1, 54, 95, 196, 249}`

## Plot flavors of a single PDF

In[109]:= `Plot[`
`  Table[ x pdf[iset0, iPart, x, q0], {iPart, -5, 5}] // Evaluate`
`  , {x, 10^-3, 1}]`

Out[109]=
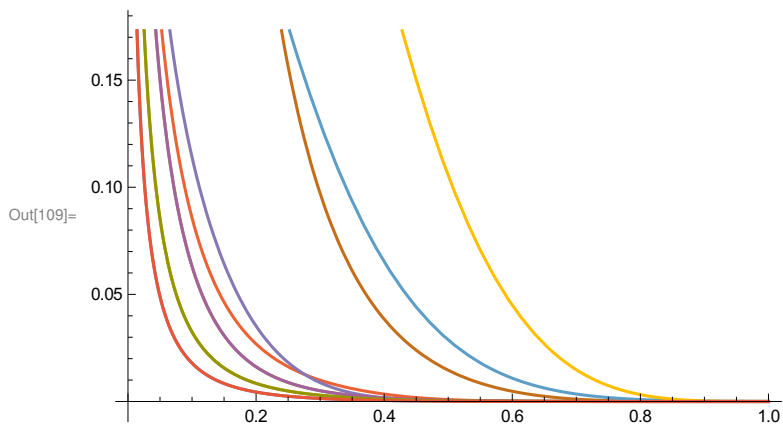
In[110]:= `LogLinearPlot[`
`  Table[ x pdf[iset0, iPart, x, q0], {iPart, -5, 5}] // Evaluate`
`  , {x, 10^-3, 1}]`

Out[110]=
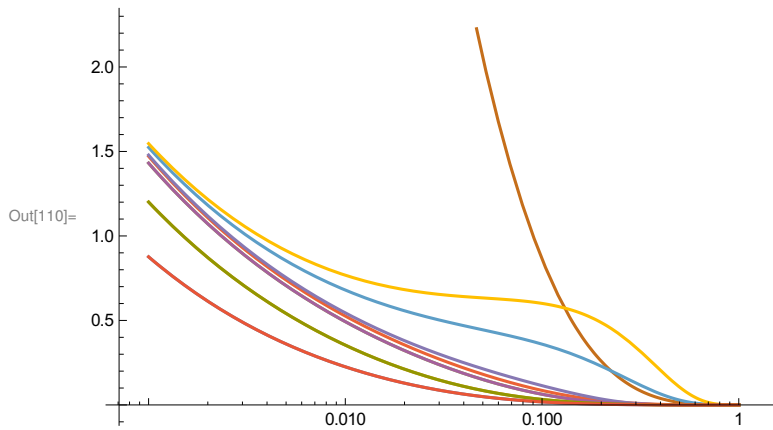


In[111]:= `LogLogPlot[`
`  Table[ x pdf[iset0, iPart, x, q0], {iPart, -5, 5}] // Evaluate`
`  , {x, 10^-3, 1}]`

Out[111]=
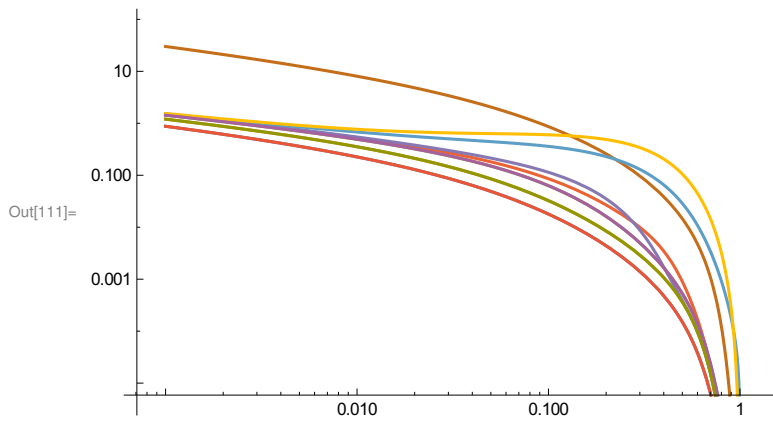


## Plot single flavor of multiple PDF

In[112]:= `Do[`
`  LogLinearPlot[`
`    Table[ x pdf[setList[[i]], ipart, x, q0], {i, 1, Length[setList]}] // Evaluate`
`    , {x, 10^-4, 1}, PlotLabel → pdfFlavor[ipart]]  // Print`
`  , {ipart, 0, 5}]`

