```
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 = 1/3 = 1 = 1/3 = 1 = 1/3 = 1 = 1/3 = 1 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/3 = 1/
        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 = 2485.0
                                                            MP delete Hua Obj = 1313.0 Hua = 1172.0
23
                  MPObj = 2485.0
                                                                                                                                                                    SPObi = 1298.0
                                                                                                                                                                                                              Deter SP Obj = 1172.0
24
25
       ub - 1b = 0.0
26
       Iteration cycle stopped by termination criterion 1: Because ub - lb \leq eps, the iteration stop, and cnt = 0
27
28
             i: 0.0 1_i: 3.0 p_i: 7.0 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: 3.0
             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: 2504618.0 wasted work: 0.5
                                                                                        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 l_i: 5.0 p_i: 6.0 aI i: 24.0
                      sol_deltaP: 26.0 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
                                                                                             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
30
             i: 2.0 1_i: 3.0 p_i: 4.0 aI_i: 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
             i: 3.0 1_i: 3.0 p_i: 11.0 al_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
31
           29.0 sol_deltaP: 31.0 sol_deltaP - sol_taoP: 2.0 cI_i: 1054576.0 sol_e_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: 1.0 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: 659110.0 wasted work: 0.5 .0 l_i: 4.0 p_i: 10.0 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: 9.0 sol_taoi: 9.0 sol_taoi: 1.0 sol_taoi: 1.0 sol_taoi: 9.0 sol_taoi: 9.0 sol_taoi: 1.0 sol_taoi: 9.0 sol_taoi: 9.0 sol_taoi: 1.0 sol_taoi: 9.0 sol_taoi: 
        60.0
33
             i: 5.0 1_i: 4.0 p_i: 10.0 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: 2636440.0 wasted work: 1.0
       i: 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: 55.0 so
                                                                                                                                                                                                                                                                                                      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 sol_taoP: 6
35
             i: 7.0 l_i: 5.0 p_i: 19.0 aI_i: 6.0
                  sol_deltaP: 9.0 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: 29.0 sol taoi: 24.0 sol deltai: 27.0 sol deltai - sol taoi: 3.0
             i: 8.0 1_i: 6.0 p_i: -0.0 aI_i: 24.0
                                                                                                                                                                                                                                                                                                      sol taoP
        : 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
                                                                                                                                                                                                                                                               wasted work: 0.0
                                                                                                  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
37
             i: 9.0 1_i: 3.0 p_i: 14.0 aI_i: 6.0
               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: 790932.0 wasted work: 1.0
                                                                                                      sol_a_i: 4.0 sol_g_i: 0.0 d_i: 14.0 sol_taoi: 4.0 sol_deltai: 13.0 sol deltai - sol taoi: 9.0
             38
           4.0 sol_deltaP: 6.0 sol_deltaP - sol_taoP: 2.0 el_i: 2372796.0 sol_c_i: 2372796.0 sol_gp_i: 0.0 total work: 2504618.0 wasted work: 0.5
39
             i: 11.0    1_i: 6.0    p_i: -0.0    aI_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_c_i: 2372796.0 sol_gp_i: 0.0 total work: 2636440.0 wasted work
        sol taoP: 37.0 sol deltaP: 39.0 sol deltaP - sol taoP: 2.0 cI i: 2372796.0
40
             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
        sol_taoP: 27.0 sol_deltaP: 28.0 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: 13.0 l_i: 6.0 p_i: 6.0 al_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 sol_deltai - sol_taoi: 8.0 sol_taoP
        : 41.0 sol_deltaP: 43.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2109152.0 sol_c_i: 2109152.0 sol_gp_i: 0.0 total work: 2109152.0 wasted work: 0.0 i: 14.0 l_i: 3.0 p_i: 28.0 al_i: 12.0 sol_a_i: 12.0 sol_g_i: 0.0 d_i: 21.0 sol_taoi: 12.0 sol_deltai - sol_taoi: 9.0
