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## Simple Demo file to read all LHAPDF Tables:

Demonstration to show how to use LHAPDF PDF tables with ManeParse  
This is a simpler demo file that just shows the basics of loading the PDFs.

### Please cite:

ManeParse : A Mathematica reader for Parton Distribution Functions  
D.B.Clark, E.Godat, F.I.Olness  
Published in : Comput.Phys.Commun .216 (2017) 126 - 137  
e - Print : 1605.08012[hep - ph]

Fred : 19 April 2021

```
In[1]:= Clear["Global`*"];  
  
In[2]:= $Version  
  
Out[2]:= 12.1.0 for Linux x86 (64-bit) (March 14, 2020)
```

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## Set Directory

This example notebook is written with relative directories and is intended to be run within the folder extracted from the tarball.

```
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]:= NotebookDirectory [];  
here = NotebookDirectory []  
  
Out[5]:= /home/olness/Documents/NCTEQ/nCTEQ15HQ_check /  
  
In[6]:= (* If there is a problem with the Mathematica working directory,  
you can enter it manually here *)  
SetDirectory[here]  
  
Out[6]:= /home/olness/Documents/NCTEQ/nCTEQ15HQ_check  
  
In[7]:= (* This shows what files should be in this main directory *)  
FileNames["*", here] // dropPath  
  
Out[7]:= {LHAPDF, MP_packages, Read_nCTEQ15HQ.nb}
```

## Setup Other Directories

```

In[10]:= dirPackages = here <> "./MP_packages ";
         FileNames["*", dirPackages] // dropPath

Out[11]= {pdfCalc.m, pdfErrors.m, pdfParseCTEQ.m, pdfParseLHA.m, README_V05.TXT}

In[15]:= dirFilesLHA = "./LHAPDF";
         dirList = Select[FileNames["nCTEQ15HQ*", dirFilesLHA], DirectoryQ];
         dirList // dropPath

Out[17]= {nCTEQ15HQ_108_54, nCTEQ15HQ_1_1, nCTEQ15HQ_119_59, nCTEQ15HQ_12_6, nCTEQ15HQ_131_54,
          nCTEQ15HQ_14_7, nCTEQ15HQ_16_8, nCTEQ15HQ_184_74, nCTEQ15HQ_197_79, nCTEQ15HQ_197_98,
          nCTEQ15HQ_207_103, nCTEQ15HQ_208_82, nCTEQ15HQ_2_1, nCTEQ15HQ_27_13,
          nCTEQ15HQ_3_1, nCTEQ15HQ_40_20, nCTEQ15HQ_4_2, nCTEQ15HQ_56_26, nCTEQ15HQ_56_28,
          nCTEQ15HQ_6_3, nCTEQ15HQ_64_32, nCTEQ15HQ_7_3, nCTEQ15HQ_84_42, nCTEQ15HQ_9_4,
          nCTEQ15HQ_FullNuc_108_54, nCTEQ15HQ_FullNuc_1_1, nCTEQ15HQ_FullNuc_119_59,
          nCTEQ15HQ_FullNuc_12_6, nCTEQ15HQ_FullNuc_131_54, nCTEQ15HQ_FullNuc_14_7,
          nCTEQ15HQ_FullNuc_16_8, nCTEQ15HQ_FullNuc_184_74, nCTEQ15HQ_FullNuc_197_79,
          nCTEQ15HQ_FullNuc_197_98, nCTEQ15HQ_FullNuc_207_103, nCTEQ15HQ_FullNuc_208_82,
          nCTEQ15HQ_FullNuc_2_1, nCTEQ15HQ_FullNuc_27_13, nCTEQ15HQ_FullNuc_3_1,
          nCTEQ15HQ_FullNuc_40_20, nCTEQ15HQ_FullNuc_4_2, nCTEQ15HQ_FullNuc_56_26,
          nCTEQ15HQ_FullNuc_56_28, nCTEQ15HQ_FullNuc_6_3, nCTEQ15HQ_FullNuc_64_32,
          nCTEQ15HQ_FullNuc_7_3, nCTEQ15HQ_FullNuc_84_42, nCTEQ15HQ_FullNuc_9_4}

In[18]:= Length[dirList]

Out[18]= 48

```

# Load the package

Loading the main package provides many useful functions

```
In[19]:= Get[dirPackages <> "/pdfParseLHA .m"]

Version : pdfCalc 5.0
Version : ManeParse 5.0: April 2021
- Required Package : pdfCalc --Loaded -

=====

- pdfParseLHA -
Version : 5.0: April 2021
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[20]:= Get[dirPackages <> "/pdfParseCTEQ .m"]

=====

- pdfParseCTEQ -
Version : 5.0: April 2021
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*

=====
```

```
In[21]:= Get[dirPackages <> "/pdfErrors.m"]
```

```
=====
```

```
- pdfErrors -
```

```
Version : 5.0; April 2021
```

```
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*
```

```
=====
```

All functions begin with 'pdf'. To obtain a list of available functions, type the command '?pdf\*'.

```
In[22]:= ? pdf*
```

```
Out[22]=
```

#### ▼ pdfCalc`

pdfAlphaS

pdfFlavor

pdfFunction

pdfFunctionX

pdfGetInfo

pdfGetQlist

pdfGetXlist

pdfLowFunction

pdfLuminosity

pdfNumQpartition

pdfReset

pdfSetInterpolator

pdfSetList

pdfSetListDisplay

pdfSetXpower

pdfXmin

#### ▼ pdfErrors`

pdfError

pdfFamilyFunction

pdfHessianCorrelation

pdfHessianError

pdfMCCentral

pdfMCCentralInterval

pdfMCCorrelation

pdfMCErrors

#### ▼ pdfParseCTEQ`

pdfFamilyParseCTEQ

pdfParseCTEQ

#### ▼ pdfParseLHA`

pdfFamilyParseLHA

pdfParseLHA

## Read All PDFs but ONLY central PDFs

```

In[23]:= pdfReset[]
Do[
  datafile = FileNames["*_0000.dat", dirList[[i]]] // First;
  infofile = FileNames["*info", dirList[[i]]] // First;
  pdfParseLHA[infofile, datafile] // Print;
  datafile = "";
  infofile = "";
  Print[" i = ", i];
  , {i, 1, Length[dirList]}]

Default Mathematica interpolator will be used.

All internal variables have been reset.

Successfully read ./LHAPDF/nCTEQ15HQ_108_54/nCTEQ15HQ_108_54.info.
Successfully read ./LHAPDF/nCTEQ15HQ_108_54/nCTEQ15HQ_108_54_0000.dat.
1
  i = 1
Successfully read ./LHAPDF/nCTEQ15HQ_1_1/nCTEQ15HQ_1_1.info.
Successfully read ./LHAPDF/nCTEQ15HQ_1_1/nCTEQ15HQ_1_1_0000.dat.
2
  i = 2
Successfully read ./LHAPDF/nCTEQ15HQ_119_59/nCTEQ15HQ_119_59.info.
Successfully read ./LHAPDF/nCTEQ15HQ_119_59/nCTEQ15HQ_119_59_0000.dat.
3
  i = 3
Successfully read ./LHAPDF/nCTEQ15HQ_12_6/nCTEQ15HQ_12_6.info.
Successfully read ./LHAPDF/nCTEQ15HQ_12_6/nCTEQ15HQ_12_6_0000.dat.
4
  i = 4
Successfully read ./LHAPDF/nCTEQ15HQ_131_54/nCTEQ15HQ_131_54.info.
Successfully read ./LHAPDF/nCTEQ15HQ_131_54/nCTEQ15HQ_131_54_0000.dat.
5
  i = 5
Successfully read ./LHAPDF/nCTEQ15HQ_14_7/nCTEQ15HQ_14_7.info.
Successfully read ./LHAPDF/nCTEQ15HQ_14_7/nCTEQ15HQ_14_7_0000.dat.
6
  i = 6

```

```

Successfully read ./LHAPDF/nCTEQ15HQ_16_8/nCTEQ15HQ_16_8.info.
Successfully read ./LHAPDF/nCTEQ15HQ_16_8/nCTEQ15HQ_16_8_0000.dat.
7
i = 7
Successfully read ./LHAPDF/nCTEQ15HQ_184_74/nCTEQ15HQ_184_74.info.
Successfully read ./LHAPDF/nCTEQ15HQ_184_74/nCTEQ15HQ_184_74_0000.dat.
8
i = 8
Successfully read ./LHAPDF/nCTEQ15HQ_197_79/nCTEQ15HQ_197_79.info.
Successfully read ./LHAPDF/nCTEQ15HQ_197_79/nCTEQ15HQ_197_79_0000.dat.
9
i = 9
Successfully read ./LHAPDF/nCTEQ15HQ_197_98/nCTEQ15HQ_197_98.info.
Successfully read ./LHAPDF/nCTEQ15HQ_197_98/nCTEQ15HQ_197_98_0000.dat.
10
i = 10
Successfully read ./LHAPDF/nCTEQ15HQ_207_103/nCTEQ15HQ_207_103.info.
Successfully read ./LHAPDF/nCTEQ15HQ_207_103/nCTEQ15HQ_207_103_0000.dat.
11
i = 11
Successfully read ./LHAPDF/nCTEQ15HQ_208_82/nCTEQ15HQ_208_82.info.
Successfully read ./LHAPDF/nCTEQ15HQ_208_82/nCTEQ15HQ_208_82_0000.dat.
12
i = 12
Successfully read ./LHAPDF/nCTEQ15HQ_2_1/nCTEQ15HQ_2_1.info.
Successfully read ./LHAPDF/nCTEQ15HQ_2_1/nCTEQ15HQ_2_1_0000.dat.
13
i = 13
Successfully read ./LHAPDF/nCTEQ15HQ_27_13/nCTEQ15HQ_27_13.info.
Successfully read ./LHAPDF/nCTEQ15HQ_27_13/nCTEQ15HQ_27_13_0000.dat.
14
i = 14
Successfully read ./LHAPDF/nCTEQ15HQ_3_1/nCTEQ15HQ_3_1.info.
Successfully read ./LHAPDF/nCTEQ15HQ_3_1/nCTEQ15HQ_3_1_0000.dat.
15
i = 15

```

```

Successfully read ./LHAPDF/nCTEQ15HQ_40_20/nCTEQ15HQ_40_20.info.
Successfully read ./LHAPDF/nCTEQ15HQ_40_20/nCTEQ15HQ_40_20_0000.dat.
16
  i = 16
Successfully read ./LHAPDF/nCTEQ15HQ_4_2/nCTEQ15HQ_4_2.info.
Successfully read ./LHAPDF/nCTEQ15HQ_4_2/nCTEQ15HQ_4_2_0000.dat.
17
  i = 17
Successfully read ./LHAPDF/nCTEQ15HQ_56_26/nCTEQ15HQ_56_26.info.
Successfully read ./LHAPDF/nCTEQ15HQ_56_26/nCTEQ15HQ_56_26_0000.dat.
18
  i = 18
Successfully read ./LHAPDF/nCTEQ15HQ_56_28/nCTEQ15HQ_56_28.info.
Successfully read ./LHAPDF/nCTEQ15HQ_56_28/nCTEQ15HQ_56_28_0000.dat.
19
  i = 19
Successfully read ./LHAPDF/nCTEQ15HQ_6_3/nCTEQ15HQ_6_3.info.
Successfully read ./LHAPDF/nCTEQ15HQ_6_3/nCTEQ15HQ_6_3_0000.dat.
20
  i = 20
Successfully read ./LHAPDF/nCTEQ15HQ_64_32/nCTEQ15HQ_64_32.info.
Successfully read ./LHAPDF/nCTEQ15HQ_64_32/nCTEQ15HQ_64_32_0000.dat.
21
  i = 21
Successfully read ./LHAPDF/nCTEQ15HQ_7_3/nCTEQ15HQ_7_3.info.
Successfully read ./LHAPDF/nCTEQ15HQ_7_3/nCTEQ15HQ_7_3_0000.dat.
22
  i = 22
Successfully read ./LHAPDF/nCTEQ15HQ_84_42/nCTEQ15HQ_84_42.info.
Successfully read ./LHAPDF/nCTEQ15HQ_84_42/nCTEQ15HQ_84_42_0000.dat.
23
  i = 23
Successfully read ./LHAPDF/nCTEQ15HQ_9_4/nCTEQ15HQ_9_4.info.
Successfully read ./LHAPDF/nCTEQ15HQ_9_4/nCTEQ15HQ_9_4_0000.dat.
24
  i = 24

