```
this paper\Scripts\python.exe" "D:\Python\Pycharm\setroute\PyCharm Community Edition 2021.2.3\plugins\python-ce\helpers\pydev\pydevconsole.py" --mode=
  3
        import sys; print('Python %s on %s' % (sys.version, sys.platform))
       6
       PyDev console: starting.
       Python 3.9.7 (tags/v3.9.7:1016ef3, Aug 30 2021, 20:19:38) [MSC v.1929 64 bit (AMD64)] on win32
  8
       >>> runfile('E:/1 = 1 = 3 = 0 = 0/1 = 0 = 0 = 0/1 = 0 = 0 = 0/1 = 0 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0 = 0/1 = 0/1 = 0 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/1 = 0/
         Code for this paper')
       Backend TkAgg is interactive backend. Turning interactive mode on.
        Waiting 5s.....
12
       Optimize the ./R_40_1.xlsx instance by ECCG for deterministic model
13
14
15
       Set parameter MIPGap to value 0.01
                  Master protblem status = 2, is Optimal and MP obj = 1298.0
16
                                                       ub = inf
17
       The initial lb = -inf
19
       The current iteration cnt = 0
                  The SP model was solved Optimal 2 and SPObj = 1298.0
20
21
                  Deterministic Sub problem Status= 2, is Optimal
                  Master protblem status = 2, is Optimal
                  1b = 2455.0
23
                                                                      ub = 2455.0
                                                              MP_delete_Hua_Obj = 1298.0 Hua = 1157.0
                                                                                                                                                                        SPObj = 1298.0
24
                   MPObj = 2455.0
                                                                                                                                                                                                                    MP\_SP\_Obj = 1157.0
                                                                                                                                                                                                                                                                    Deter_SP_Obj = 1157.0
25
26
       ub - 1b = 0.0
27
28 Iteration cycle stopped by termination criterion 1: Because ub - 1b \le eps, the iteration stop, and eps cm = 0
                                                                                          sol_a_i: 3.0 sol_g_i: 0.0 d_i: 15.0 sol_taoi: 3.0 sol_deltai: 12.0 sol_deltai - sol_taoi: 9.0 sol taoP: 3.0
29
              i: 0.0 1_i: 3.0 p_i: 8.0 aI_i: 3.0
              sol_deltaP: 7.0 sol_deltaP - sol_taoP: 4.0 cl_i: 2372796.0 sol_c_i: 2372796.0 sol_gp_i: 0.0 total work: 2372796.0 wasted work: 0.0
              i: 1.0 1_i: 5.0 p_i: 6.0 aI_i: 24.0
                                                                                                sol_a_i: 24.0 sol_g_i: 0.0 d_i: 34.0 sol_taoi: 24.0 sol_deltai: 31.0 sol_deltai - sol_taoi: 7.0 sol_taoP:
30
       24.0
                       sol_deltaP: 26.0 sol_deltaP - sol_taoP: 2.0 cI_i: 1845508.0
                                                                                                                                                         sol_c_i: 1845508.0 sol_gp_i: 0.0 total work: 1845508.0 wasted work: 0.0
