

ひとり情シスのIです。

今日は、Python で粒径加積曲線の続きです。

昨日から使えそうな補間関数をいくつか試してみて、秋間法を試したところ、昨日試した3次スプライン補間より曲線の波うちが少なく、結構見やすくなった。右側上グラフが3次スプライン補間、その下が秋間法による補間のグラフとなっている。

The screenshot shows the Spyder Python IDE with a script named `graph1.py` and its execution results. The script defines a set of data points `x` and `y`, and uses `scipy.interpolate.Akima1DInterpolator` to create a smooth curve. The plot shows a cumulative distribution function (CDF) of particle sizes on a semi-log scale.

```

1 # -*- coding: utf-8 -*-
2 """
3 Created on Mon Apr 15 23:13:08 2019
4
5 @author: masakioffice
6 """
7 import scipy as sp
8 import numpy as np
9 import matplotlib.pyplot as plt
10 import scipy.interpolate
11 import matplotlib.ticker
12
13
14 start = 0.00139
15 end = 19
16 x = sorted([19,9.5,4.75,2,0.85,0.425,0.25,0.106,0.075,0.052,0.0369,0.0234,0.015,0.009,0.005,0.003,0.002,0.001])
17 y = sorted([100,98.9,98.4,96.5,93.7,81.5,49.8,6.9,5.7,5.3,4.8,3.9,3.3,2.9,2.5,2.1,1.8,1.5,1.2,0.9,0.7,0.5,0.3,0.2,0.1])
18 start = min(x)
19 end = max(x)
20
21 #sp = scipy.interpolate.InterpolatedUnivariateSpline(x, y)
22 sp = scipy.interpolate.Akima1DInterpolator(x, y)
23 sx = np.linspace(start, end, 1000)
24 sy = sp(sx)
25 fig = plt.figure()
26 plt.xscale('log')
27 plt.grid()
28 ax = fig.gca()
29 ax.set_xlim(start, end)
30 ax.plot(x, y, "bo")
31 ax.plot(sx, sy, "b")
32 ax.set_xticks([0.001, 0.01, 0.1, 1,10,100])
33 ax.get_xaxis().set_major_formatter(matplotlib.ticker.ScalarFormatter())
34 fig.savefig("sp0.png")

```

The console output shows the execution of the script:

```

In [15]: runfile('D:/Pythonsrc/graph1.py', wdir='D:/Pythonsrc')
In [16]: runfile('D:/Pythonsrc/graph1.py', wdir='D:/Pythonsrc')
In [17]:

```

The plot shows a cumulative distribution function (CDF) of particle sizes. The x-axis is logarithmic, ranging from 0.001 to 100.00. The y-axis is linear, ranging from 0 to 100. The plot shows a smooth curve representing the cumulative distribution function, with blue circles representing the data points and a blue line representing the interpolation.

今日はこんなところでしょうか。それでは、また明日。(I)