```
this paper\Scripts\python.exe" "D:\Python\Pycharm\setroute\PyCharm Community Edition 2021.2.3\plugins\python-ce\helpers\pydev\pydevconsole.py" --mode=
        import sys; print('Python %s on %s' % (sys.version, sys.platform))
        sys.path.extend([F:\\\] ===\\\\3 python_code\\9 Code for this paper', 'E:/1 ===\\3 ===\\1 ===\\1 ===\\1 ===\\1 ===\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 ==\\1 =\\1 ==\\1 ==\\1 ==\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 =\\1 
  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
        main RO CCG ExtendedByMe.py', wdir='E:/1 000/3 0000/1 00000/1 000000/1 000000/1 LW 000/4 000/3
         python code/9 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
13
14
15
                   Master protblem status = 2, is Optimal and MP obj = 1298.0
                                                          ub = inf
       The initial lb = -inf
16
17
        The current iteration cnt = 0
19
                   The SP model was solved Optimal 2 and SPObj = 1298.0
20
                   Deterministic Sub problem Status= 2, is Optimal
21
                   Master protblem status = 2, is Optimal
                                                                          ub = 2509.0
                                                                 MP_delete_Hua_Obj = 1325.0 Hua = 1184.0
23
                    MPObj = 2509.0
                                                                                                                                                                                SPObi = 1298.0
                                                                                                                                                                                                                              Deter SP Obj = 1184.0
24
25
        ub - 1b = 0.0
26
27
        Iteration cycle stopped by termination criterion 1: Because ub - lb \le eps, the iteration stop, and cnt = 0
28
              i: \ 0.0 \ 1\_i: \ 3.0 \ p\_i: \ 20.0 \ aI\_i: \ 3.0
                                                                                                          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
                   sol_deltaP: 6.0 sol_deltaP - sol_taoP: 3.0 cl_i: 2372796.0 sol_c_i: 2372796.0 sol_gp_i: 0.0 total work: 2372796.0 wasted work: 0.0
                                                                                                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:
29
              i: 1.0 1 i: 5.0 p i: 9.0 aI i: 24.0
                                                                                                                                                                 sol_c_i: 1845508.0 sol_gp_i: 0.0 total work: 1845508.0 wasted work: 0.0
                        sol_deltaP: 26.0 sol_deltaP - sol_taoP: 2.0 cl_i: 1845508.0
        24.0
30
              i: 2.0 1_i: 3.0 p_i: 8.0 aI_i: 5.0
                                                                                                     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
              sol_deltaP: 9.0 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
                                                                                                     sol\_a\_i: \ 29.0 \quad sol\_g\_i: \ 0.0 \quad d\_i: \ 34.0 \quad sol\_taoi: \ 29.0 \quad sol\_deltai: \ 33.0 \quad sol\_deltai - sol\_taoi: \ 4.0 \quad sol\_taoP: \ sol\_
              i: \ 3.0 \ 1\_i: \ 3.0 \ p\_i: \ 0.0 \ aI\_i: \ 29.0
31
                        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
              i: 4.0 1_i: 3.0 p_i: 0.0 al_i: 60.0
32
                                                                                                    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_deltaP: 61.0 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 ol_i: 4.0 p_i: 16.0 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_deltai: 10.0 sol_deltai - sol_taoi: 9.0 sol_deltai: 10.0 sol_deltai - sol_taoi: 9.0 sol_deltai: 10.0 sol_deltai - sol_taoi: 1.0 sol_deltai - sol_taoi: 9.0 sol_deltai: 10.0 sol_deltai - sol_taoi: 9.0 sol_deltai: 10.0 sol_deltai - sol_taoi: 9.0 sol_deltai: 10.0 sol_deltai - sol_taoi: 9.0 sol_deltai - sol_
        60.0
33
              i: 5.0 1_i: 4.0 p_i: 16.0 aI_i: 1.0
                    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: 2372796.0 wasted work: 0.0
        i: 6.0 l_i: 3.0 p_i: 6.0 al_i: 49.0 sol_a_i: 49.0 sol_g_i: 0.0 d_i: 55.0 sol_taoi: 49.0 sol_deltai: 55.0 sol
                                                                                                    sol a i: 49.0 sol g i: 0.0 d i: 55.0 sol taoi: 49.0 sol deltai: 55.0 sol deltai - sol taoi: 6.0 sol taoP:
                                                                                                          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
