

```

1  from GeneralModel import GeneralModel
2  import numpy as np
3  import matplotlib.pyplot as plt
4
5  B = np.array([0.4, 0.35, 0.25, 0, 0, 0, 0]).reshape([7,1])    # allocation
6
7  f41 = 0.7; f51 = 0.25; f42 = 0.65; f52 = 0.25; f43 = 0.15; f53 = 0.75;
8  f64 = 0.3; f65 = 0.05; f75 = 0.04;
9
10 A = np.array([-1, 0, 0, 0, 0, 0, 0,
11               0, -1, 0, 0, 0, 0, 0,
12               0, 0, -1, 0, 0, 0, 0,
13               f41, f42, f43, -1, 0, 0, 0,
14               f51, f52, f53, 0, -1, 0, 0,
15               0, 0, 0, f64, f65, -1, 0,
16               0, 0, 0, 0, f75, 0, -1]).reshape([7,7])    # tranfer
17
18 #turnover rate per day of pools:
19 #leaf,root,wood, metabolic litter, structural litter,
20 #fast SOM, passive SOM
21 temp = [0.0017, 0.002, 0.0001, 0.01, 0.001, 0.0001, 0.000001]
22
23
24 K = np.zeros(49).reshape([7, 7])
25
26 for i in range(0, 7):
27     K[i][i] = temp[i]
28
29 #Unit of turnover rate from day^-1 to second^-1
30 #1 day = 86400 seconds
31 K = np.multiply(K, 1/86400)
32
33 # Cinput_const, assume to be constant
34 input_fluxes = 0.00002245 #
35
36 nyear = 10000
37
38 times = np.linspace(0, nyear*365*86400, num = nyear)
39
40 iv_list = [0,0,0,0,0,0,0]
41
42 mod = GeneralModel(times, B, A, K, iv_list, input_fluxes)
43
44 res = mod.get_x()
45
46 fig = plt.figure(6*2, figsize=(14, 7.68))
47 plt.subplots_adjust(left = 0.1, right = 0.95, bottom = 0.10, top = 0.9, wspace
48 =0.2, hspace=0)
49 x = list(range(1,nyear+1, 1))
50
51 for i in range(1, 4):
52     for j in range(1, 4):
53         if ((i-1) * 3 + j) > 7 :
54             break
55         ax = plt.subplot(3, 3, (i-1) * 3 + j)
56         ax.plot(x, res[(i-1) * 3 + j - 1,:])
57 plt.savefig("./test" + ".png", dpi = 500)
58 plt.show()
59
60 print(res[:,nyear-1])
61
62 #mod.write_output("./output.csv")

```