```

```

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _108_54/nCTEQ15HQ_FullNuc _108_54.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _108_54/nCTEQ15HQ_FullNuc _108_54_0000.dat.
25
i = 25
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _1_1/nCTEQ15HQ_FullNuc _1_1.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _1_1/nCTEQ15HQ_FullNuc _1_1_0000.dat.
26
i = 26
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _119_59/nCTEQ15HQ_FullNuc _119_59.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _119_59/nCTEQ15HQ_FullNuc _119_59_0000.dat.
27
i = 27
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _12_6/nCTEQ15HQ_FullNuc _12_6.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _12_6/nCTEQ15HQ_FullNuc _12_6_0000.dat.
28
i = 28
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _131_54/nCTEQ15HQ_FullNuc _131_54.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _131_54/nCTEQ15HQ_FullNuc _131_54_0000.dat.
29
i = 29
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _14_7/nCTEQ15HQ_FullNuc _14_7.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _14_7/nCTEQ15HQ_FullNuc _14_7_0000.dat.
30
i = 30
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _16_8/nCTEQ15HQ_FullNuc _16_8.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _16_8/nCTEQ15HQ_FullNuc _16_8_0000.dat.
31
i = 31
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _184_74/nCTEQ15HQ_FullNuc _184_74.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _184_74/nCTEQ15HQ_FullNuc _184_74_0000.dat.
32
i = 32
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _197_79/nCTEQ15HQ_FullNuc _197_79.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _197_79/nCTEQ15HQ_FullNuc _197_79_0000.dat.
33
i = 33

```



```

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _197_98/nCTEQ15HQ_FullNuc _197_98.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _197_98/nCTEQ15HQ_FullNuc _197_98_0000.dat.
34
i = 34
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _207_103/nCTEQ15HQ_FullNuc _207_103.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _207_103/nCTEQ15HQ_FullNuc _207_103_0000.dat.
35
i = 35
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _208_82/nCTEQ15HQ_FullNuc _208_82.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _208_82/nCTEQ15HQ_FullNuc _208_82_0000.dat.
36
i = 36
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _2_1/nCTEQ15HQ_FullNuc _2_1.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _2_1/nCTEQ15HQ_FullNuc _2_1_0000.dat.
37
i = 37
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _27_13/nCTEQ15HQ_FullNuc _27_13.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _27_13/nCTEQ15HQ_FullNuc _27_13_0000.dat.
38
i = 38
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _3_1/nCTEQ15HQ_FullNuc _3_1.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _3_1/nCTEQ15HQ_FullNuc _3_1_0000.dat.
39
i = 39
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _40_20/nCTEQ15HQ_FullNuc _40_20.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _40_20/nCTEQ15HQ_FullNuc _40_20_0000.dat.
40
i = 40
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _4_2/nCTEQ15HQ_FullNuc _4_2.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _4_2/nCTEQ15HQ_FullNuc _4_2_0000.dat.
41
i = 41
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _56_26/nCTEQ15HQ_FullNuc _56_26.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _56_26/nCTEQ15HQ_FullNuc _56_26_0000.dat.
42
i = 42

```

```

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _56_28/nCTEQ15HQ_FullNuc _56_28.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _56_28/nCTEQ15HQ_FullNuc _56_28_0000.dat.
43
i = 43
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _6_3/nCTEQ15HQ_FullNuc _6_3.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _6_3/nCTEQ15HQ_FullNuc _6_3_0000.dat.
44
i = 44
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _64_32/nCTEQ15HQ_FullNuc _64_32.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _64_32/nCTEQ15HQ_FullNuc _64_32_0000.dat.
45
i = 45
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _7_3/nCTEQ15HQ_FullNuc _7_3.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _7_3/nCTEQ15HQ_FullNuc _7_3_0000.dat.
46
i = 46
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _84_42/nCTEQ15HQ_FullNuc _84_42.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _84_42/nCTEQ15HQ_FullNuc _84_42_0000.dat.
47
i = 47
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _9_4/nCTEQ15HQ_FullNuc _9_4.info.
Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _9_4/nCTEQ15HQ_FullNuc _9_4_0000.dat.
48
i = 48

```

```
In[25]:= Length[dirList]
```

```
Out[25]= 48
```

```
In[26]:= pdfSetListDisplay []
```

Set Number	File Name	Max Flavors	Valance Flavors
1	./LHAPDF/nCTEQ15HQ_108_54/nCTEQ15HQ_108_54_0000.dat	5	n/a
2	./LHAPDF/nCTEQ15HQ_1_1/nCTEQ15HQ_1_1_0000.dat	5	n/a
3	./LHAPDF/nCTEQ15HQ_119_59/nCTEQ15HQ_119_59_0000.dat	5	n/a
4	./LHAPDF/nCTEQ15HQ_12_6/nCTEQ15HQ_12_6_0000.dat	5	n/a

5	./LHAPDF/nCTEQ15HQ_131_54/nCTEQ15HQ_131_54_0000.dat	5	n/a
6	./LHAPDF/nCTEQ15HQ_14_7/nCTEQ15HQ_14_7_0000.dat	5	n/a
7	./LHAPDF/nCTEQ15HQ_16_8/nCTEQ15HQ_16_8_0000.dat	5	n/a
8	./LHAPDF/nCTEQ15HQ_184_74/nCTEQ15HQ_184_74_0000.dat	5	n/a
9	./LHAPDF/nCTEQ15HQ_197_79/nCTEQ15HQ_197_79_0000.dat	5	n/a
10	./LHAPDF/nCTEQ15HQ_197_98/nCTEQ15HQ_197_98_0000.dat	5	n/a
11	./LHAPDF/nCTEQ15HQ_207_103/nCTEQ15HQ_207_103_0000.dat	5	n/a
12	./LHAPDF/nCTEQ15HQ_208_82/nCTEQ15HQ_208_82_0000.dat	5	n/a
13	./LHAPDF/nCTEQ15HQ_2_1/nCTEQ15HQ_2_1_0000.dat	5	n/a
14	./LHAPDF/nCTEQ15HQ_27_13/nCTEQ15HQ_27_13_0000.dat	5	n/a
15	./LHAPDF/nCTEQ15HQ_3_1/nCTEQ15HQ_3_1_0000.dat	5	n/a
16	./LHAPDF/nCTEQ15HQ_40_20/nCTEQ15HQ_40_20_0000.dat	5	n/a
17	./LHAPDF/nCTEQ15HQ_4_2/nCTEQ15HQ_4_2_0000.dat	5	n/a
18	./LHAPDF/nCTEQ15HQ_56_26/nCTEQ15HQ_56_26_0000.dat	5	n/a
19	./LHAPDF/nCTEQ15HQ_56_28/nCTEQ15HQ_56_28_0000.dat	5	n/a
20	./LHAPDF/nCTEQ15HQ_6_3/nCTEQ15HQ_6_3_0000.dat	5	n/a
21	./LHAPDF/nCTEQ15HQ_64_32/nCTEQ15HQ_64_32_0000.dat	5	n/a
22	./LHAPDF/nCTEQ15HQ_7_3/nCTEQ15HQ_7_3_0000.dat	5	n/a
23	./LHAPDF/nCTEQ15HQ_84_42/nCTEQ15HQ_84_42_0000.dat	5	n/a
24	./LHAPDF/nCTEQ15HQ_9_4/nCTEQ15HQ_9_4_0000.dat	5	n/a

25	./LHAPDF/nCTEQ15HQ_FullNuc_108_54/ nCTEQ15HQ_FullNuc_108_54_0000.dat	5	n/a
26	./LHAPDF/nCTEQ15HQ_FullNuc_1_1/ nCTEQ15HQ_FullNuc_1_1_0000.dat	5	n/a
27	./LHAPDF/nCTEQ15HQ_FullNuc_119_59/ nCTEQ15HQ_FullNuc_119_59_0000.dat	5	n/a
28	./LHAPDF/nCTEQ15HQ_FullNuc_12_6/ nCTEQ15HQ_FullNuc_12_6_0000.dat	5	n/a
29	./LHAPDF/nCTEQ15HQ_FullNuc_131_54/ nCTEQ15HQ_FullNuc_131_54_0000.dat	5	n/a
30	./LHAPDF/nCTEQ15HQ_FullNuc_14_7/ nCTEQ15HQ_FullNuc_14_7_0000.dat	5	n/a
31	./LHAPDF/nCTEQ15HQ_FullNuc_16_8/ nCTEQ15HQ_FullNuc_16_8_0000.dat	5	n/a
32	./LHAPDF/nCTEQ15HQ_FullNuc_184_74/ nCTEQ15HQ_FullNuc_184_74_0000.dat	5	n/a
33	./LHAPDF/nCTEQ15HQ_FullNuc_197_79/ nCTEQ15HQ_FullNuc_197_79_0000.dat	5	n/a
34	./LHAPDF/nCTEQ15HQ_FullNuc_197_98/ nCTEQ15HQ_FullNuc_197_98_0000.dat	5	n/a
35	./LHAPDF/nCTEQ15HQ_FullNuc_207_103/ nCTEQ15HQ_FullNuc_207_103_0000.dat	5	n/a
36	./LHAPDF/nCTEQ15HQ_FullNuc_208_82/ nCTEQ15HQ_FullNuc_208_82_0000.dat	5	n/a
37	./LHAPDF/nCTEQ15HQ_FullNuc_2_1/ nCTEQ15HQ_FullNuc_2_1_0000.dat	5	n/a
38	./LHAPDF/nCTEQ15HQ_FullNuc_27_13/ nCTEQ15HQ_FullNuc_27_13_0000.dat	5	n/a
39	./LHAPDF/nCTEQ15HQ_FullNuc_3_1/ nCTEQ15HQ_FullNuc_3_1_0000.dat	5	n/a
40	./LHAPDF/nCTEQ15HQ_FullNuc_40_20/ nCTEQ15HQ_FullNuc_40_20_0000.dat	5	n/a
41	./LHAPDF/nCTEQ15HQ_FullNuc_4_2/ nCTEQ15HQ_FullNuc_4_2_0000.dat	5	n/a
42	./LHAPDF/nCTEQ15HQ_FullNuc_56_26/ nCTEQ15HQ_FullNuc_56_26_0000.dat	5	n/a
43	./LHAPDF/nCTEQ15HQ_FullNuc_56_28/ nCTEQ15HQ_FullNuc_56_28_0000.dat	5	n/a
44	./LHAPDF/nCTEQ15HQ_FullNuc_6_3/ nCTEQ15HQ_FullNuc_6_3_0000.dat	5	n/a

45	./LHAPDF/nCTEQ15HQ_FullNuc_64_32/ nCTEQ15HQ_FullNuc_64_32_0000.dat	5	n/a
46	./LHAPDF/nCTEQ15HQ_FullNuc_7_3/ nCTEQ15HQ_FullNuc_7_3_0000.dat	5	n/a
47	./LHAPDF/nCTEQ15HQ_FullNuc_84_42/ nCTEQ15HQ_FullNuc_84_42_0000.dat	5	n/a
48	./LHAPDF/nCTEQ15HQ_FullNuc_9_4/ nCTEQ15HQ_FullNuc_9_4_0000.dat	5	n/a

## Define PDF

```

In[27]:= pdf[x_] := pdfFunction[x]
          SetAttributes[pdf, Listable]

In[29]:= Clear[dropPath]

In[30]:= (* This just drops the leading path
          info to make the list of files easier to read *)
          (* dropPath=((Take[#, -1]&/@(FileNameSplit /@#))& *)
          dropPath = (# // FileNameSplit // Last) &

Out[30]= Last[FileNameSplit [#1]] &