gluon

down

up

strange



charm



bottom
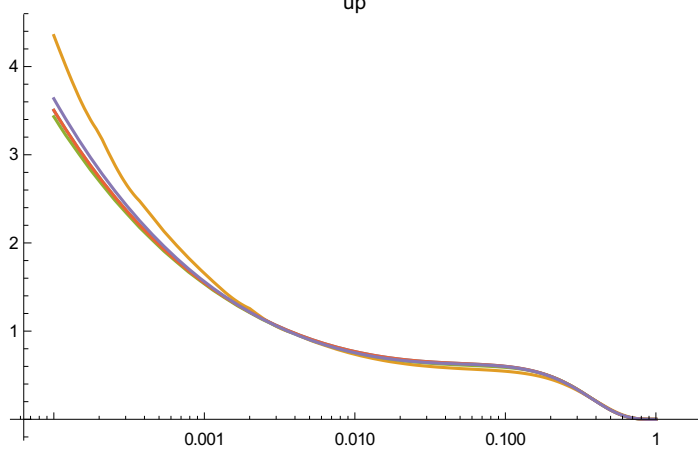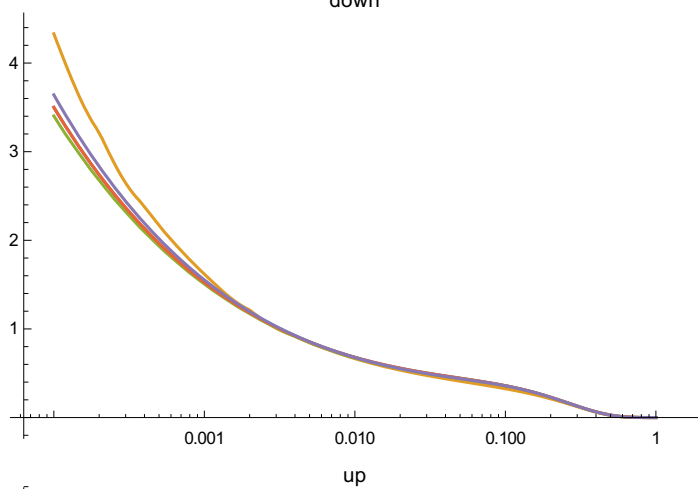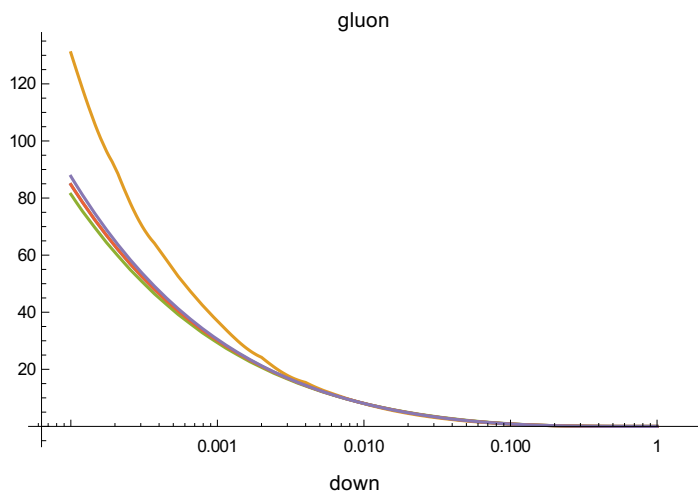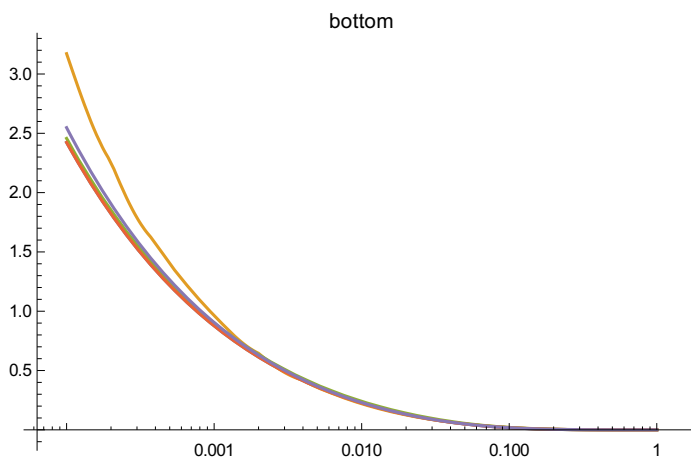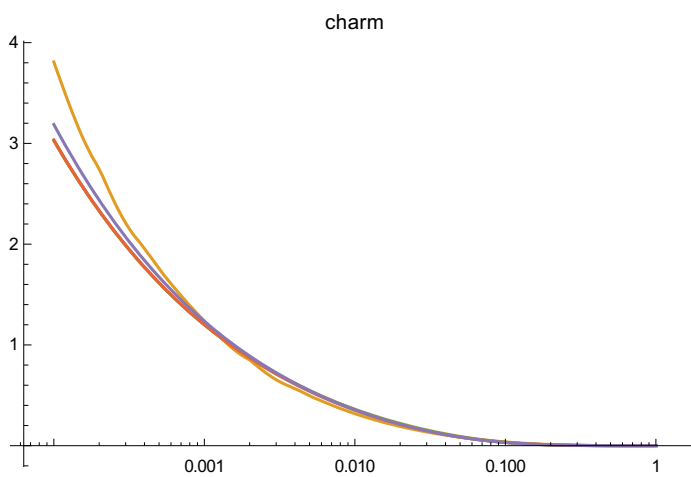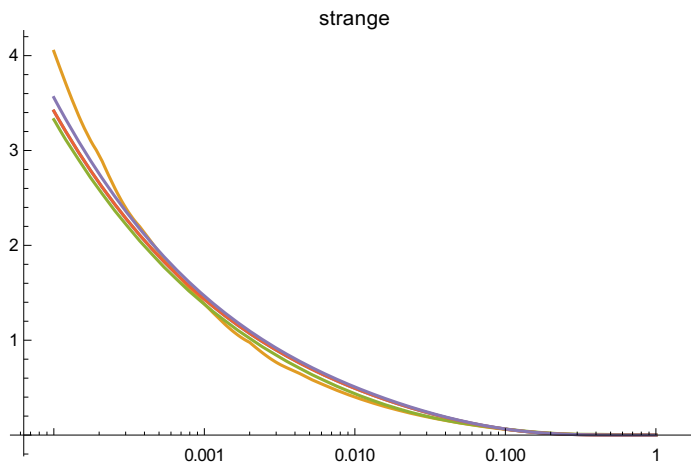
## Plot Ratios of single flavor of  multiple PDF

In[113]:= **pdfSetXpower[1]**

**Do[**
  **LogLinearPlot[**
    **Table[** $\dfrac{\text{pdf}\big[\text{setList}[[i]], \text{ipart}, x, q0\big]}{\text{pdf}\big[\text{setList}[[1]], \text{ipart}, x, q0\big]}$ **, {i, 1, Length[setList]}] // Evaluate**
    **, {x, 10^-4, 1}, PlotLabel → pdfFlavor[ipart]]  // Print**
  **, {ipart, 0, 5}]**

ManeParse cubic interpolation will be used.