              i \colon \ 7.0 \quad 1\_i \colon \ 5.0 \quad \ p\_i \colon \ 11.0 \quad \  \  aI\_i \colon \ 6.0
35
                    sol_deltaP: 9.0 sol_deltaP - sol_taoP: 2.0 cI_i: 2372796.0
                                                                                                                                                     sol_c_i: 2372796.0 sol_gp_i: 0.0 total work: 2504618.0 wasted work: 0.5
36
                                                                                                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:
              i: 8.0 1_i: 6.0 p_i: 0.0 aI_i: 24.0
                        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
        24.0
                                                                                                                                                                                                                                                                                    wasted work: 0.0
37
              i: 9.0 1_i: 3.0 p_i: 31.0 aI_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_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 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
38
        : 4.0 sol_deltaP: 7.0 sol_deltaP - sol_taoP: 3.0 el_i: 2372796.0 sol_c_i: 2372796.0 sol_gp_i: 0.0 total work: 2372796.0 wasted work: 0.0
39
              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: 3031906.0 wasted work: 2.5
              i: 12.0 1 i: 5.0 p i: 14.0 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
40
        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
41
              sol_a_i: 41.0 sol_g_i: 0.0 d_i: 52.0 sol_taoi: 41.0 sol_deltai: 49.0 sol_deltai - sol_taoi: 8.0 sol_taoP
            41.0 sol_deltaP: 43.0 sol_deltaP - sol_taoP: 2.0 cI_i: 2109152.0 sol_e_i: 2109152.0 sol_gp_i: 0.0 total work: 3559194.0 wasted work: 5.5
                                                                 5.0 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 - sol_taoi: 9.0 sol_taoP sol_deltaP - sol_taoP: 3.0 cl_i: 2372796.0 sol_c_i: 2372796.0 sol_gp_i: 0.0 total work: 2636440.0 wasted work: 1.0
              42
         : 12.0 sol deltaP: 15.0
43
             i: 15.0 1 i: 3.0 p i: 31.0 al 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: 1845508.0 wasted work
44
              i: 16.0    1_i: 4.0    p_i: 12.0    aI_i: 34.0
                                                                                                              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
45
              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
        : 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 1 i: 3.0 p i: 9.0 al i: 50.0 sol a i: 50.0 sol g i: 0.0 d i: 53.0 sol taoi: 50.0 sol deltai: 55.0 sol deltai: 55.0 sol deltai: 55.0 sol deltai: 50.0 so
                                                                                                                                                                                                                                                                                                                              sol taoP
            50.0 sol_deltaP: 52.0 sol_deltaP - sol_taoP: 2.0 cI_i: 1318220.0
                                                                                                                                                               sol_c_i: 1318220.0 sol_gp_i: 0.0 total work: 1318220.0 wasted work: 0.0
                                                                                                                                                                                                                                 sol_deltai: 32.0 sol_deltai - sol_taoi: 2.0
47
              i: 19.0    1_i: 3.0    p_i: 3.0    aI_i: 30.0
                                                                                                         sol_a_i: 30.0 sol_g_i: 0.0 d_i: 36.0 sol_taoi: 30.0
                                                                                                                                                                                                                                                                                                                              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
48
              i: 20.0 1_i: 3.0 p_i: 16.0 aI_i: 30.0
                                                                                                              sol\_a\_i: \ 30.0 \quad sol\_g\_i: \ 0.0 \quad d\_i: \ 34.0 \quad sol\_taoi: \ 30.0 \quad sol\_deltai: \ 34.0 \quad sol\_deltai: \ 4.0
         sol taoP: 30.0 sol deltaP: 32.0
                                                                                   sol deltaP - sol taoP: 2.0 cI i: 1054576.0
                                                                                                                                                                                    sol c i: 1054576.0 sol gp i: 0.0 total work: 1318220.0 wasted work