42
        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: 2636440.0 wasted work
        : 1.0
43
             i: 15.0    1_i: 3.0    p_i: 19.0    aI_i: 23.0
                                                                                                       sol\_a\_i: 23.0 \quad sol\_g\_i: 0.0 \quad d\_i: 31.0 \quad sol\_taoi: 23.0 \quad sol\_deltai: 29.0 \quad 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: 1581864.0 wasted work
             44
                                                                                                       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_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
        sol taoP: 34.0 sol deltaP: 36.0
                                                                                                       sol\_a\_i: 30.0 \quad sol\_g\_i: 0.0 \quad d\_i: 36.0 \quad sol\_taoi: 30.0 \quad sol\_deltai: 32.0 \quad sol\_deltai - sol\_taoi: 2.0
45
             i: 17.0    1_i: 3.0    p_i: 19.0    aI_i: 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: 790932.0 wasted work: 1.0
             i: 18.0 1_i: 3.0 p_i: 3.0 aI_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 - sol_taoi: 5.0 sol_taoP
           50.0 sol_deltaP: 52.0 sol_deltaP - sol_taoP: 2.0 cl_i: 1318220.0 sol_c_i: 1318220.0 sol_gp_i: 0.0 total work: 1581864.0 wasted work: 1.0
47
             i: 19.0    1_i: 3.0    p_i: 14.0    aI_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
        sol_taoP: 30.0 sol_deltaP: 31.0 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
             i: 20.0 l_i: 3.0 p_i: 31.0 al_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
49
             i: 21.0 1 i: 5.0 p i: 14.0 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: 1186398.0 wasted work: 2.5
            i: 22.0 1_i: 3.0 p_i: 31.0 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: 22.0 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 s sol taoP: 19.0 sol deltaP: 21.0 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 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 i: 25.0 1_i: 5.0 p_i: -0.0 aI_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 sol_deltaP: 16.0 sol_deltaP - sol_taoP: 1.0 cl_i: 527288.0 sol_c_i: 527288.0 sol_gp_i: 0.0 total work: 1186398.0 wasted work: 2.5 i: 26.0 l_i: 3.0 p_i: 12.0 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: -0.0 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: 1.0 sol deltaP: 2.0 sol deltaP - sol taoP: 1.0 cI i: 527288.0 sol c i: 527288.0 sol gp i: 0.0 total work: 1054576.0 wasted work: 2.0 i: 28.0 l_i: 4.0 p_i: 26.0 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: 13.0 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: 922754.0 wasted work: 0.5 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_e_i: 1054576.0 sol_g_i: 0.0 total work: 1318220.0 wasted work : 1.0 $sol_a_i: \ 0.0 \quad sol_g_i: \ 0.0 \quad d_i: \ 4.0 \quad sol_taoi: \ 0.0 \quad sol_deltai: \ 3.0 \quad sol_deltai - sol_taoi: \ 3.0 \quad sol_taoP: \ sol_taoP$ i: 31.0 1_i: 5.0 p_i: 14.0 aI_i: 0.0 0.0 sol_deltaP: 1.0 sol_deltaP - sol_taoP: 1.0 cl_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: 22.0 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: 33.0 sol_deltai 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 i: 33.0 1_i: 4.0 p_i: -0.0 aI_i: 6.0 sol_a_i: 7.0 sol_g_i: 0.2 d_i: 14.0 sol_taoi: 7.0 sol_deltai: 14.0 sol_deltai - sol_taoi: 7.0 sol taoP: 7.0 sol deltaP: 10.0 sol deltaP - sol taoP: 3.0 cl i: 1845508.0 sol c i: 1977330.0 sol gp i: 0.0833333333333333 total work: 2109152.0 wasted work: 0.5 i: 34.0 l_i: 3.0 p_i: 11.0 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: 28.0 sol_deltaP - sol_taoP: 2.0 cl_i: 527288.0 sol_c_i: 922754.0 sol_gp_i: 0.375 total work: 1054576.0 wasted work: 0.5 i: 35.0 1_i: 4.0 p_i: 28.0 aI i: 8.0 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 63 sol_taoP: 9.0 sol_deltaP: 10.0 sol_deltaP - sol_taoP: 1.0 cI_i: 527288.0 sol_e_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: 17.0 al_i: 53.0 sol_a_i: 58.0 sol_g_i: 0.7142857143 d_i: 61.0 sol_taoi: 58.0 sol_deltai: 67.0 sol_deltai sol_taoi: 9.0 sol_taoP: 58.0 sol_deltaP: 60.0 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 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: 2177260.033333333 sol gp i: 0.629166666666668 total work: 2636440.0 wasted work: 1.7416666666666671 sol_taoi: 8.0 sol_taoP: 57.0 sol_deltaP: 59.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2109152.0 sol_c i: 2900084.0 sol_gp_i: 0.6 total work: 2900084.0 wasted work: 0.0 sol_a_i: 51.871428571428574 sol_g_i: 0.6523809523809524 d_i: 54.0 sol_taoi: 52.0 sol_deltai: 61. i: 39.0 1_i: 6.0 p_i: 28.0 aI_i: 46.0 0 sol deltai - sol taoi: 9.0 sol taoP: 52.0 sol deltaP: 54.0 sol deltaP - sol taoP: 2.0 cI i: 2372796.0 sol c i: 3031906.0 sol gp i: 0.3125 total work: 3427372.0 wasted work: 1.5 Time: 853.000000 69 70 71 72