The x-power of the interpolation is set to 1

up



strange



charm

bottom
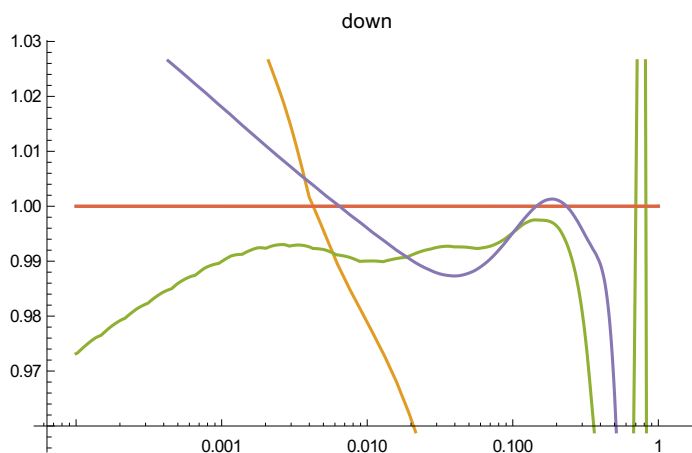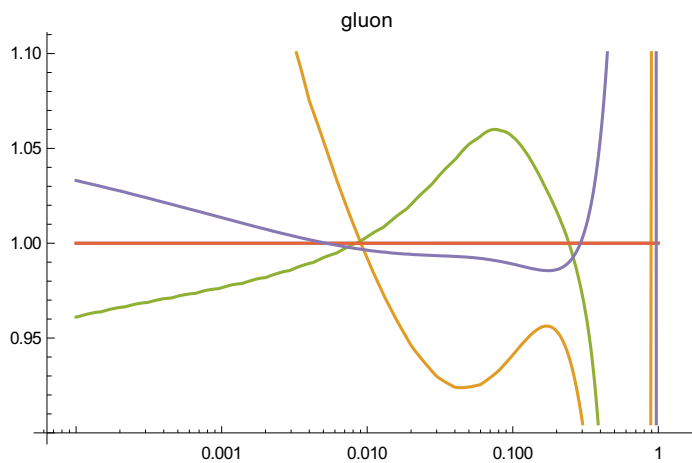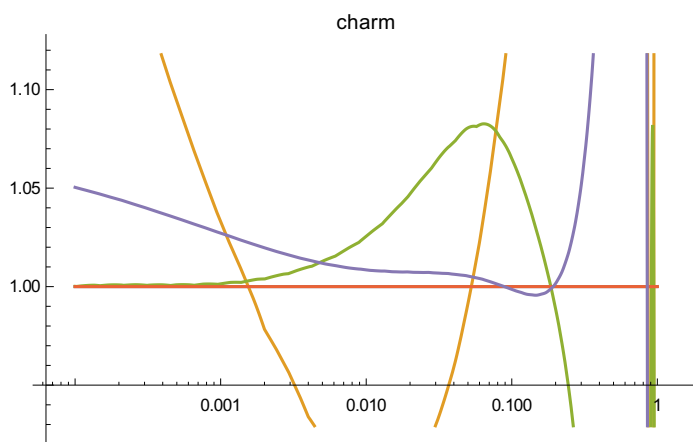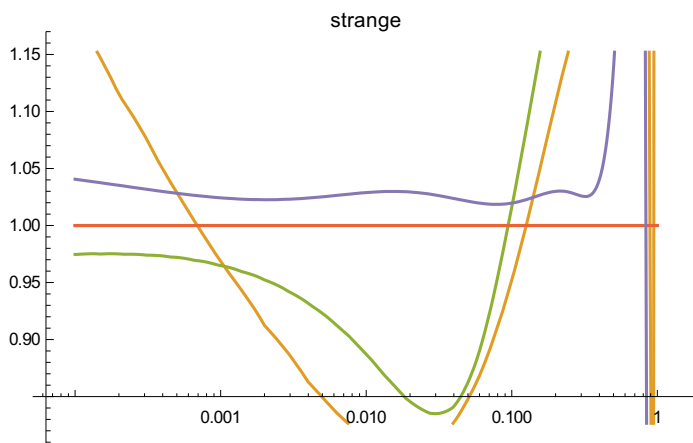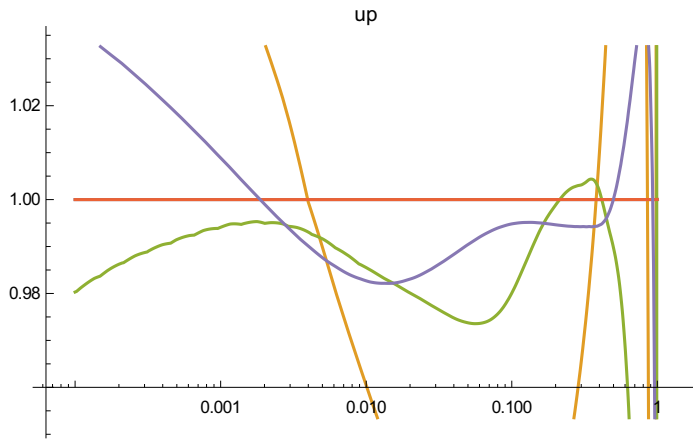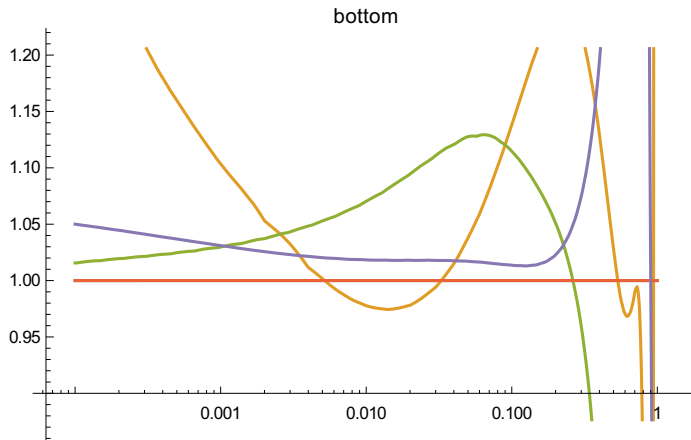