```

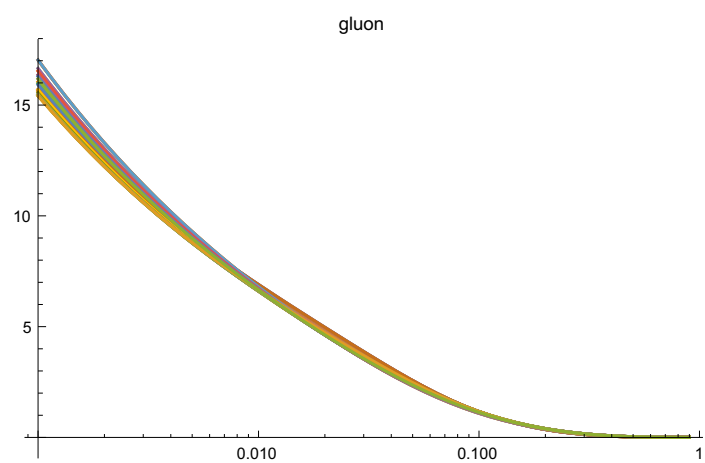
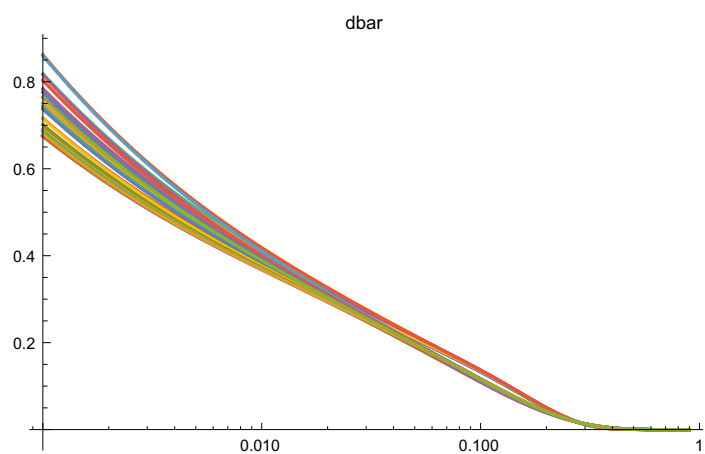
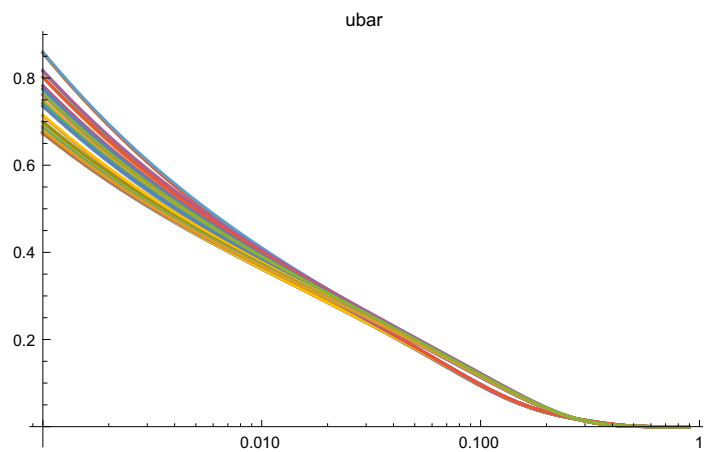
## Look at PDFs:

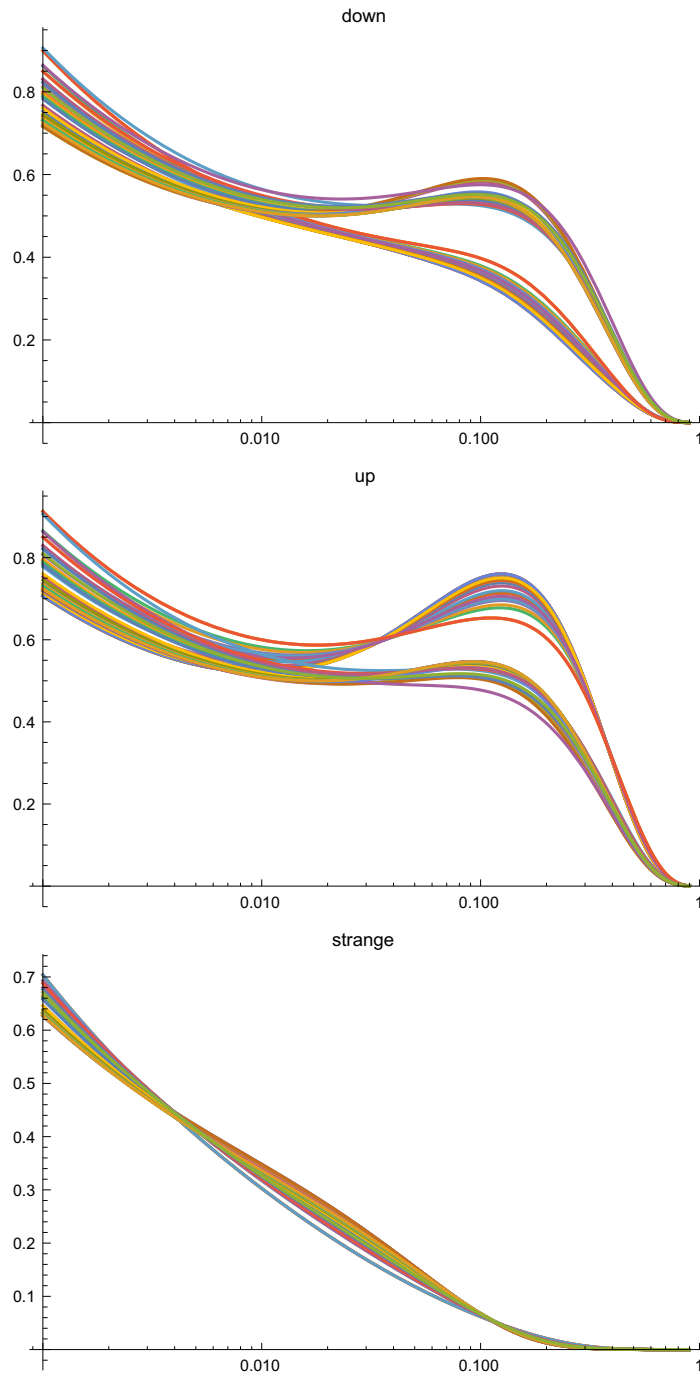
```

In[31]:= q0 = 10;
          len = Length[pdfSetList];

In[33]:= Do[
          LogLinearPlot[x pdf[Range[len], i, x, q0] // Evaluate,
                        {x, 0.001, 0.9}, PlotLabel → pdfFlavor[i]] // Print;
          ,
          {i,
            -2,
            3,
            1}]

```





## Read All PDFs INCLUDING error PDFs

In[34]:= **dirLen = Length[dirList]**

Out[34]= 48

```

In[35]:= pdfReset []
Do[
  pdfFamilyParseLHA [ dirList[[i]] ] // Print;
  Print[" i = ", i];
  , {i, 1, dirLen}]

Default Mathematica interpolator will be used.

All internal variables have been reset.

Successfully read ./LHAPDF/nCTEQ15HQ_108_54/nCTEQ15HQ_108_54.info.

Included 39 files in the PDF family.

{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}

i = 1

Successfully read ./LHAPDF/nCTEQ15HQ_1_1/nCTEQ15HQ_1_1.info.

Included 39 files in the PDF family.

{40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 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}

i = 2

Successfully read ./LHAPDF/nCTEQ15HQ_119_59/nCTEQ15HQ_119_59.info.

Included 39 files in the PDF family.

{79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100,
  101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117}

i = 3

Successfully read ./LHAPDF/nCTEQ15HQ_12_6/nCTEQ15HQ_12_6.info.

Included 39 files in the PDF family.

{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}

i = 4

Successfully read ./LHAPDF/nCTEQ15HQ_131_54/nCTEQ15HQ_131_54.info.

Included 39 files in the PDF family.

{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}

i = 5

Successfully read ./LHAPDF/nCTEQ15HQ_14_7/nCTEQ15HQ_14_7.info.

Included 39 files in the PDF family.

```



```
{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}
```

```
i = 6
```

```
Successfully read ./LHAPDF/nCTEQ15HQ_16_8/nCTEQ15HQ_16_8.info.
```

```
Included 39 files in the PDF family.
```

```
{235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245,
 246, 247, 248, 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}
```

```
i = 7
```

```
Successfully read ./LHAPDF/nCTEQ15HQ_184_74/nCTEQ15HQ_184_74.info.
```

```
Included 39 files in the PDF family.
```

```
{274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284,
 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298,
 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312}
```

```
i = 8
```

```
Successfully read ./LHAPDF/nCTEQ15HQ_197_79/nCTEQ15HQ_197_79.info.
```

```
Included 39 files in the PDF family.
```

```
{313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323,
 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337,
 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351}
```

```
i = 9
```

```
Successfully read ./LHAPDF/nCTEQ15HQ_197_98/nCTEQ15HQ_197_98.info.
```

```
Included 39 files in the PDF family.
```

```
{352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362,
 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376,
 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390}
```

```
i = 10
```

```
Successfully read ./LHAPDF/nCTEQ15HQ_207_103/nCTEQ15HQ_207_103.info.
```

```
Included 39 files in the PDF family.
```

```
{391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401,
 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415,
 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429}
```

```
i = 11
```

```
Successfully read ./LHAPDF/nCTEQ15HQ_208_82/nCTEQ15HQ_208_82.info.
```

```
Included 39 files in the PDF family.
```

```
{430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440,
 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454,
 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468}
```

```

i = 12

Successfully read ./LHAPDF/nCTEQ15HQ_2_1/nCTEQ15HQ_2_1.info.
Included 39 files in the PDF family.
{469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479,
 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493,
 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507}

i = 13

Successfully read ./LHAPDF/nCTEQ15HQ_27_13/nCTEQ15HQ_27_13.info.
Included 39 files in the PDF family.
{508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518,
 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532,
 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546}

i = 14

Successfully read ./LHAPDF/nCTEQ15HQ_3_1/nCTEQ15HQ_3_1.info.
Included 39 files in the PDF family.
{547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557,
 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571,
 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585}

i = 15

Successfully read ./LHAPDF/nCTEQ15HQ_40_20/nCTEQ15HQ_40_20.info.
Included 39 files in the PDF family.
{586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596,
 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610,
 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624}

i = 16

Successfully read ./LHAPDF/nCTEQ15HQ_4_2/nCTEQ15HQ_4_2.info.
Included 39 files in the PDF family.
{625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635,
 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649,
 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663}

i = 17

Successfully read ./LHAPDF/nCTEQ15HQ_56_26/nCTEQ15HQ_56_26.info.
Included 39 files in the PDF family.
{664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674,
 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688,
 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702}

i = 18

Successfully read ./LHAPDF/nCTEQ15HQ_56_28/nCTEQ15HQ_56_28.info.
Included 39 files in the PDF family.

```

```

{703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713,
 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727,
 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741}

i = 19

Successfully read ./LHAPDF/nCTEQ15HQ_6_3/nCTEQ15HQ_6_3.info.
Included 39 files in the PDF family.

{742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752,
 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766,
 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780}

i = 20

Successfully read ./LHAPDF/nCTEQ15HQ_64_32/nCTEQ15HQ_64_32.info.
Included 39 files in the PDF family.

{781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791,
 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805,
 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819}

i = 21

Successfully read ./LHAPDF/nCTEQ15HQ_7_3/nCTEQ15HQ_7_3.info.
Included 39 files in the PDF family.

{820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830,
 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844,
 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858}

i = 22

Successfully read ./LHAPDF/nCTEQ15HQ_84_42/nCTEQ15HQ_84_42.info.
Included 39 files in the PDF family.

{859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869,
 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883,
 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897}

i = 23

Successfully read ./LHAPDF/nCTEQ15HQ_9_4/nCTEQ15HQ_9_4.info.
Included 39 files in the PDF family.

{898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908,
 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922,
 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936}

i = 24

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc_108_54/nCTEQ15HQ_FullNuc_108_54.info.
Included 39 files in the PDF family.

{937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947,
 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961,
 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975}

```

```

i = 25

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _1_1/nCTEQ15HQ_FullNuc _1_1.info.
Included 39 files in the PDF family.

{976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988,
 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000, 1001, 1002,
 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014}

i = 26

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _119_59/nCTEQ15HQ_FullNuc _119_59.info.
Included 39 files in the PDF family.

{1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027,
 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040,
 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053}

i = 27

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _12_6/nCTEQ15HQ_FullNuc _12_6.info.
Included 39 files in the PDF family.

{1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066,
 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079,
 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092}

i = 28

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _131_54/nCTEQ15HQ_FullNuc _131_54.info.
Included 39 files in the PDF family.

{1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105,
 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118,
 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131}

i = 29

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _14_7/nCTEQ15HQ_FullNuc _14_7.info.
Included 39 files in the PDF family.

{1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144,
 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157,
 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170}

i = 30

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _16_8/nCTEQ15HQ_FullNuc _16_8.info.
Included 39 files in the PDF family.

{1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183,
 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196,
 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209}

i = 31

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _184_74/nCTEQ15HQ_FullNuc _184_74.info.
Included 39 files in the PDF family.