                                                                                              sol a i: 5.0 sol g i: 0.0 d i: 17.0 sol taoi: 5.0 sol deltai: 14.0 sol deltai - sol taoi: 9.0 sol taoP: 5.0
31
             i: 2.0 1_i: 3.0 p_i: 4.0 aI_i: 5.0
              sol_deltaP: 10.0 sol_deltaP - sol_taoP: 5.0 cI_i: 2372796.0 sol_c_i: 2372796.0 sol_gp_i: 0.0 total work: 2504618.0 wasted work: 0.5
32
              i: 3.0 1_i: 3.0 p_i: 0.0 aI_i: 29.0
                                                                                                sol_a_i: 29.0 sol_g_i: 0.0 d_i: 34.0 sol_taoi: 29.0 sol_deltai: 33.0 sol_deltai - sol_taoi: 4.0 sol_taoP:
                       sol_deltaP: 31.0 sol_deltaP - sol_taoP: 2.0 cl_i: 1054576.0 sol_c_i: 1054576.0 sol_gp_i: 0.0 total work: 1054576.0 wasted work: 0.0
33
              i: 4.0 1 i: 3.0 p i: 8.0 aI i: 60.0
                                                                                              sol a i: 60.0 sol g i: 0.0 d i: 64.0 sol taoi: 60.0 sol deltai: 62.0 sol deltai - sol taoi: 2.0 sol taoP:
                       sol_deltaP: 61.0 sol_deltaP - sol_taoP: 1.0 cI_i: 527288.0 sol_c_i: 527288.0 sol_gp_i: 0.0 total work: 527288.0 wasted work: 0.0
        60.0
34
              i: 5.0 l_i: 4.0 p_i: 11.0 al_i: 1.0
                                                                                                     sol_a_i: 1.0 sol_g_i: 0.0 d_i: 11.0 sol_taoi: 1.0 sol_deltai: 10.0 sol_deltai - sol_taoi: 9.0
                 sol_deltaP: 3.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2372796.0 sol_c i: 2372796.0 sol_gp_i: 0.0 total work: 2504618.0 wasted work: 0.5 6.0 l_i: 3.0 p_i: 0.0 al_i: 49.0 sol_a_i: 49.0 sol_g_i: 0.0 d_i: 55.0 sol_taoi: 49.0 sol_deltai - sol_taoi: 6.0 sol_taoP:
35
             i: 6.0 1_i: 3.0 p_i: 0.0 aI i: 49.0
                       sol_deltaP: 52.0 sol_deltaP - sol_taoP: 3.0 cl_i: 1581864.0 sol_e_i: 1581864.0 sol_gp_i: 0.0 total work: 1581864.0 wasted work: 0.0
       49.0
36
              i: 7.0 1_i: 5.0 p_i: 28.0 aI_i: 6.0
                                                                                                     sol_a_i: 6.0 sol_g_i: 0.0 d_i: 18.0 sol_taoi: 6.0 sol_deltai: 15.0 sol_deltai - sol_taoi: 9.0 sol_taoP: 8
                 sol_deltaP: 10.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2372796.0 sol_c_i: 2372796.0 sol_gp_i: 0.0 total work: 2636440.0 wasted work: 1.0
        .0
             i: 8.0 l_i: 6.0 p_i: 0.0 al_i: 24.0 sol_a_i: 24.0 sol_g_i: 0.0 d_i: 29.0 sol_taoi: 24.0 sol_deltai: 27.0 sol_delta
.0 sol_deltaP: 25.0 sol_deltaP - sol_taoP: 1.0 cl_i: 790932.0 sol_c_i: 790932.0 sol_gp_i: 0.0 total work: 790932.0
                                                                                              sol_a_i: 24.0 sol_g_i: 0.0 d_i: 29.0 sol_taoi: 24.0 sol_deltai: 27.0 sol_deltai - sol_taoi: 3.0 sol_taoP:
37
        24.0
                                                                                                                                                                                                                                                                       wasted work: 0.0
             i: 9.0 l_i: 3.0 p_i: 23.0 al_i: 6.0
                                                                                                    sol_a_i: 6.0 sol_g_i: 0.0 d_i: 11.0 sol_taoi: 6.0 sol_deltai: 8.0 sol_deltai - sol_taoi: 2.0 sol_taoP: 6
38
                 sol_deltaP: 7.0 sol_deltaP - sol_taoP: 1.0 cl_i: 527288.0 sol_c_i: 527288.0 sol_gp_i: 0.0 total work: 527288.0