## Speed Test:

In[115]:= **pdfSetInterpolator["MMA"]**

Default Mathematica interpolator will be used.

In[116]:= **fullSetList = {ct10, mstw, nnpdf, ct10pds, cteq66};**
**setList = First /@ fullSetList**

Out[117]= {1, 54, 95, 196, 249}

In[118]:= **q0 = 10.;**
**Do[**
 **Print["iset =", setList[[i]]];**
 **Table[pdf[setList[[i]], RandomInteger[{-5, 5}], RandomReal[], q0], {j, 1000}] //**
  **Timing // First // Print;**
 **, {i, 1, Length[setList]}]**

iset =1

0.472

iset =54

0.376

iset =95

0.468

iset =196

0.468

iset =249

0.464

# Error PDF w/ Hessian sets

In[120]:= `xlist = Table[10.^i, {i, -4, 0, 1/8}] // Drop[#, -1] &`

Out[120]= {0.0001, 0.000133352, 0.000177828, 0.000237137, 0.000316228, 0.000421697,
0.000562341, 0.000749894, 0.001, 0.00133352, 0.00177828, 0.00237137,
0.00316228, 0.00421697, 0.00562341, 0.00749894, 0.01, 0.0133352,
0.0177828, 0.0237137, 0.0316228, 0.0421697, 0.0562341, 0.0749894, 0.1,
0.133352, 0.177828, 0.237137, 0.316228, 0.421697, 0.562341, 0.749894}

In[121]:= `pdf[cteq66, 0, 0.1, 10.]`

Out[121]= {11.0883, 11.1187, 11.0573, 11.1202, 11.0572, 11.0862, 11.0903, 11.2019, 10.9682,
11.2574, 10.9013, 11.3857, 10.7655, 10.9657, 11.2108, 11.0705, 11.1066, 11.1095,
11.0642, 11.0989, 11.0751, 10.9216, 11.2274, 11.1034, 11.072, 11.1813, 10.9852,
11.0453, 11.1219, 11.0529, 11.1283, 10.9425, 11.194, 11.0119, 11.1392, 11.1182,
11.0519, 10.8565, 11.3081, 11.1406, 11.0347, 11.1061, 11.0658, 11.082, 11.0617}

In[122]:= `? pdfHessianError`

> pdfHessianError[family,flavor,x,Q,[method]]: This function returns the PDF uncertainty
> for Hessian PDF error sets in *family*, at given momentum fraction *x* and scale *Q*.
>
> The optional input *method* defaults to "sym" for the symmetric error. You may
> also set this input to "plus" or "minus" for the positive and negative asymmetric errors.
>
> *Warning*: The function assumes that the first member of family is
> the central value PDF set followed by an even number of PDF eigenvector sets.
>
> The eigenvector sets should alternate between the plus and minus errors for each of the parameters.
>
> pdfHessianError[f[setNumber],[method]]: Will accept a
> list or function *f* of sets *setNumber* obtained over a Hessian PDF family.

In[123]:= `pdfHessianError[pdf[cteq66, 0, 0.1, 10.]]`

Out[123]= 0.520415

In[124]:= `ipart0 = 0;`
`q0 = 10.;`
`LogLinearPlot`$\left[\dfrac{\text{pdfHessianError}\left[\text{pdf}\left[\text{cteq66, ipart0, x, q0}\right]\right]}{\text{pdf}\left[\text{cteq66[[1]], ipart0, x, q0}\right]}, \{x, 10.\text{^-4, 0.7}\}\right]$
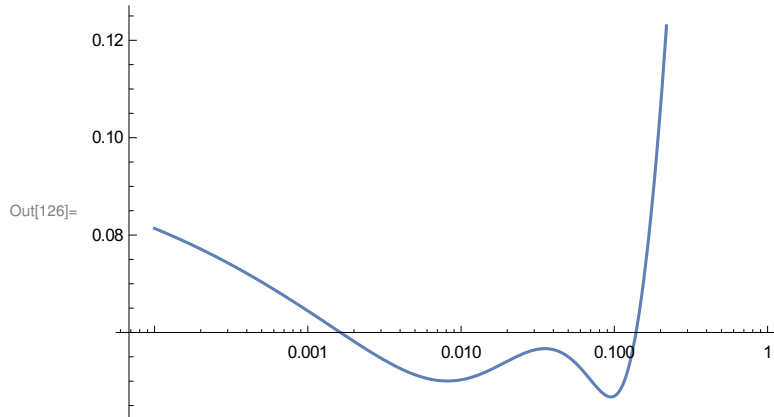
Out[126]=