```

```

{1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222,
 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235,
 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248}

i = 32

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _197_79/nCTEQ15HQ_FullNuc _197_79.info.
Included 39 files in the PDF family.

{1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261,
 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274,
 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287}

i = 33

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _197_98/nCTEQ15HQ_FullNuc _197_98.info.
Included 39 files in the PDF family.

{1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300,
 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313,
 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326}

i = 34

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _207_103/nCTEQ15HQ_FullNuc _207_103.info.
Included 39 files in the PDF family.

{1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339,
 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352,
 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1360, 1361, 1362, 1363, 1364, 1365}

i = 35

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _208_82/nCTEQ15HQ_FullNuc _208_82.info.
Included 39 files in the PDF family.

{1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378,
 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391,
 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404}

i = 36

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _2_1/nCTEQ15HQ_FullNuc _2_1.info.
Included 39 files in the PDF family.

{1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417,
 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430,
 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443}

i = 37

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _27_13/nCTEQ15HQ_FullNuc _27_13.info.
Included 39 files in the PDF family.

{1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456,
 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469,
 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482}

```

```

i = 38

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _3_1/nCTEQ15HQ_FullNuc _3_1.info.
Included 39 files in the PDF family.

{1483, 1484, 1485, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1494, 1495,
  1496, 1497, 1498, 1499, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507, 1508,
  1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521}

i = 39

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _40_20/nCTEQ15HQ_FullNuc _40_20.info.
Included 39 files in the PDF family.

{1522, 1523, 1524, 1525, 1526, 1527, 1528, 1529, 1530, 1531, 1532, 1533, 1534,
  1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1546, 1547,
  1548, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560}

i = 40

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _4_2/nCTEQ15HQ_FullNuc _4_2.info.
Included 39 files in the PDF family.

{1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1573,
  1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586,
  1587, 1588, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1599}

i = 41

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _56_26/nCTEQ15HQ_FullNuc _56_26.info.
Included 39 files in the PDF family.

{1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610, 1611, 1612,
  1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624, 1625,
  1626, 1627, 1628, 1629, 1630, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1638}

i = 42

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _56_28/nCTEQ15HQ_FullNuc _56_28.info.
Included 39 files in the PDF family.

{1639, 1640, 1641, 1642, 1643, 1644, 1645, 1646, 1647, 1648, 1649, 1650, 1651,
  1652, 1653, 1654, 1655, 1656, 1657, 1658, 1659, 1660, 1661, 1662, 1663, 1664,
  1665, 1666, 1667, 1668, 1669, 1670, 1671, 1672, 1673, 1674, 1675, 1676, 1677}

i = 43

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _6_3/nCTEQ15HQ_FullNuc _6_3.info.
Included 39 files in the PDF family.

{1678, 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687, 1688, 1689, 1690,
  1691, 1692, 1693, 1694, 1695, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703,
  1704, 1705, 1706, 1707, 1708, 1709, 1710, 1711, 1712, 1713, 1714, 1715, 1716}

i = 44

Successfully read ./LHAPDF/nCTEQ15HQ_FullNuc _64_32/nCTEQ15HQ_FullNuc _64_32.info.
Included 39 files in the PDF family.

```



10.8785 , 10.8785 , 10.8785 , 10.8785 , 10.8785 , 10.8785 , 10.8785 , 10.8785 , 10.8785 ,  
10.8785 , 10.8785 , 10.8785 , 10.8785 , 10.8785 , 10.8785 , 10.8785 , 10.8785 , 10.8785 ,  
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11.4103, 11.5643, 11.6607, 11.6427, 11.609, 11.6815, 11.5825, 11.4685, 11.87,
11.5219, 11.7319, 11.5725, 11.6929, 11.5134, 11.7368, 11.1898, 11.185, 11.1947,
11.2399, 11.1383, 11.1972, 11.1923, 11.2746, 11.2419, 11.2296, 11.0558,
11.174, 10.9726, 10.968, 11.1801, 11.1701, 10.9779, 11.2087, 11.0236, 11.1247,
11.2054, 11.1266, 11.2039, 11.2218, 11.1, 11.1609, 11.2126, 11.1928, 11.1847,
11.2287, 11.1541, 11.1026, 11.307, 11.1589, 11.218, 11.1698, 11.2109, 11.1688,
11.2095, 11.647, 11.6397, 11.6547, 11.8282, 11.616, 11.6717, 11.7313, 11.8453,
11.818, 11.674, 11.4434, 11.5243, 11.305, 11.2987, 11.5412, 11.5074, 11.3021,
11.6233, 11.3799, 11.5029, 11.6906, 11.4755, 11.5795, 11.5668, 11.4177,
11.5817, 11.6719, 11.6578, 11.6264, 11.6948, 11.6009, 11.4895, 11.8832,
11.5316, 11.7542, 11.5854, 11.7126, 11.5173, 11.7636, 11.221, 11.2178, 11.2245,
11.2768, 11.1655, 11.2296, 11.2244, 11.3123, 11.2789, 11.2632, 11.0773,
11.2023, 10.9906, 10.9857, 11.209, 11.1974, 10.9966, 11.239, 11.0457, 11.1513,
11.2378, 11.151, 11.2348, 11.2525, 11.1227, 11.1883, 11.2466, 11.2253, 11.2142,
11.2622, 11.1832, 11.1254, 11.3496, 11.1862, 11.2527, 11.1989, 11.2443,
11.1969, 11.2435, 11.6687, 11.6515, 11.6858, 11.8753, 11.6678, 11.6913, 11.786,
11.8886, 11.8607, 11.6849, 11.4722, 11.5204, 11.3165, 11.3107, 11.539, 11.502,
11.3089, 11.638, 11.3848, 11.507, 11.7197, 11.4838, 11.5763, 11.5548, 11.4204,
11.609, 11.6791, 11.6741, 11.6523, 11.7078, 11.6297, 11.5292, 11.8888, 11.5393,
11.7892, 11.5997, 11.7423, 11.5094, 11.811, 11.273, 11.2722, 11.2742, 11.3386,
11.2114, 11.2837, 11.2782, 11.3749, 11.3409, 11.3184, 11.1145, 11.2487,
11.0229, 11.0176, 11.2564, 11.2421, 11.03, 11.2889, 11.0842, 11.1961, 11.2919,
11.1918, 11.2854, 11.3023, 11.1607, 11.234, 11.303, 11.2793, 11.2632, 11.3178,
11.2318, 11.1637, 11.4204, 11.2315, 11.3108, 11.2475, 11.2999, 11.2432, 11.3008}

```

```

In[43]:= (* Extract the directory names *)
npdfDirs = Map[(Take[StringSplit[#, "/"], {-2}]) &, pdfSetList[[All, 2]]] // Flatten;
(* Count the number in each *)
nErrorPdfs = Select[npdfDirs, StringMatchQ[npdfDirs[[1]], #] &] // Length

```

Out[44]= 39

```
In[45]:= Table[pdfFunction[iset, 0, 0.1, 10.], {iset, 1, nErrorPdfs, 1}]
```

```
Out[45]= {11.6707, 11.6398, 11.7005, 11.9045, 11.7098, 11.6884, 11.8291,
  11.915, 11.8851, 11.6743, 11.4848, 11.4944, 11.3074, 11.3025, 11.5147,
  11.4742, 11.2947, 11.6341, 11.366, 11.4879, 11.7308, 11.4725, 11.5512,
  11.52, 11.4032, 11.6207, 11.6609, 11.6688, 11.6613, 11.6968, 11.6422,
  11.5606, 11.8591, 11.5273, 11.8045, 11.5939, 11.7527, 11.477, 11.8427}
```

```
In[46]:= nsets
```

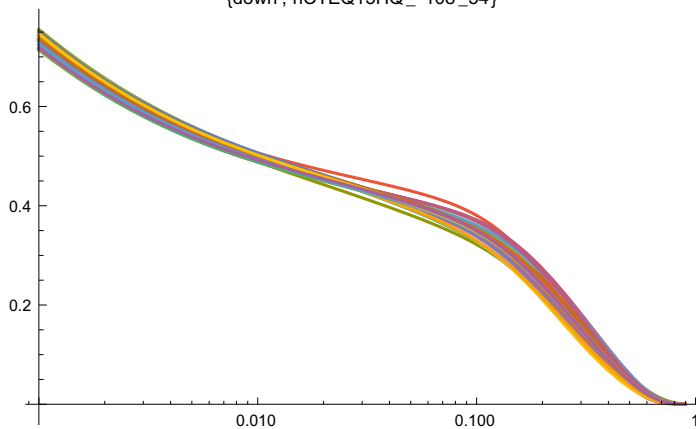
```
Out[46]= 48
```

```
In[47]:= Do[
  range = Range[nErrorPdfs] + i nErrorPdfs ;
  index = nErrorPdfs (i + 1);
  Print["index = ", index, " \n range = ", range];
  LogLinearPlot[x pdf[range, ipart0, x, q0] // Evaluate ,
    {x, 0.001, 0.9}, PlotLabel -> {pdfFlavor[ipart0], npdfDirs[[index]]} // Print ;
  , {i, 0, nsets - 1}]
```

```
index = 39
```

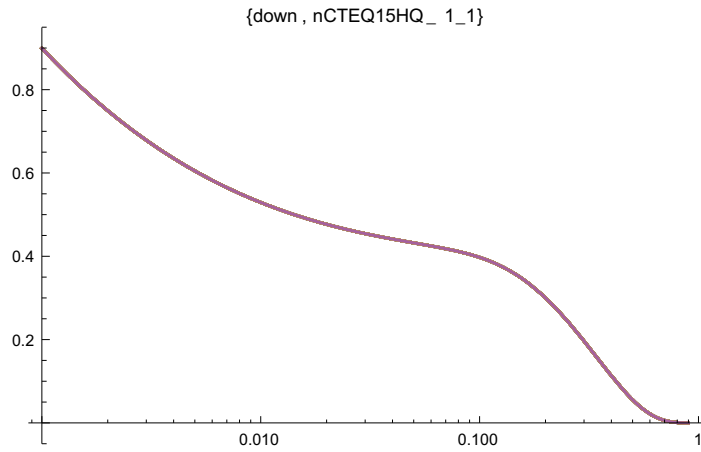
```
range = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19,
  20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39}
```

```
{down, nCTEQ15HQ_108_54}
```



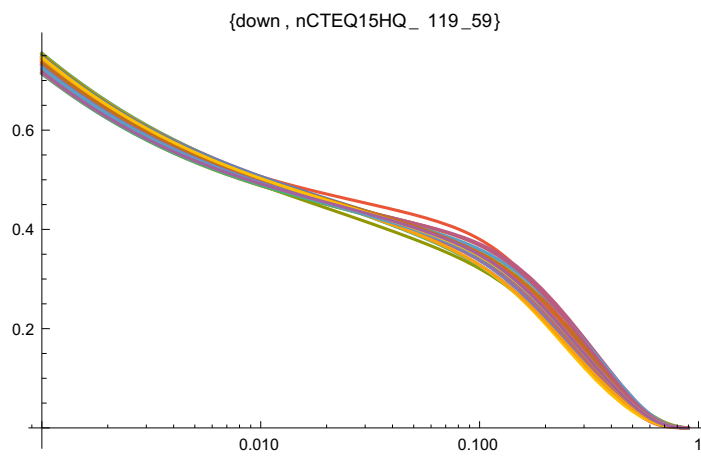
```
index = 78
```

```
range = {40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 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}
```



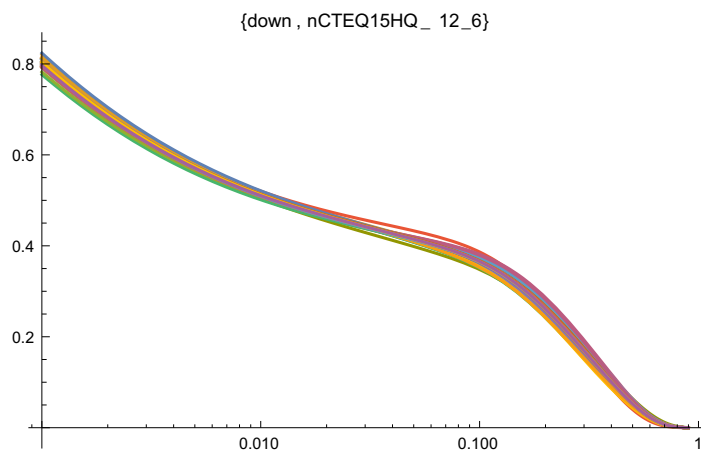
index = 117

range = {79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99,  
100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117}



index = 156

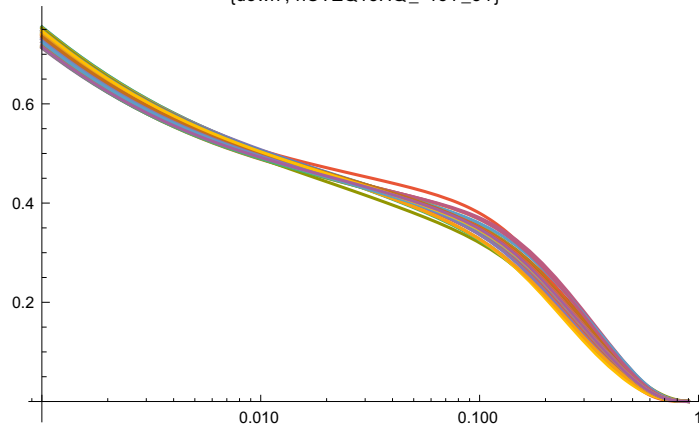
range = {118, 119, 120, 121, 122, 123, 124, 125, 126,  
127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141,  
142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156}