        .0
                                                                                                                                                                                                                                                             wasted work: 0.0
             sol\_a\_i: \ 4.0 \quad sol\_g\_i: \ 0.0 \quad d\_i: \ 14.0 \quad sol\_taoi: \ 4.0 \quad sol\_deltai: \ 13.0 \quad sol\_deltai - sol\_taoi: \ 9.0 \quad sol\_taoP
39
       : 4.0 sol_deltaP: 6.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2372796.0 sol_c_i: 2372796.0 sol_gp_i: 0.0 total work: 2636440.0 wasted work: 1.0 i: 11.0 l_i: 6.0 p_i: 24.0 al_i: 37.0 sol_a_i: 37.0 sol_g_i: 0.0 d_i: 44.0 sol_taoi: 37.0 sol_deltai: 46.0 sol_deltai - sol_taoi: 9.0
        sol_taoP: 37.0 sol_deltaP: 39.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2372796.0 sol_c_i: 2372796.0 sol_gp_i: 0.0 total work: 3691016.0 wasted work
        : 5.0
41
                               1_i: 5.0 p_i: 25.0 aI_i: 27.0
                                                                                                         sol_a_i: 27.0 sol_g_i: 0.0 d_i: 32.0 sol_taoi: 27.0 sol_deltai: 29.0 sol_deltai - sol_taoi: 2.0
       sol_taoP: 27.0 sol_deltaP: 28.0 sol_deltaP - sol_taoP: 1.0 cl_i: 527288.0 sol_c_i: 527288.0 sol_gp_i: 0.0 total work: 527288.0 wasted work: 0.0
        i: 13.0 l i: 6.0 p i: 4.0 aI i: 41.0 sol a i: 41.0 sol g i: 0.0 d i: 52.0 sol taoi: 41.0 sol deltai: 49.0 so
43
             i: 14.0 l_i: 3.0 p_i: 19.0 al_i: 12.0 sol_a_i: 12.0 sol_g_i: 0.0 d_i: 21.0 sol_taoi: 12.0 sol_deltai: 21.0 sol_deltai: 21.0 sol_deltai: 21.0 sol_deltai: 21.0 sol_deltai: 21.0 sol_taoi: 9.0
        sol_taoP: 12.0 sol_deltaP: 15.0 sol_deltaP - sol_taoP: 3.0 cl_i: 2372796.0 sol_c_i: 2372796.0 sol_gp_i: 0.0 total work: 2504618.0 wasted work
        : 0.5
44
              i: 15.0    1_i: 3.0    p_i: 30.0    aI_i: 23.0
                                                                                                         sol_a_i: 23.0 sol_g_i: 0.0 d_i: 31.0 sol_taoi: 23.0 sol_deltai: 29.0 sol_deltai - sol_taoi: 6.0
        sol taoP: 23.0 sol deltaP: 25.0 sol deltaP - sol_taoP: 2.0 cl_i: 1581864.0 sol_c_i: 1581864.0 sol_gp_i: 0.0 total work: 1713686.0 wasted work
45
              sol a i: 34.0 sol g i: 0.0 d i: 40.0 sol taoi: 34.0 sol deltai: 41.0 sol deltai - sol taoi: 7.0 sol taoP
        : 34.0 sol_deltaP: 36.0 sol_deltaP - sol_taoP: 2.0 cl_i: 1845508.0 sol_c_i: 1845508.0 sol_gp_i: 0.0 total work: 1845508.0 wasted work: 0.0
             i: 17.0 1_i: 3.0 p_i: 11.0 al_i: 30.0 sol_a_i: 30.0 sol_g_i: 0.0 d_i: 36.0 sol_taoi: 30.0 sol_deltai: 32.0 sol_deltai - sol_taoi: 2.0
46
       sol_taoP: 30.0 sol_deltaP: 31.0 sol_deltaP - sol_taoP: 1.0 cl_i: 527288.0 sol_c_i: 527288.0 sol_gp_i: 0.0 total work: 790932.0 wasted work: 1.0 i: 18.0 l_i: 3.0 p_i: 8.0 al_i: 50.0 sol_a_i: 50.0 sol_g_i: 0.0 d_i: 53.0 sol_taoi: 50.0 sol_deltai - sol_taoi: 5.0 sol_taoi: 5.0 sol_deltai - sol_taoi: 5.0 sol_taoi: 5.0 sol_deltai - sol_taoi: 5.0 sol_taoi: 
47
              i: 19.0 1_i: 3.0 p_i: 3.0 al_i: 30.0 sol_a_i: 30.0 sol_g_i: 0.0 d_i: 36.0 sol_taoi: 30.0 sol_deltai: 32.0 sol_deltai 32.0 sol_deltai 2.0
48
                                                                                                                                                                                                                                                                                                               sol taoP