In[127]:= `central = pdf`$\left[\text{cteq66[[1]], ipart0, #, q0}\right]$ `& /@ xlist`

Out[127]= {380 767., 260 692., 178 178., 121 603., 82 842.7, 56 333.9, 38 224., 25 881.3,
17 480.9, 11 775.3, 7907.2, 5292.29, 3528.32, 2341.95, 1546.03, 1014.43,
660.461, 426.012, 271.568, 170.516, 105.053, 63.1767, 36.8505, 20.691,
11.0883, 5.618, 2.66386, 1.16846, 0.467216, 0.166503, 0.0492013, 0.00729601}

In[128]:= `error = pdfHessianError`$\left[\text{pdf}\left[\text{cteq66, ipart0, #, q0}\right]\right]$ `& /@ xlist`

Out[128]= {30 982.9, 20 777.3, 13 880.2, 9238.42, 6122.95, 4040.23, 2652.71, 1733.19, 1126.33,
728.137, 468.283, 299.938, 191.603, 122.434, 78.5327, 50.7992, 33.2095,
21.9059, 14.4603, 9.41753, 5.94106, 3.55473, 1.97668, 1.01649, 0.520415,
0.321429, 0.233165, 0.164019, 0.10583, 0.062599, 0.0314524, 0.00786853}

```
In[129]:= mid = Transpose[{xlist, central}];
     up = Transpose[{xlist, central + error}];
     down = Transpose[{xlist, central - error}];

     ListLogLinearPlot[ {up, mid, down},
      Joined → True,
      Filling → {2},
      FillingStyle → LightBlue,
      PlotStyle → ({#, Blue} & /@ {Thin, Thick, Thin})
     ]
```
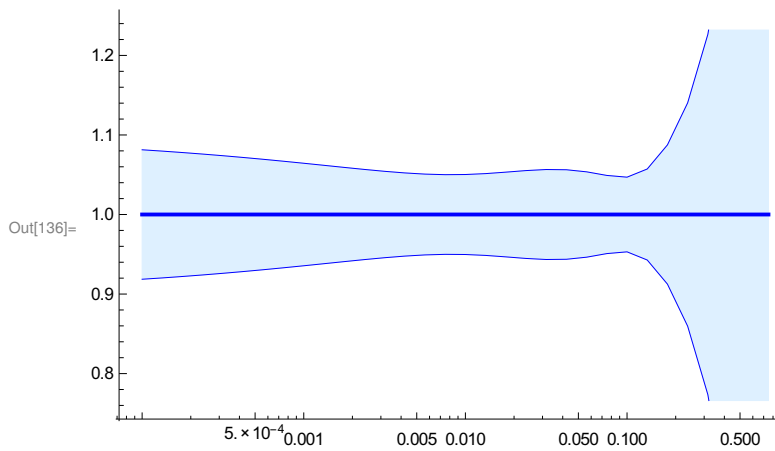
Out[132]=
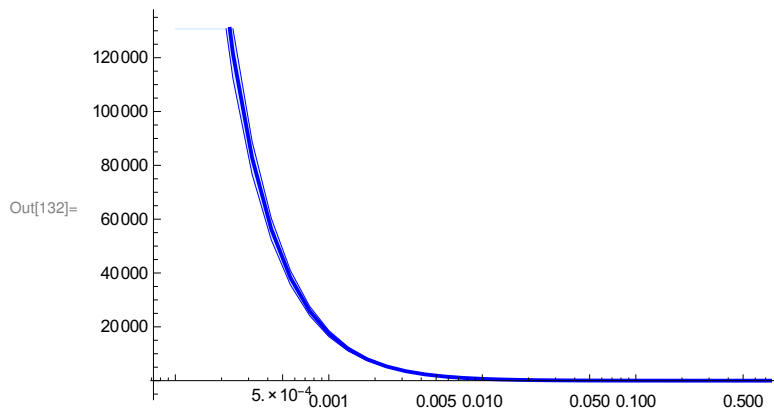
In[133]:= $\texttt{mid = Transpose}\Big[\Big\{\texttt{xlist, } \dfrac{\texttt{central}}{\texttt{central}}\Big\}\Big];$

$\texttt{up = Transpose}\Big[\Big\{\texttt{xlist, } \dfrac{\texttt{central + error}}{\texttt{central}}\Big\}\Big];$

$\texttt{down = Transpose}\Big[\Big\{\texttt{xlist, } \dfrac{\texttt{central - error}}{\texttt{central}}\Big\}\Big];$

```
ListLogLinearPlot[ {up, mid, down},
  Joined → True,
  Filling → {2},
  FillingStyle → LightBlue,
  PlotStyle → ({#, Blue} & /@ {Thin, Thick, Thin})
]
```