```
index = 195
```

```
range = {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}
```

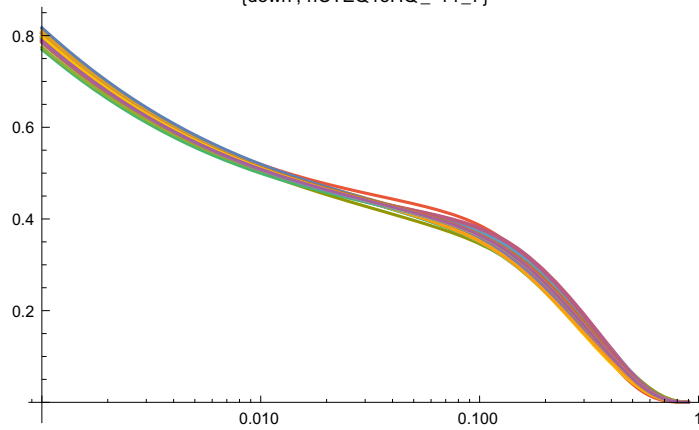
```
{down, nCTEQ15HQ_131_54}
```



```
index = 234
```

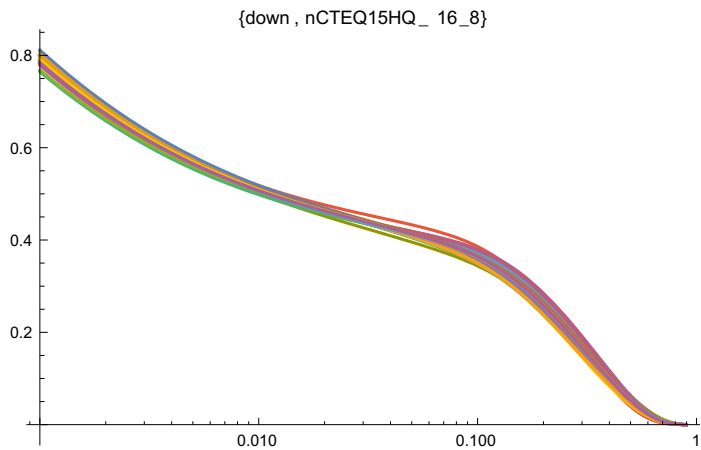
```
range = {196, 197, 198, 199, 200, 201, 202, 203, 204,
  205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219,
  220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234}
```

```
{down, nCTEQ15HQ_14_7}
```



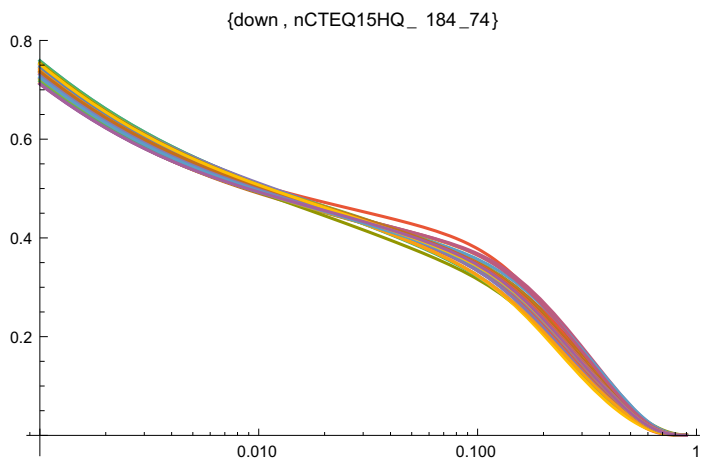
```
index = 273
```

```
range = {235, 236, 237, 238, 239, 240, 241, 242, 243,
  244, 245, 246, 247, 248, 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}
```



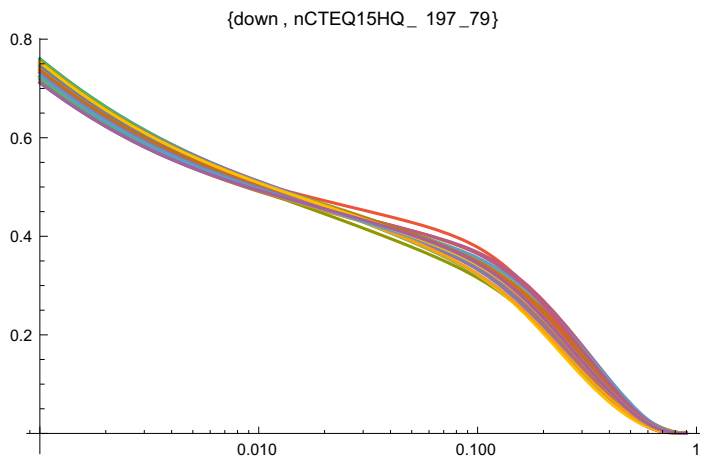
index = 312

range = {274, 275, 276, 277, 278, 279, 280, 281, 282,  
283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297,  
298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312}



index = 351

range = {313, 314, 315, 316, 317, 318, 319, 320, 321,  
322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336,  
337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351}

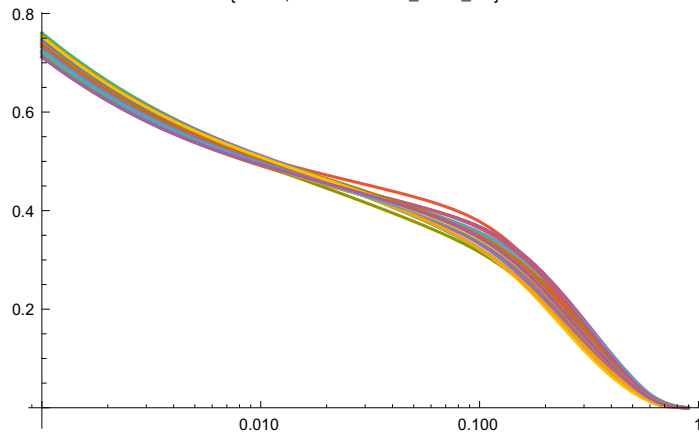




```
index = 390
```

```
range = {352, 353, 354, 355, 356, 357, 358, 359, 360,
  361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375,
  376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390}
```

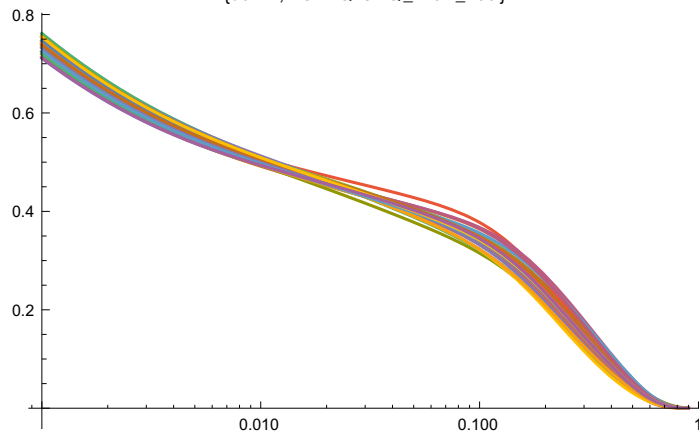
```
{down, nCTEQ15HQ_197_98}
```



```
index = 429
```

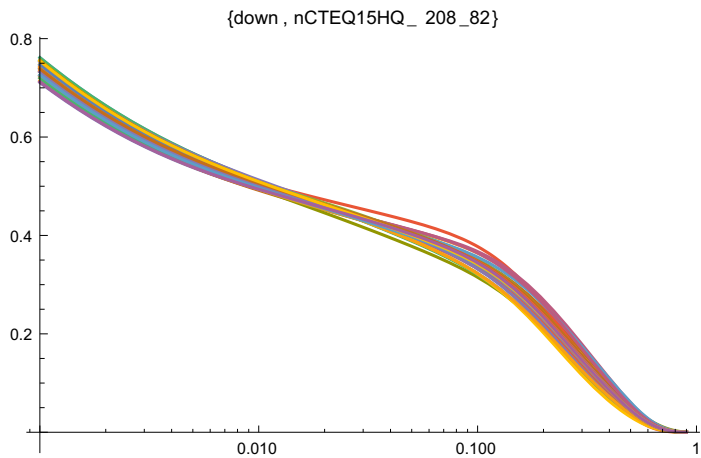
```
range = {391, 392, 393, 394, 395, 396, 397, 398, 399,
  400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414,
  415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429}
```

```
{down, nCTEQ15HQ_207_103}
```



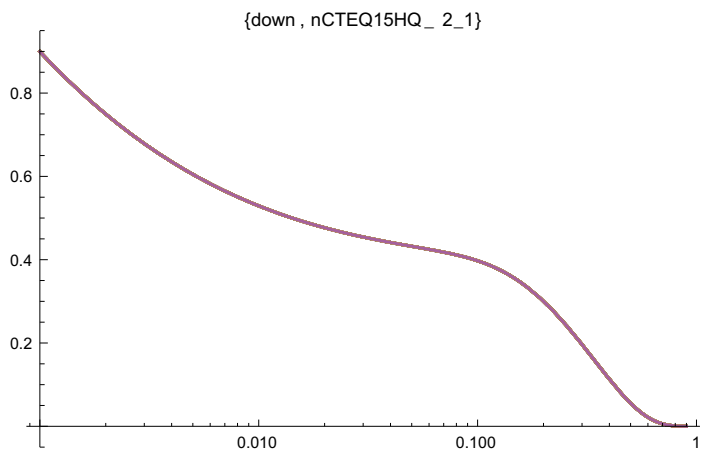
```
index = 468
```

```
range = {430, 431, 432, 433, 434, 435, 436, 437, 438,
  439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453,
  454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468}
```



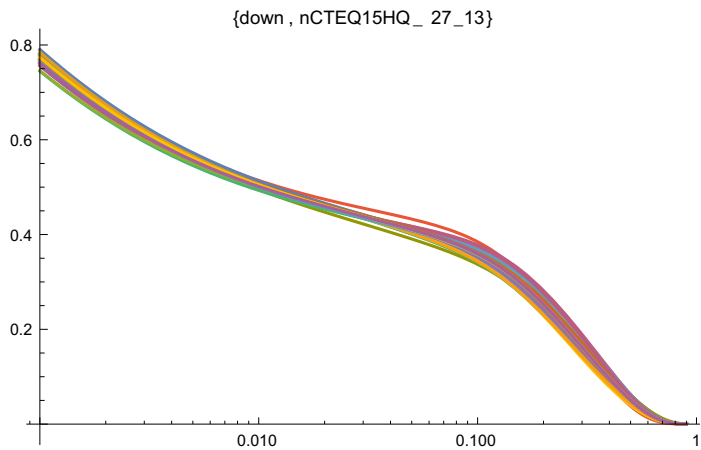
index = 507

range = {469, 470, 471, 472, 473, 474, 475, 476, 477,  
478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492,  
493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507}



index = 546

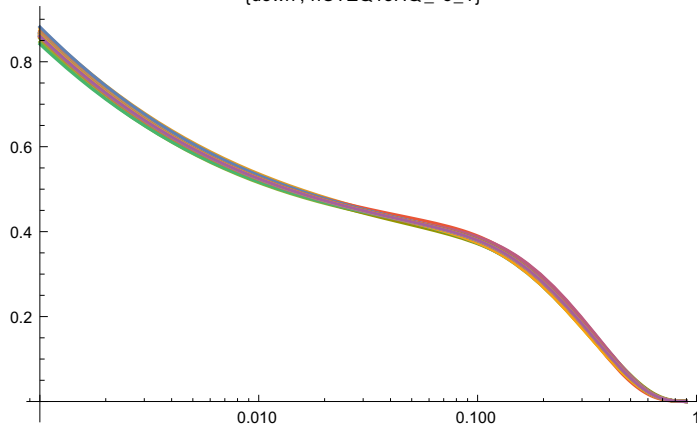
range = {508, 509, 510, 511, 512, 513, 514, 515, 516,  
517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531,  
532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546}



```
index = 585
```

```
range = {547, 548, 549, 550, 551, 552, 553, 554, 555,
         556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570,
         571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585}
```

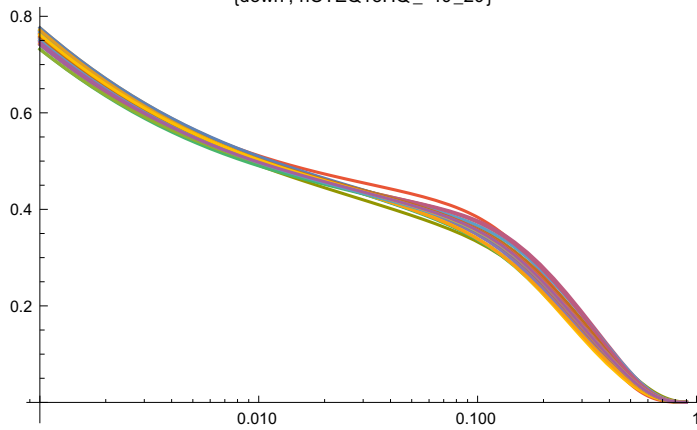
```
{down, nCTEQ15HQ_3_1}
```