        : 30.0 sol_deltaP: 31.0 sol_deltaP - sol_taoP: 1.0 cl_i: 527288.0 sol_c_i: 527288.0 sol_gp_i: 0.0 total work: 527288.0
                                                                                                                                                                                                                                                                       wasted work: 0.0
49
             i: 20.0 1_i: 3.0 p_i: 21.0 aI_i: 30.0
                                                                                                         sol_a_i: 30.0 sol_g_i: 0.0 d_i: 34.0 sol_taoi: 30.0 sol_deltai: 34.0 sol_deltai - sol_taoi: 4.0
        sol_taoP: 30.0 sol_deltaP: 32.0 sol_deltaP - sol_taoP: 2.0 cl_i: 1054576.0 sol_e_i: 1054576.0 sol_gp_i: 0.0 total work: 1450042.0 wasted work
        : 1.5
50
             i: 21.0 1_i: 5.0 p_i: 23.0 aI_i: 10.0
                                                                                                          sol\_a\_i: \ 10.0 \quad sol\_g\_i: \ 0.0 \quad d\_i: \ 15.0 \quad sol\_taoi: \ 10.0 \quad sol\_deltai: \ 12.0 \quad sol\_deltai - sol\_taoi: \ 2.0 \quad so
       sol_taoP: 10.0 sol_deltaP: 11.0 sol_deltaP - sol_taoP: 1.0 cl_i: 527288.0 sol_e_i: 527288.0 sol_gp_i: 0.0 total work: 1054576.0 wasted work: 2.0
             i: 22.0 1_i: 3.0 p_i: 22.0 al_i: 19.0 sol_a_i: 19.0 sol_g_i: 0.0 d_i: 28.0 sol_taoi: 19.0 sol_deltai: 27.0 sol_deltai - sol_taoi: 8.0
        sol_taoP: 19.0 sol_deltaP: 22.0 sol_deltaP - sol_taoP: 3.0 cl_i: 2109152.0 sol_c_i: 2109152.0 sol_gp_i: 0.0 total work: 2768262.0 wasted work
```

```
unknown
              i: 23.0 l_i: 3.0 p_i: 0.0 al_i: 19.0 sol_a_i: 19.0 sol_g_i: 0.0 d_i: 22.0 sol_taoi: 19.0 sol_deltai: 23.0 so
   52
          sol taoP: 19.0 sol deltaP: 21.0 sol deltaP - sol taoP: 2.0 cI i: 1054576.0 sol c i: 1054576.0 sol gp i: 0.0 total work: 1054576.0 wasted work
          : 0.0
              i: 24.0    1_i: 3.0    p_i: 0.0    aI_i: 63.0
                                                                                           sol_a_i: 63.0 sol_g_i: 0.0 d_i: 68.0 sol_taoi: 63.0 sol_deltai: 69.0 sol_deltai - sol_taoi: 6.0
          sol taoP: 63.0 sol deltaP: 66.0 sol deltaP - sol taoP: 3.0 cl i: 1581864.0 sol c i: 1581864.0 sol gp i: 0.0 total work: 1581864.0 wasted work
           : 0.0
                                                                                              sol_a_i: 15.0 sol_g_i: 0.0 d_i: 20.0 sol_taoi: 15.0 sol_deltai: 17.0 sol_deltai - sol_taoi: 2.0
              i: 25.0 1_i: 5.0 p_i: 0.0 aI_i: 15.0
          sol_taoP: 15.0 sol_deltaP: 16.0 sol_deltaP - sol_taoP: 1.0 cl_i: 527288.0 sol_e_i: 527288.0 sol_gp_i: 0.0 total work: 527288.0 wasted work: 0.0
               i: 26.0 1 i: 3.0 p i: 0.0 al i: 43.0 sol a i: 43.0 sol g i: 0.0 d i: 47.0 sol taoi: 43.0 sol deltai: 45.0 sol deltai - sol taoi: 2.0
          sol_taoP: 43.0 sol_deltaP: 44.0 sol_deltaP - sol_taoP: 1.0 cl_i: 527288.0 sol_c_i: 527288.0 sol_gp_i: 0.0 total work: 527288.0 wasted work: 0.0
               i: 27.0 1_i: 5.0 p_i: 2.0 aI_i: 1.0
                                                                                          sol_a_i: 1.0 sol_g_i: 0.0 d_i: 4.0 sol_taoi: 1.0 sol_deltai: 3.0 sol_deltai - sol_taoi: 2.0 sol_taoP: 1.