Out[136]=



# Error PDF w/ MC sets

In[137]:= $\texttt{xlist = Table}\big[\texttt{10.^i, } \{\texttt{i, -4, 0, 1 / 8}\}\big] \texttt{ // Drop[\#, -1] \&}$

Out[137]= {0.0001, 0.000133352, 0.000177828, 0.000237137, 0.000316228, 0.000421697,
       0.000562341, 0.000749894, 0.001, 0.00133352, 0.00177828, 0.00237137,
       0.00316228, 0.00421697, 0.00562341, 0.00749894, 0.01, 0.0133352,
       0.0177828, 0.0237137, 0.0316228, 0.0421697, 0.0562341, 0.0749894, 0.1,
       0.133352, 0.177828, 0.237137, 0.316228, 0.421697, 0.562341, 0.749894}

In[138]:= **pdf[nnpdf, 0, 0.1, 10.]**

Out[138]= {12.207, 12.5159, 12.3313, 12.6324, 11.88, 12.4589, 12.3173, 12.1461, 12.1531,
        12.5251, 12.2188, 11.5647, 12.3295, 11.6583, 12.2525, 12.4926, 12.4428,
        12.3161, 12.4497, 12.2567, 12.9039, 12.2476, 12.1758, 12.2701, 12.3423,
        12.0201, 12.3131, 12.2846, 12.1049, 12.6721, 12.6727, 12.0485, 11.939,
        11.8537, 12.2906, 12.3333, 11.9892, 12.3866, 12.1174, 12.2578, 11.9409,
        12.2117, 12.143, 12.0268, 12.4167, 12.2573, 12.4035, 12.1066, 12.224, 12.1717,
        12.0302, 12.1057, 12.1563, 12.4831, 11.682, 11.9222, 12.3201, 12.0099,
        12.0033, 12.7423, 12.1389, 12.1197, 12.5887, 11.7591, 12.2829, 12.051, 12.148,
        12.7144, 12.163, 11.7889, 11.7722, 11.9971, 12.324, 12.088, 12.4275, 12.1174,
        12.0023, 11.9895, 12.1092, 12.1207, 11.9701, 12.2022, 11.8597, 12.8039,
        12.1035, 12.2958, 12.0569, 12.3436, 12.1236, 12.592, 12.0457, 12.0285,
        12.043, 12.3269, 12.5831, 12.1724, 12.205, 12.212, 12.0737, 12.1698, 12.2588}

In[139]:= **? pdfMCError**

> pdfMCError[family,flavor,x,Q]: This function returns
>     the symmetric PDF uncertainty for Monte Carlo PDF error sets in *family*.
>
> pdfMCError[f[setNumber],[method]]: Will accept a list or
>     function *f* of sets *setNumber* obtained over a Monte Carlo PDF replica family.
>
> The optional input *method* defaults to "sym" for the symmetric error. You may
>     also set this input to "plus" or "minus" for the positive and negative asymmetric errors.

In[140]:= **pdfMCError[pdf[nnpdf, 0, 0.1, 10.]]**

Out[140]= 0.248746

In[141]:= **ipart0 = 0;**
        **q0 = 10.;**
        **(* THIS TAKES A LONG TIME**
        **LogLinearPlot[ $\frac{\text{pdfMCError[pdf[nnpdf,ipart0,x,q0]]}}{\text{pdf[nnpdf[[1]],ipart0,x,q0]}}$, {x, 10.^-4, 0.7}]**
        ***)**

In[143]:=

```
ListLogLinearPlot[
  Transpose[{xlist, (pdfMCError[pdf[nnpdf, ipart0, #, q0]] / pdf[nnpdf[[1]], ipart0, #, q0]) & /@ xlist}]
  , Joined → True]
```
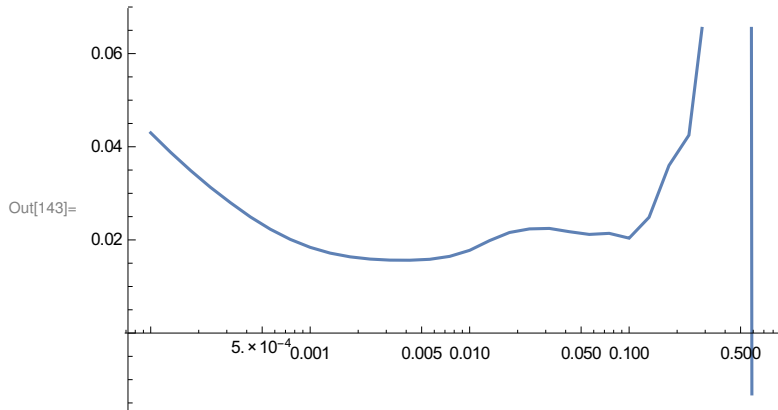
Out[143]=



In[144]:= `central = pdf[nnpdf[[1]], ipart0, #, q0] & /@ xlist`

Out[144]= {337 356., 232 042., 159 521., 109 549., 75 101.3, 51 310.2, 34 997.4, 23 834.7,
16 203., 10 979., 7414.15, 4995.76, 3356.82, 2246.81, 1493.12, 987.221,
648.563, 422.67, 272.164, 172.957, 108.225, 66.2964, 39.4227, 22.49, 12.207,
6.16079, 2.88124, 1.24194, 0.479058, 0.151288, 0.0246692, -0.00145215}