```
index = 624
```

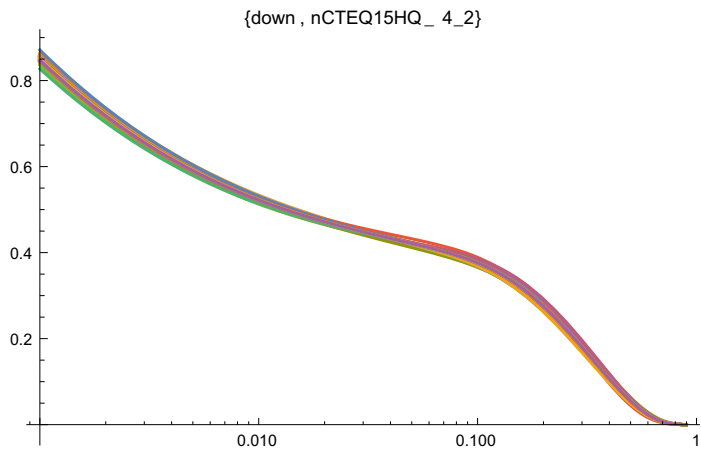
```
range = {586, 587, 588, 589, 590, 591, 592, 593, 594,
         595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609,
         610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624}
```

```
{down, nCTEQ15HQ_40_20}
```



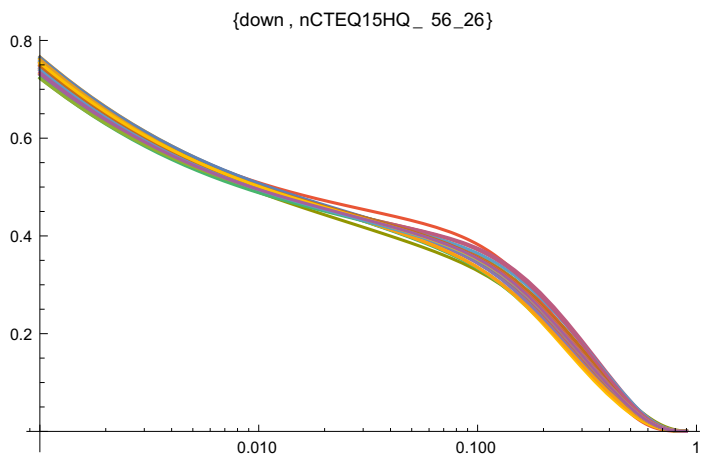
```
index = 663
```

```
range = {625, 626, 627, 628, 629, 630, 631, 632, 633,
         634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648,
         649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663}
```



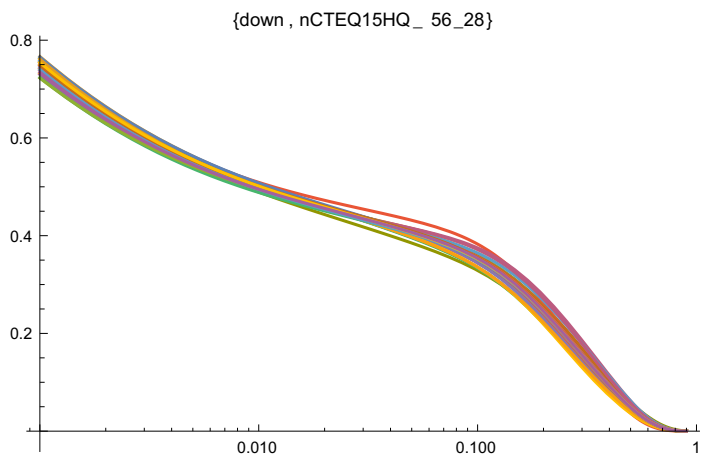
index = 702

range = {664, 665, 666, 667, 668, 669, 670, 671, 672,  
673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687,  
688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702}



index = 741

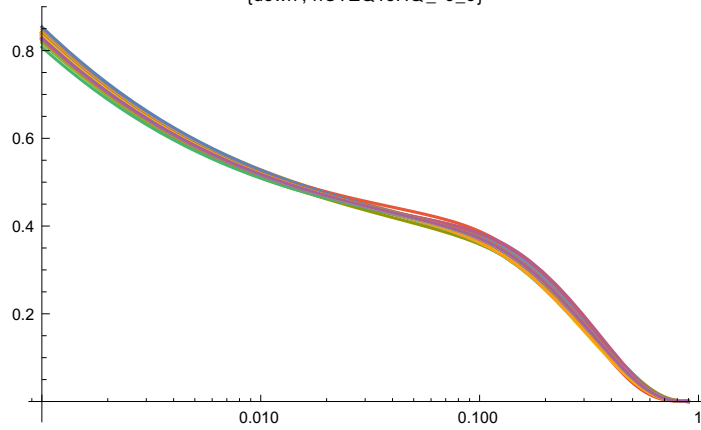
range = {703, 704, 705, 706, 707, 708, 709, 710, 711,  
712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726,  
727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741}



```
index = 780
```

```
range = {742, 743, 744, 745, 746, 747, 748, 749, 750,
  751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765,
  766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780}
```

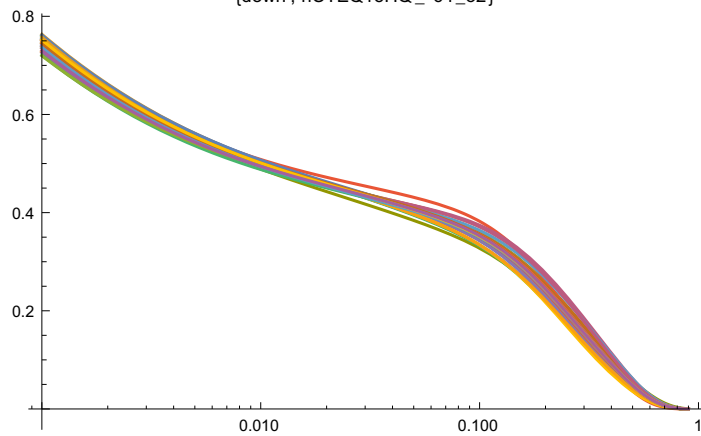
```
{down, nCTEQ15HQ_6_3}
```



```
index = 819
```

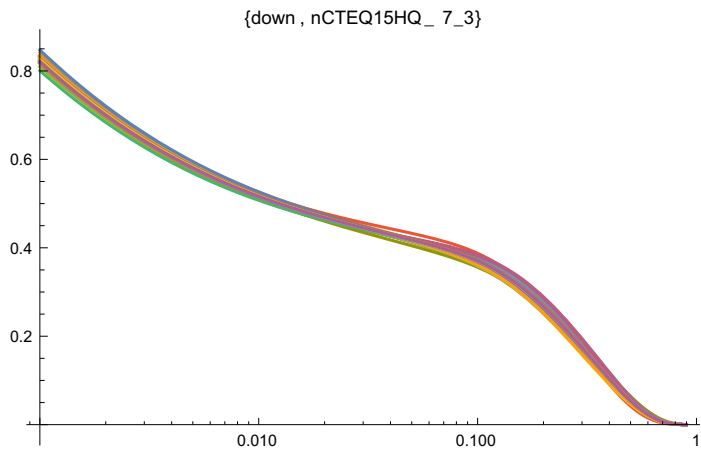
```
range = {781, 782, 783, 784, 785, 786, 787, 788, 789,
  790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804,
  805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819}
```

```
{down, nCTEQ15HQ_64_32}
```



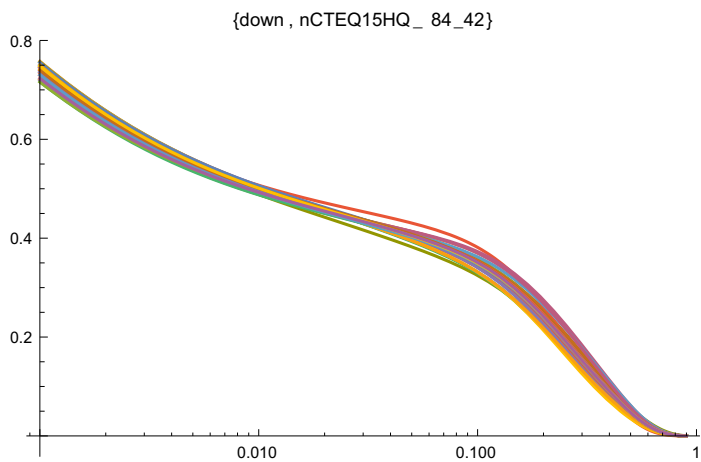
```
index = 858
```

```
range = {820, 821, 822, 823, 824, 825, 826, 827, 828,
  829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843,
  844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858}
```



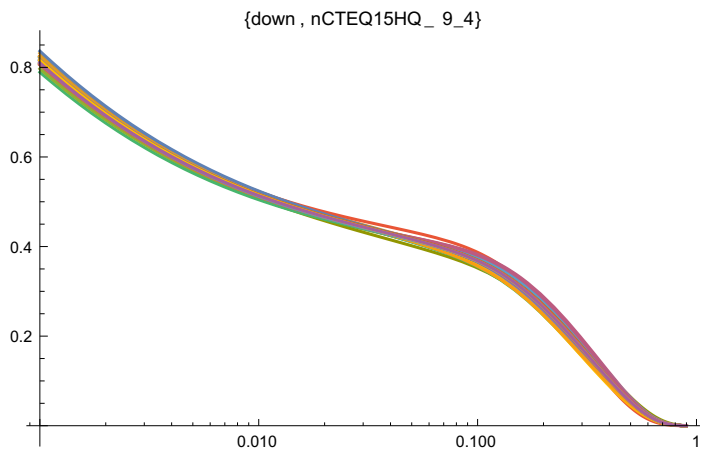
index = 897

```
range = {859, 860, 861, 862, 863, 864, 865, 866, 867,
        868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882,
        883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897}
```



index = 936

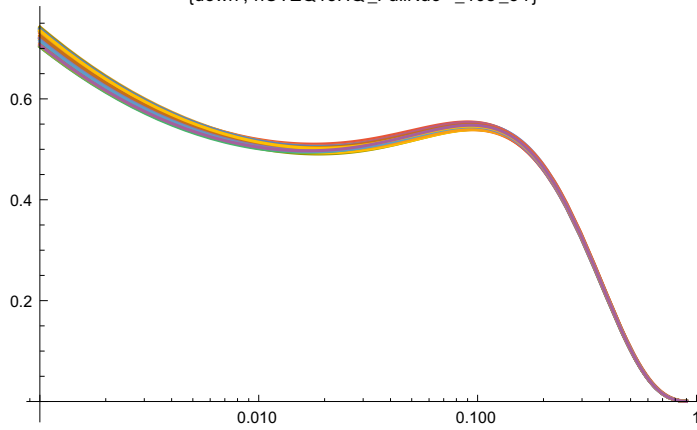
```
range = {898, 899, 900, 901, 902, 903, 904, 905, 906,
        907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921,
        922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936}
```



```
index = 975
```

```
range = {937, 938, 939, 940, 941, 942, 943, 944, 945,
  946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960,
  961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975}
```

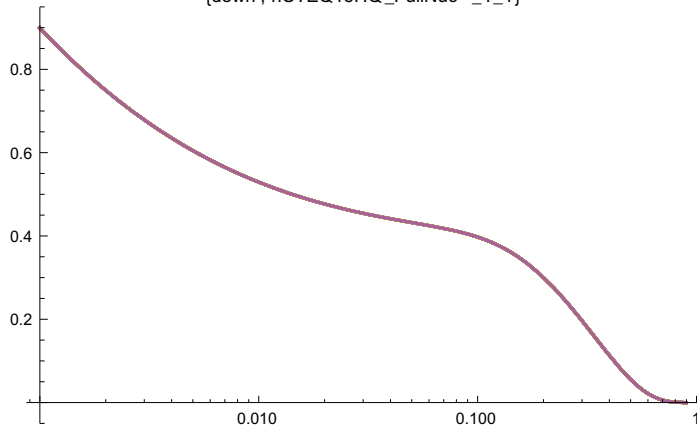
```
{down, nCTEQ15HQ_FullNuc _108_54}
```