    56
          0 sol_deltaP: 2.0 sol_deltaP - sol_taoP: 1.0 cl_i: 527288.0 sol_c_i: 527288.0 sol_gp_i: 0.0 total work: 527288.0 wasted work: 0.0
               i: 28.0 l_i: 4.0 p_i: 14.0 al_i: 45.0 sol_a_i: 45.0 sol_g_i: 0.0 d_i: 51.0 sol_taoi: 45.0 sol_deltai: 50.0 sol_deltai - sol_taoi: 5.0
          sol_taoP: 45.0 sol_deltaP: 46.0 sol_deltaP - sol_taoP: 1.0 cl_i: 1318220.0 sol_c_i: 1318220.0 sol_gp_i: 0.0 total work: 1318220.0 wasted work
          : 0.0
                                                                                                 sol_a_i: 60.0 sol_g_i: 0.0 d_i: 66.0 sol_taoi: 60.0 sol_deltai: 63.0 sol_deltai - sol taoi: 3.0
               i: 29.0 1_i: 4.0 p_i: 30.0 al_i: 60.0
          sol_taoP: 60.0 sol_deltaP: 61.0 sol_deltaP - sol_taoP: 1.0 cl_i: 790932.0 sol_c_i: 790932.0 sol_gp_i: 0.0 total work: 1186398.0 wasted work: 1.5
              i: 30.0 l_i: 4.0 p_i: 30.0 al_i: 46.0 sol_a_i: 46.0 sol_g_i: 0.0 d_i: 49.0 sol_taoi: 46.0 sol_deltai: 50.0 sol_deltai - sol_taoi: 4.0
          sol taoP: 46.0 sol deltaP: 47.0 sol deltaP sol taoP: 1.0 cl i: 1054576.0 sol c i: 1054576.0 sol gp i: 0.0 total work: 1054576.0 wasted work
          : 0.0
                                                                                                   sol\_a\_i: \ 0.0 \quad sol\_g\_i: \ 0.0 \quad d\_i: \ 4.0 \quad sol\_taoi: \ 0.0 \quad sol\_deltai: \ 3.0 \quad sol\_deltai - sol\_taoi: \ 3.0 \quad sol\_taoP: \ sol\_taoP
              i: 31.0 1_i: 5.0 p_i: 15.0 al_i: 0.0
          0.0 sol_deltaP: 1.0 sol_deltaP - sol_taoP: 1.0 cI_i: 790932.0 sol_e_i: 790932.0 sol_gp_i: 0.0 total work: 1581864.0 wasted work: 3.0
              i: 32.0 l_i: 5.0 p_i: 16.0 al_i: 24.0 sol_a i: 24.0 sol_g i: 0.0 d_i: 35.0 sol_taoi: 24.0 sol_deltai: 33.0 sol_deltai - sol_taoi: 9.0
          sol taoP: 25.0 sol deltaP: 27.0 sol deltaP - sol taoP: 2.0 cl i: 2372796.0 sol c i: 2372796.0 sol gp i: 0.0 total work: 2504618.0 wasted work
          : 0.5
   62
               i: 33.0 l_i: 4.0 p_i: 0.0 aI_i: 6.0
                                                                                              sol_a_i: 6.0 sol_g_i: 0.0 d_i: 14.0 sol_taoi: 6.0 sol_deltai: 13.0 sol_deltai - sol_taoi: 7.0 sol_taoP:
          6.0 sol_deltaP: 8.0 sol_deltaP - sol_taoP: 2.0 cl_i: 1845508.0 sol_c_i: 1845508.0 sol_gp_i: 0.0 total work: 1845508.0 wasted work: 0.0