In[145]:= `error = pdfMCError[pdf[nnpdf, ipart0, #, q0]] & /@ xlist`

Out[145]= {14 502.7, 9003.64, 5567.8, 3427.03, 2102.27, 1279.47, 780.347, 479.487, 298.252,
188.497, 121.336, 79.3764, 52.5759, 35.137, 23.6488, 16.2579, 11.521,
8.39164, 5.87751, 3.86822, 2.43145, 1.443, 0.835067, 0.481493, 0.248746,
0.153142, 0.103677, 0.0527781, 0.0370578, 0.0285079, 0.0127916, 0.00411808}

In[146]:= 
```
mid = Transpose[{xlist, central}];
up = Transpose[{xlist, central + error}];
down = Transpose[{xlist, central - error}];

ListLogLinearPlot[ {up, mid, down},
 Joined → True,
 Filling → {2},
 FillingStyle → LightBlue,
 PlotStyle → ({#, Blue} & /@ {Thin, Thick, Thin})
]
```
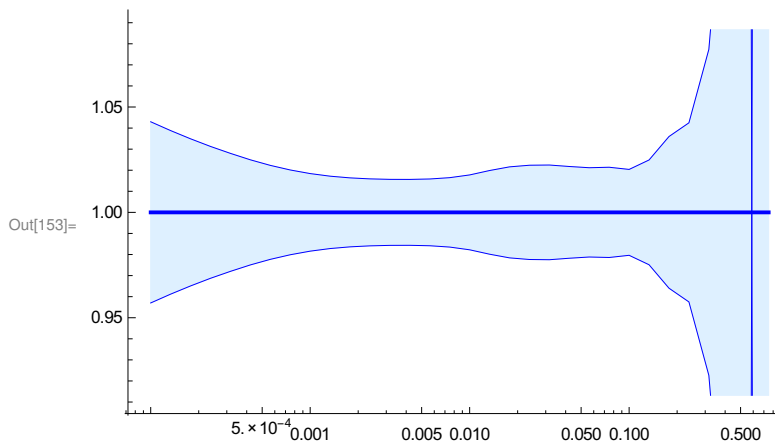
Out[149]=

In[150]:= 
```mathematica
mid = Transpose[{xlist, central/central}];

up = Transpose[{xlist, (central + error)/central}];

down = Transpose[{xlist, (central - error)/central}];

ListLogLinearPlot[ {up, mid, down},
  Joined → True,
  Filling → {2},
  FillingStyle → LightBlue,
  PlotStyle → ({#, Blue} & /@ {Thin, Thick, Thin})
 ]
```

Out[153]= 


# Luminosity
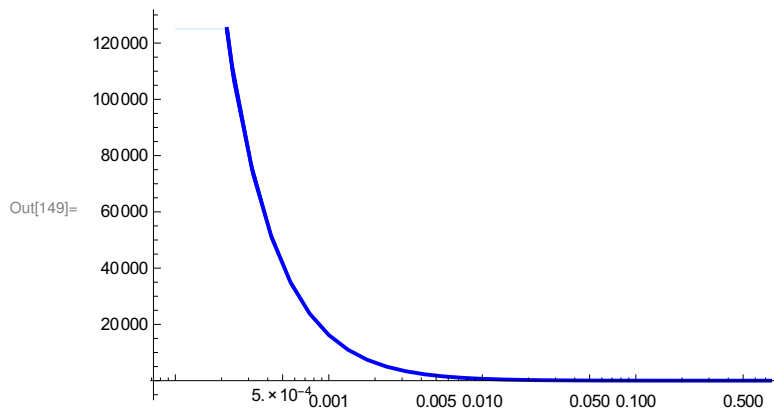
In[154]:= 
```mathematica
? pdfLuminosity
```

pdfLuminosity[setNumber,sqrtS,mX,flavor1,flavor2,[precisionGoal]]: This
    function returns the integrated parton–parton luminosity for collider energy *sqrtS* =
    $S^{1/2}$, particle mass *mX*, and PDF flavors *flavor1* and *flavor2*, for the set *setNumber*.

The numerical integral is performed with the precision goal in the
    optional parameter *precisionGoal*, which has a default value of *precisionGoal* = 3.

The parton luminosity is defined according to Eq.(46) in Campbell, Huston, Stirling, arXiv:hep–ph/0611148v1
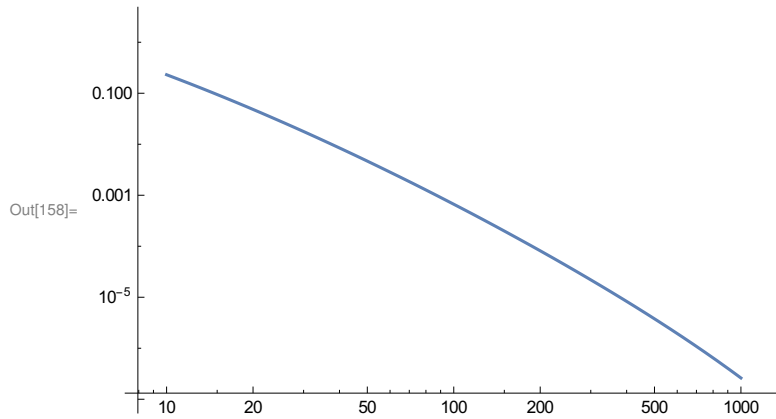
In[155]:= 