```
index = 1014
```

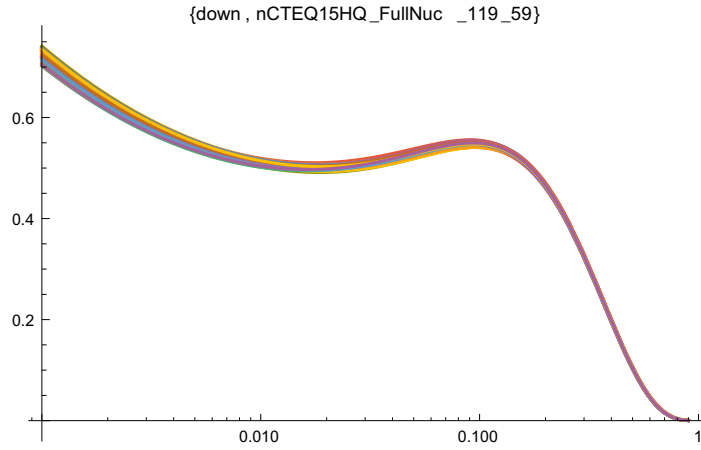
```
range = {976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986,
  987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000, 1001,
  1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014}
```

```
{down, nCTEQ15HQ_FullNuc _1_1}
```



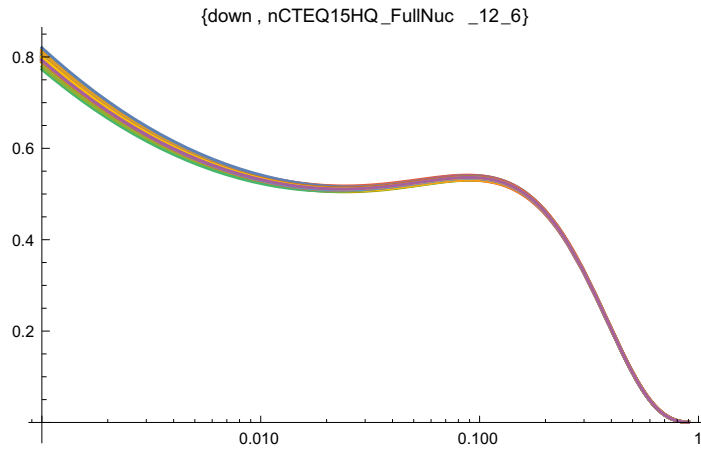
```
index = 1053
```

```
range = {1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026,
  1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039,
  1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053}
```



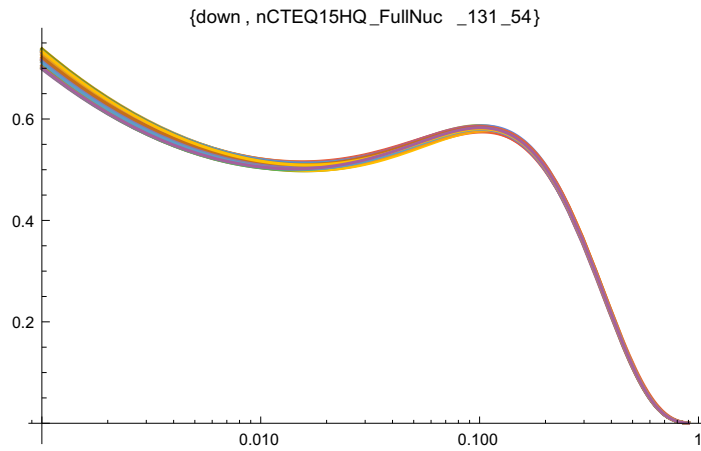
index = 1092

range = {1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065,  
1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078,  
1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092}



index = 1131

range = {1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104,  
1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117,  
1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131}

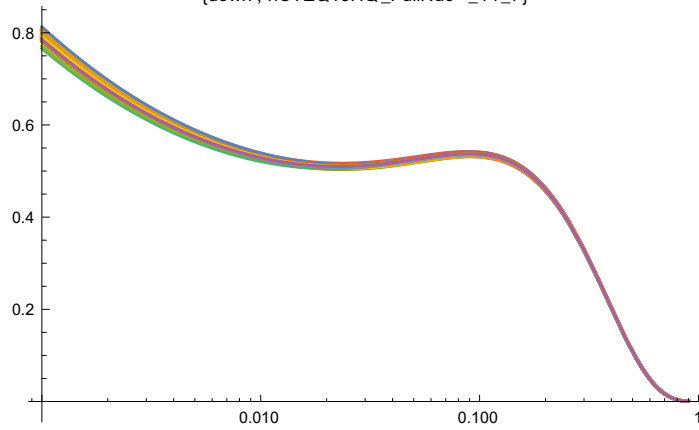




```
index = 1170
```

```
range = {1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143,
  1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156,
  1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170}
```

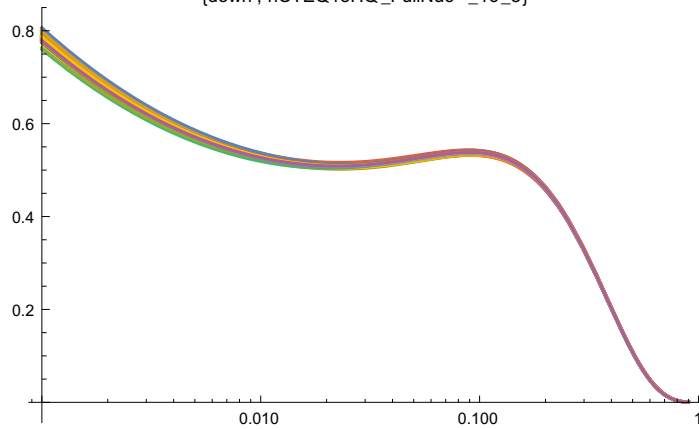
```
{down, nCTEQ15HQ_FullNuc _14_7}
```



```
index = 1209
```

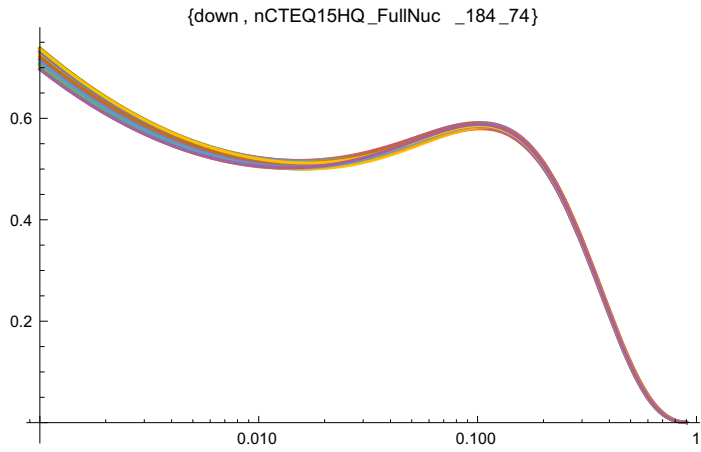
```
range = {1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182,
  1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195,
  1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209}
```

```
{down, nCTEQ15HQ_FullNuc _16_8}
```



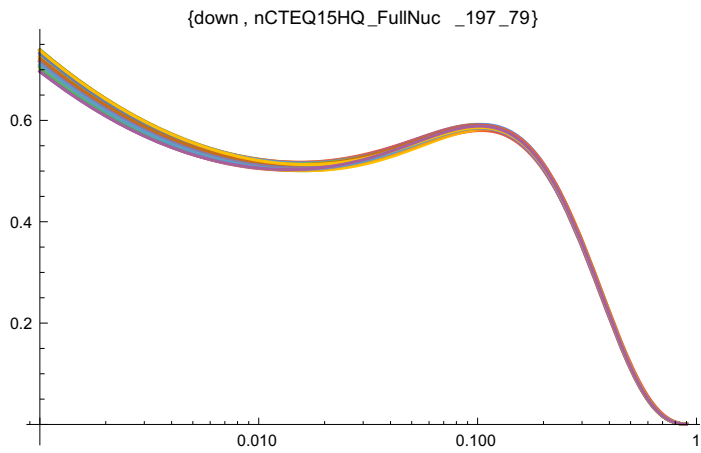
```
index = 1248
```

```
range = {1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221,
  1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234,
  1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248}
```



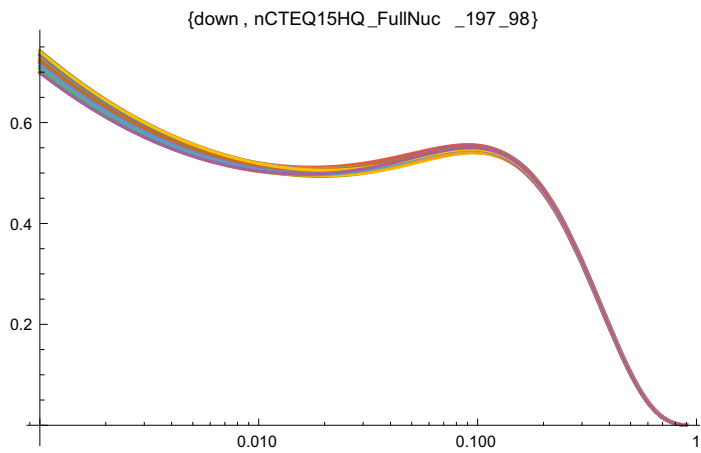
index = 1287

range = {1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287}



index = 1326

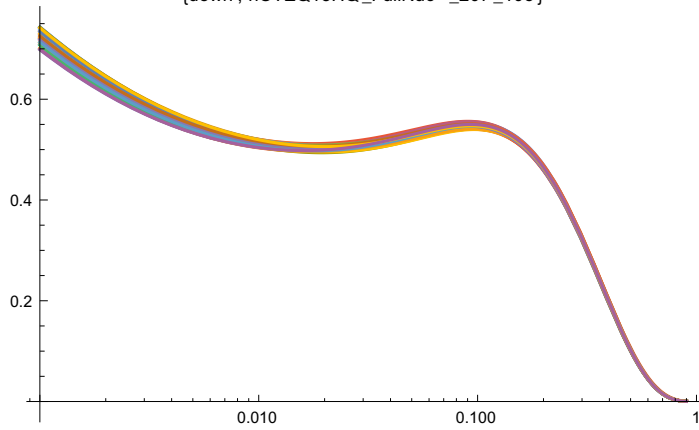
range = {1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326}



index = 1365

```
range = {1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338,
1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351,
1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1360, 1361, 1362, 1363, 1364, 1365}
```

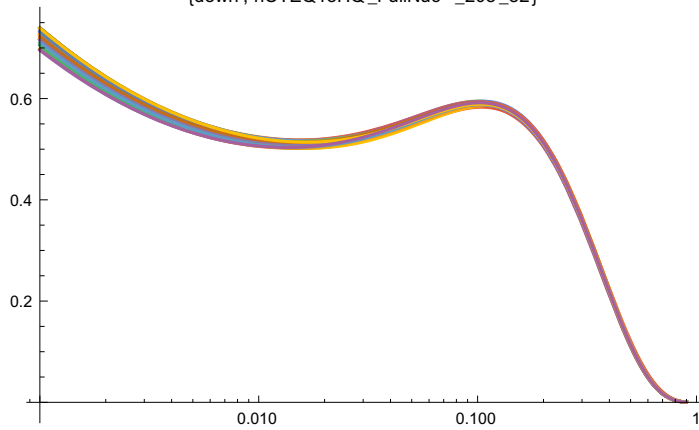
{down, nCTEQ15HQ\_FullNuc \_207\_103}



index = 1404

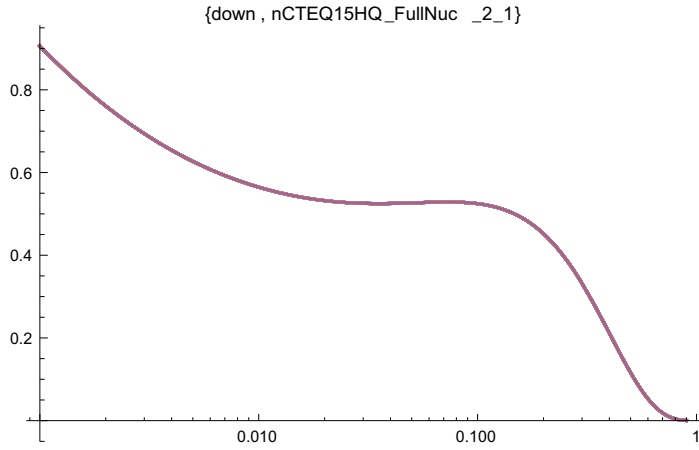
```
range = {1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377,
1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390,
1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404}
```

{down, nCTEQ15HQ\_FullNuc \_208\_82}



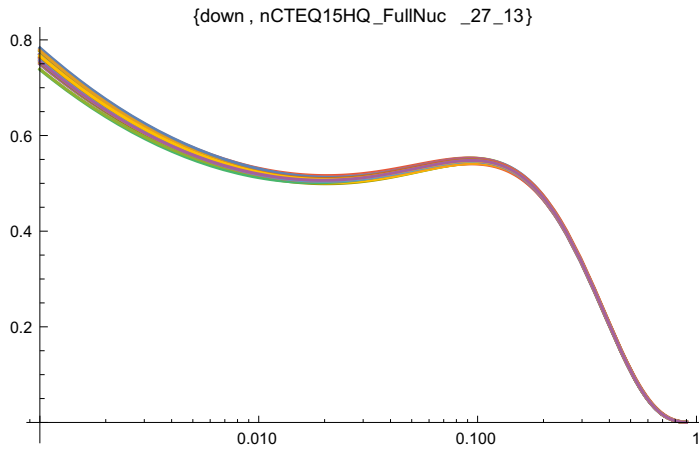
index = 1443