              i: 21.0 l_i: 5.0 p_i: 27.0 al_i: 10.0
                                                                                                              sol_a_i: 10.0 sol_g_i: 0.0 d_i: 15.0 sol_taoi: 10.0 sol_deltai: 12.0 sol_deltai - sol_taoi: 2.0
        sol_taoP: 10.0 sol_deltaP: 11.0 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: 22.0 l_i: 3.0 p_i: 28.0 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: 27.0 sol_deltai: 27.0 sol_deltai: 8.0
50
        sol taoP: 19.0 sol deltaP: 22.0 sol deltaP - sol taoP: 3.0 cI i: 2109152.0
                                                                                                                                                                                   sol c i: 2109152.0 sol gp i: 0.0 total work: 2372796.0 wasted work
        : 1.0
              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 sol_deltai - sol_taoi: 4.0 sol_taoP
            19.0 sol_deltaP: 21.0 sol_deltaP - sol_taoP: 2.0 cl_i: 1054576.0 sol_e_i: 1054576.0 sol_gp_i: 0.0 total work: 1054576.0 wasted work: 0.0
```

unknown i: 24.0 l_i: 3.0 p_i: 0.0 al_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 so 52 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 53 i: 25.0 l_i: 5.0 p_i: 16.0 al_i: 15.0 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 $sol_taoP: 15.0 \quad sol_deltaP: 16.0 \quad sol_deltaP - sol_taoP: 1.0 \quad cl_i: 527288.0 \quad sol_c_i: 527288.0 \quad sol_gp_i: 0.0 \quad total \ work: 922754.0 \quad wasted \ work: 1.5 \quad sol_deltaP - sol_taoP: 1.0 \quad cl_i: 527288.0 \quad sol_gp_i: 0.0 \quad total \ work: 922754.0 \quad wasted \ work: 1.5 \quad sol_deltaP - sol_taoP: 1.5 \quad sol_taoP: 1.5$ i: 26.0 l_i: 3.0 p_i: 16.0 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 l_i: 5.0 p_i: 6.0 al_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. 55 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: 12.0 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_1: 1318220.0 sol_c_i: 1318220.0 sol_gp_i: 0.0 total work: 1318220.0 wasted work i: 29.0 1 i: 4.0 p i: 18.0 aI i: 60.0 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 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: 790932.0 wasted work: 0.0 i: 30.0 l_i: 4.0 p_i: 16.0 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: 50.0 sol_deltai: 50.0 sol_deltai sol taoP: 46.0 sol deltaP: 47.0 sol deltaP - sol taoP: 1.0 cl i: 1054576.0 sol cl i: 1054576.0 sol gp i: 0.0 total work: 1186398.0 wasted work : 0.5 59 i: 31.0 l_i: 5.0 p_i: 1.0 al_i: 0.0 sol_a_i: 0.0 sol_g_i: 0.0 d_i: 4.0 sol_taoi: 0.0 sol_deltai: 3.0 sol_deltai - sol_taoi: 3.0 sol_taoP: 0. 0 sol_deltaP: 1.0 sol_deltaP - sol_taoP: 1.0 cl_i: 790932.0 sol_c_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: 23.0 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: 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_g_i: 0.0 total work: 2372796.0 wasted work : 0.0 sol_a_i: 9.95436507936508 sol_g_i: 0.7908730158730162 d_i: 14.0 sol_taoi: 10.0 sol_deltai: 17.0 sol deltai - sol taoi: 7.0 sol taoP: 10.0 sol deltaP: 13.0 sol deltaP - sol taoP: 3.0 cl i: 1845508.0 sol c i: 2504618.0 sol gp i: 0. 4166666666666667 total work: 2636440.0 wasted work: 0.5 i: 34.0 l_i: 3.0 p_i: 6.0 al_i: 26.0 sol_a_i: 27.0 sol_g_i: 0.125 d_i: 35.0 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: 790932.0 sol gp i: 0.25 total work: 790932.0 wasted work: sol_a_i: 9.0 sol_g_i: 0.1 d_i: 13.0 sol_taoi: 9.0 sol_deltai: 11.0 sol_deltai - sol_taoi: 2.0 sol_taoP: i: 35.0 l_i: 4.0 p_i: 4.0 aI_i: 8.0 9.0 sol_deltaP: 10.0 sol_deltaP - sol_taoP: 1.0 cl_i: 527288.0 sol_c_i: 1318220.0 sol_gp_i: 0.75 total work: 1318220.0 wasted work: 0.0 i: 36.0 1 i: 5.0 p i: 3.0 aI i: 53.0 sol_a_i: 58.0 sol_g_i: 0.7142857142857143 d_i: 61.0 sol_taoi: 58.0 sol_deltai: 67.0 sol_deltai sol_taoi: 9.0 sol_taoP: 58.0 sol_taoP: 58.0 sol_deltaP: 60.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2372796.0 sol_c_i: 2768262.0 sol_gp_i: 0.21428571428571427 total work: 2900084.0 wasted work: 0.5 sol_a_i: 22.0 sol_g_i: 0.7142857142857143 d_i: 23.0 sol_taoi: 22.0 sol_deltai: 29.0 sol_deltaisol_taoi: 7.0 sol_taoP: 22.0 sol_deltaP: 24.0 sol_deltaP - sol_taoP: 2.0 cl_i: 1845508.0 sol_c_i: 2240974.0 sol_gp_i: 0.75 total work: 2240974.0 wasted work: 0.0 i: 38.0 1_i: 6.0 p_i: 8.0 aI_i: 55.0 sol_a_i: 61.0 sol_g_i: 1.0 d_i: 63.0 sol_taoi: 61.0 sol_deltai: 69.0 sol_deltai - sol_taoi: 8.0 sol taoP: 61.0 sol_deltaP: 63.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2109152.0 sol_c_i: 3295550.0 sol_gp_i: 0.9 total work: 3295550.0 wasted work 0.0 i: 39.0 l_i: 6.0 p_i: 12.0 al_i: 46.0 sol_a_i: 51.0 sol_g_i: 0.555555555555556 d_i: 54.0 sol_taoi: 51.0 sol_deltai: 60.0 sol_deltai sol_taoi: 9.0 sol_taoP: 51.0 sol_deltaP: 54.0 sol_deltaP - sol_taoP: 3.0 cl_i: 2372796.0 sol_c_i: 3889376.723809524 sol_gp_i: 0. 719047619047619 total work: 4218304.0 wasted work: 1.247619047619047 Time: 664.000000 68 69 70 71 72