In[156]:= 
```mathematica
pdfLuminosity[1, 14 000, 80.3, 1, -2]
```

Out[156]= 0.0012558

In[157]:= `massTable = Table[10.^i, {i, 1, 3, 1 / 10}]`

Out[157]= {10., 12.5893, 15.8489, 19.9526, 25.1189, 31.6228, 39.8107,
    50.1187, 63.0957, 79.4328, 100., 125.893, 158.489, 199.526,
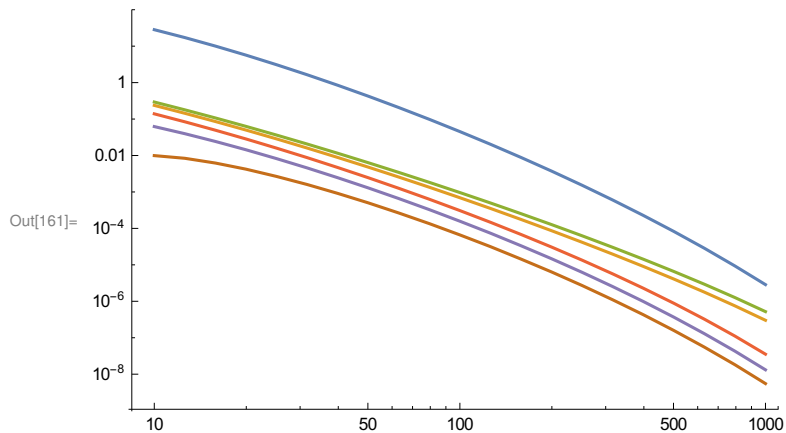    251.189, 316.228, 398.107, 501.187, 630.957, 794.328, 1000.}

In[158]:= `LogLogPlot[pdfLuminosity[1, 14 000, m, 1, -2], {m, 10., 1000}]`

Out[158]=

In[159]:= `lum[i_] :=`
    `lum[i] = Transpose[{massTable, pdfLuminosity[1, 14 000, #, i, -i] & /@ massTable}]`

In[160]:= `Table[lum[i], {i, 1, 5}];`

In[161]:= `ListLogLogPlot[Table[lum[i], {i, 0, 5}], Joined → True]`

Out[161]=

# Alpha-s

In[162]:= **? pdfAlphaS**

---

pdfAlphaS[setNumber, Q]:This function returns the value of $\alpha_S$
at hard scattering energy $Q$ when this information is available
in the .pds or .info file.

*Warning*: This function will print a text message and return
a Null value if the $\alpha_S$ information is not available.

In[163]:= **setList**

Out[163]= $\{1, 54, 95, 196, 249\}$

In[164]:= **Table$\big[\{$setList$\big[\![$i$\!]\big]$, pdfAlphaS$\big[$setList$\big[\![$i$\!]\big]$, 91.2$\big]\}$,**
       **$\{$i, 1, Length$\big[$setList$\big]\}\big]$ // TableForm**

Created pdfAlphaS for iSet = 1

1 has  1 sub-grid

Created pdfAlphaS for iSet = 54

PDF Set = 54 has  3 sub-grids

Created pdfAlphaS for iSet = 95

PDF Set = 95 has  3 sub-grids

Out[164]//TableForm=
```
1      0.117979
54     0.139384
95     0.118003
196    Null[]
249    Null[]
```

In[165]:= **pdfSetList$\big[\![$setList$\!]\big]$ // TableForm**

Out[165]//TableForm=
```
1        /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/CT10
54       /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/MSTW
95       /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/LHA/NNPD
196      /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/PDS/ct10
249      /home/egodat/Documents/ben/MMA_package/trunk/ManeParse/Demo/PDF_Sets/PDS/ctq6
```

In[166]:= `Plot[pdfAlphaS[1, q], {q, 10, 1000}]`

Out[166]=
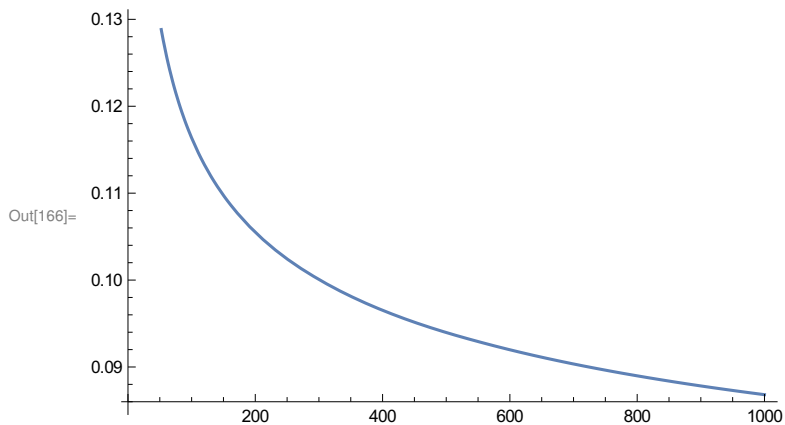
# Small x

In[167]:= `? pdfLowFunction`

> pdfLowFunction[setNumber, flavor, x, Q, [power]]: This function returns the value of the PDF as in pdfFunction, but with an extrapolation below the minimum x value that goes as $\frac{1}{x^{power}}$.
> The optional input, *power*, has a default value of power = 1.0.

In[168]:= 
```
LogLogPlot[
  Table[pdfLowFunction[1, 0, x, 100., i], {i, 0.4, 1.6, 0.2}] // Evaluate,
  {x, 10.^-15, 0.5},
  PlotRange → {Log[10^-1], Log[10^15]},
  PlotStyle → {Red, Green, Orange, Magenta, Cyan, Yellow, Blue, Purple}
]
```

Out[168]=