```
range = {1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416,
1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429,
1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443}
```



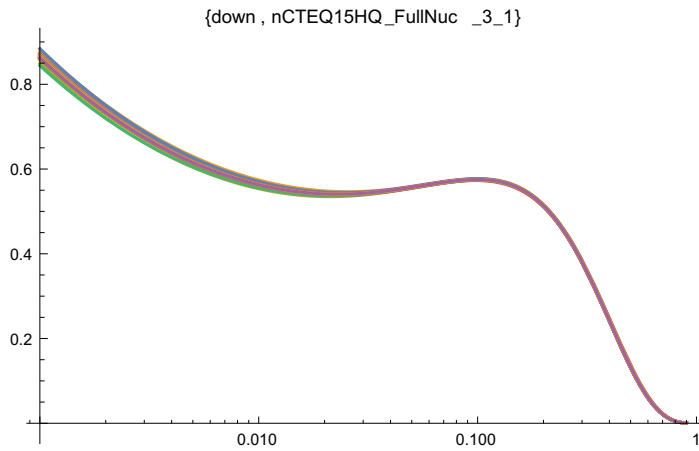
index = 1482

range = {1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455,  
1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468,  
1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482}



index = 1521

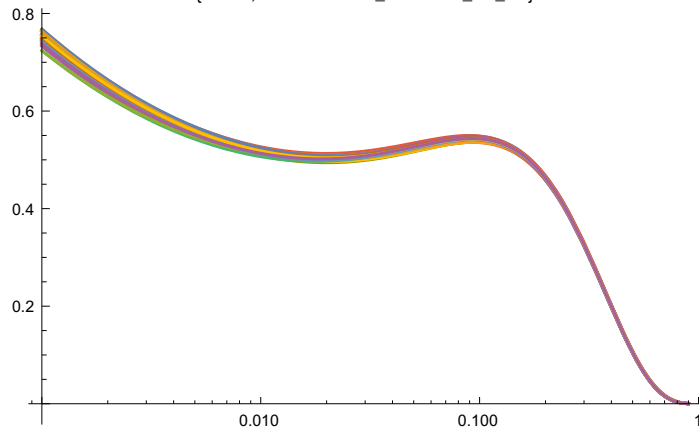
range = {1483, 1484, 1485, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1494,  
1495, 1496, 1497, 1498, 1499, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507,  
1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521}



```
index = 1560
```

```
range = {1522, 1523, 1524, 1525, 1526, 1527, 1528, 1529, 1530, 1531, 1532, 1533,
  1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1546,
  1547, 1548, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560}
```

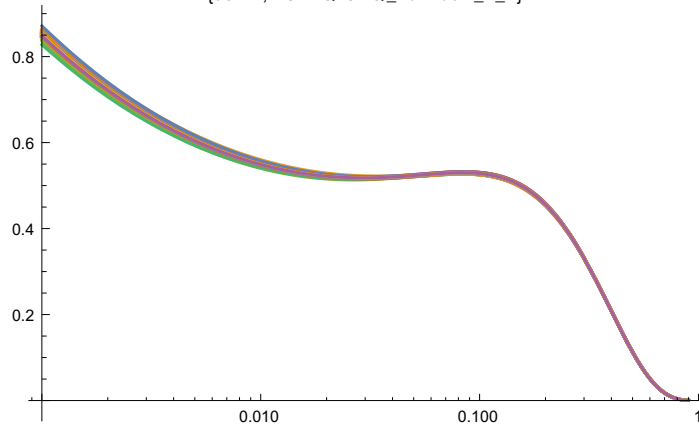
```
{down, nCTEQ15HQ_FullNuc _40_20}
```



```
index = 1599
```

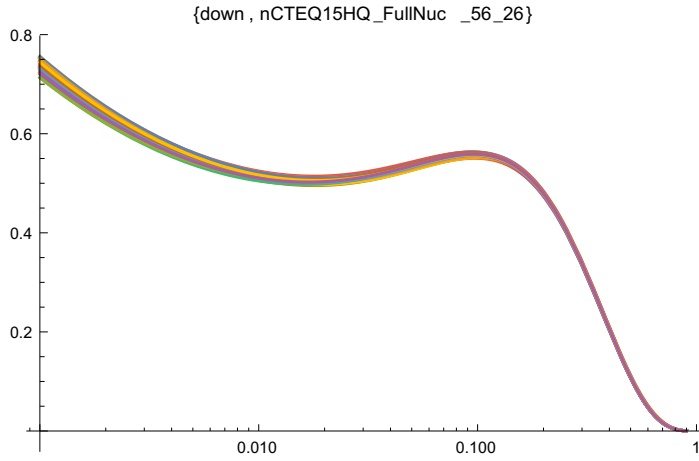
```
range = {1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572,
  1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585,
  1586, 1587, 1588, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1599}
```

```
{down, nCTEQ15HQ_FullNuc _4_2}
```



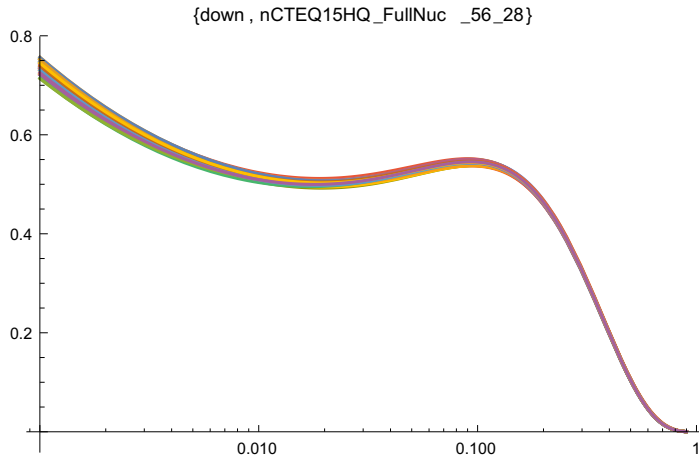
```
index = 1638
```

```
range = {1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610, 1611,
  1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624,
  1625, 1626, 1627, 1628, 1629, 1630, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1638}
```



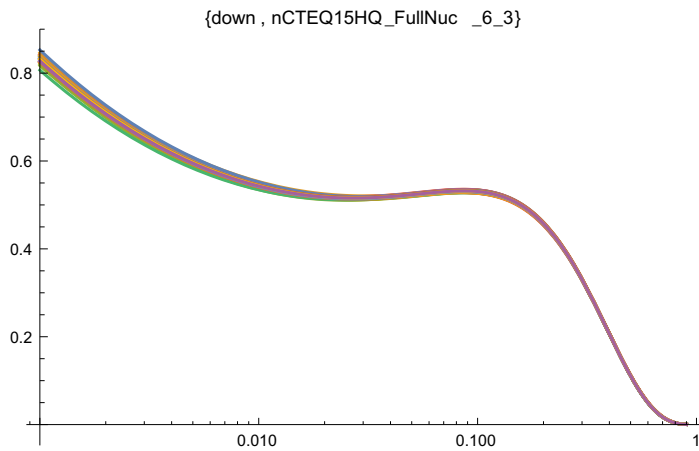
index = 1677

range = {1639, 1640, 1641, 1642, 1643, 1644, 1645, 1646, 1647, 1648, 1649, 1650, 1651, 1652, 1653, 1654, 1655, 1656, 1657, 1658, 1659, 1660, 1661, 1662, 1663, 1664, 1665, 1666, 1667, 1668, 1669, 1670, 1671, 1672, 1673, 1674, 1675, 1676, 1677}



index = 1716

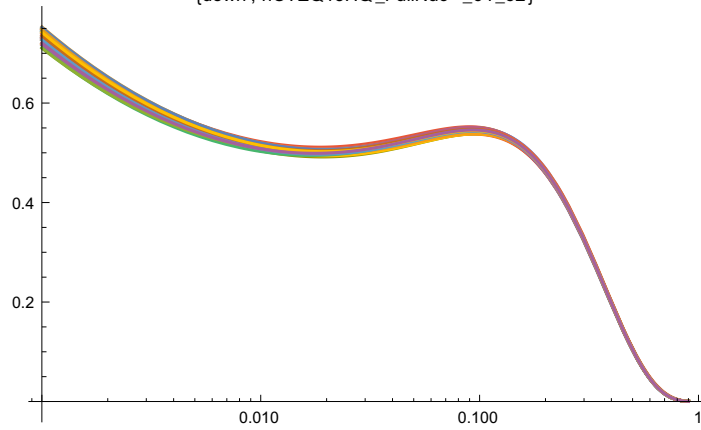
range = {1678, 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687, 1688, 1689, 1690, 1691, 1692, 1693, 1694, 1695, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704, 1705, 1706, 1707, 1708, 1709, 1710, 1711, 1712, 1713, 1714, 1715, 1716}



```
index = 1755
```

```
range = {1717, 1718, 1719, 1720, 1721, 1722, 1723, 1724, 1725, 1726, 1727, 1728,
  1729, 1730, 1731, 1732, 1733, 1734, 1735, 1736, 1737, 1738, 1739, 1740, 1741,
  1742, 1743, 1744, 1745, 1746, 1747, 1748, 1749, 1750, 1751, 1752, 1753, 1754, 1755}
```

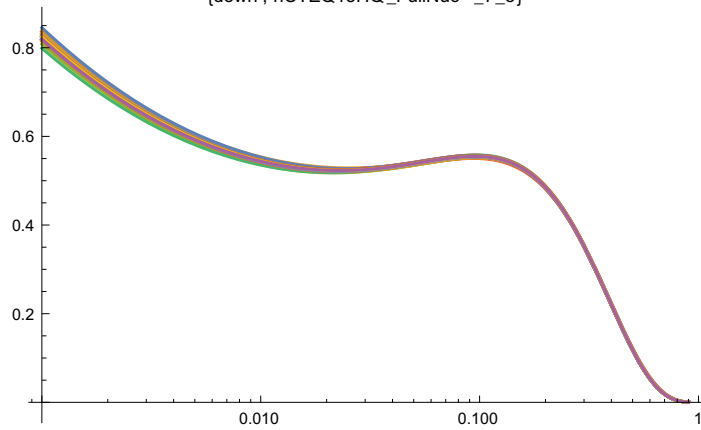
```
{down, nCTEQ15HQ_FullNuc _64_32}
```



```
index = 1794
```

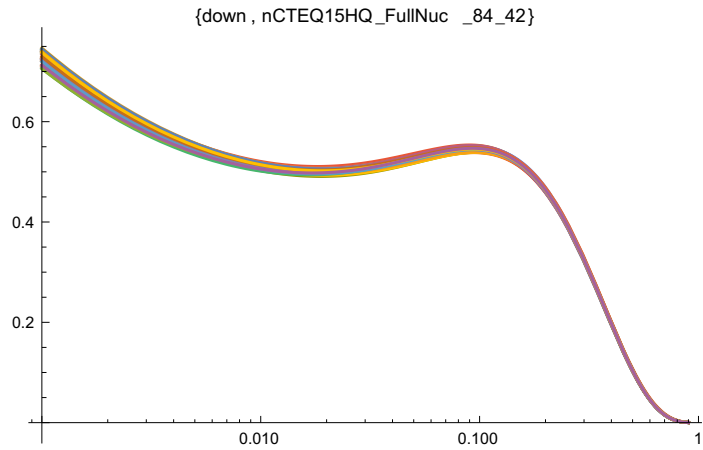
```
range = {1756, 1757, 1758, 1759, 1760, 1761, 1762, 1763, 1764, 1765, 1766, 1767,
  1768, 1769, 1770, 1771, 1772, 1773, 1774, 1775, 1776, 1777, 1778, 1779, 1780,
  1781, 1782, 1783, 1784, 1785, 1786, 1787, 1788, 1789, 1790, 1791, 1792, 1793, 1794}
```

```
{down, nCTEQ15HQ_FullNuc _7_3}
```



```
index = 1833
```

```
range = {1795, 1796, 1797, 1798, 1799, 1800, 1801, 1802, 1803, 1804, 1805, 1806,
  1807, 1808, 1809, 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819,
  1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1830, 1831, 1832, 1833}
```



index = 1872

range = {1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845,  
1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858,  
1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872}