              i: 34.0 l_i: 3.0 p_i: 13.0 al_i: 26.0 sol_a_i: 26.0 sol_g_i: 0.0 d_i: 35.0 sol_taoi: 26.0 sol_deltai: 28.0 sol_deltai - sol_taoi: 2.0
          sol_taoP: 26.0 sol_deltaP: 27.0 sol_deltaP - sol_taoP: 1.0 cl_i: 527288.0 sol_c_i: 527288.0 sol_gp_i: 0.0 total work: 527288.0 wasted work: 0.0
               i: 35.0 1_i: 4.0 p_i: 19.0 aI_i: 8.0
                                                                                             sol_a_i: 8.0 sol_g_i: 0.0 d_i: 13.0 sol_taoi: 8.0 sol_deltai: 10.0 sol_deltai - sol_taoi: 2.0
          sol_taoP: 8.0 sol_deltaP: 9.0 sol_deltaP - sol_taoP: 1.0 cl_i: 527288.0 sol_c_i: 527288.0 sol_gp_i: 0.0 total work: 527288.0 wasted work: 0.0 i: 36.0 l_i: 5.0 p_i: 3.0 al_i: 53.0 sol_ai: 53.0 sol_g i: 0.0 d_i: 61.0 sol_taoi: 53.0 sol_deltai: 62.0 sol_deltai: 62.0 sol_deltai: 9.0 sol_taoi: 9.0 sol_taoi: 53.0 sol_deltai - sol_taoi: 2372796.0 sol_c_i: 2372796.0 sol_gp_i: 0.0 total work: 3163728.0 wasted work: 0.0
              i: 37.0 l_i: 4.0 p_i: 11.0 aI_i: 17.0
                                                                                               sol_a_i: 17.0 sol_g_i: 0.0 d_i: 23.0 sol_taoi: 17.0 sol_deltai: 24.0 sol_deltai - sol_taoi: 7.0
          sol_taoP: 17.0 sol_deltaP: 19.0 sol_deltaP - sol_taoP: 2.0 cl_i: 1845508.0 sol_c_i: 1845508.0 sol_gp_i: 0.0 total work: 1977330.0 wasted work
              i: 38.0 1 i: 6.0 p i: 11.0 aI i: 55.0
                                                                                                  sol a i: 55.0 sol g i: 0.0 d i: 63.0 sol taoi: 55.0 sol deltai: 63.0 sol deltai - sol taoi: 8.0
          sol_taoP: 55.0 sol_deltaP: 57.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2109152.0 sol_c_i: 2109152.0 sol_gp_i: 0.0 total work: 3691016.0 wasted work
               i: 39.0 1_i: 6.0 p_i: 18.0 aI_i: 46.0
                                                                                               sol_a_i: 46.0 sol_g_i: 0.0 d_i: 54.0 sol_taoi: 46.0 sol_deltai: 55.0 sol_deltai - sol_taoi: 9.0
          sol_taoP: 46.0 sol_deltaP: 48.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2372796.0 sol_e_i: 2372796.0 sol_gp_i: 0.0 total work: 2504618.0 wasted work
    69 Time: 712.000000
    70
   71
    72
   73
```