```
D:\Python\Python\setroute\python.exe "D:\Python\Pycharm\setroute\PyCharm Community Edition 2021.2.3\plugins\python-ce\helpers\pydev\pydevconsole.py" --mode=client --port=26323

import sys; print('Python %s on %s' % (sys.version, sys.platform))
sys.path.extend(['E:\\1 □□ □□_□\\3 □□□_□□\\1 □□□□□□□\\1 □□□□□□□□□\\1_□□□□□□_□□□□\\1_LW _□□□□1\\4 □□□□\\3 python_code\\9 Code for this paper', 'E:/1 □□□□/3 □□□□□/1 □□□□□□/1 □□□□□□□□/1_□□□□□□_□□□□/1_LW _□□□□1/4 □□□□/3 python_code/9 Code for this paper'])

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
>>> runfile('E:/1 □□□□/3 □□□□□/1 □□□□□□□/1 □□□□□□□□□/1_□□□□□□_□□□□/1_LW _□□□□1/4 □□□□/3 python_code/9 Code for this paper/main_RO_CCG_ExtendedByMe.py', wdir='E:/1 □□□□/3 □□□□□/1 □□□□□□□/1 □□□□□□□□□/1_□□□□□□_□□□□/1_LW _□□□□1/4 □□□□/3 python_code/9 Code for this paper')
Backend TkAgg is interactive backend. Turning interactive mode on.
Waiting 5s.....

Optimize the  ./R_12_3.xlsx  instance by ECCG

      Master protblem status =  2 , is Optimal and MP obj =  650.0
The initial lb =  -inf       ub =  inf

The current iteration cnt =  0
      The SP model was solved Optimal 2 and SPObj =  650.0
      Deterministic Sub problem Status=  2 , is Optimal
      Master protblem status =  2 , is Optimal
      lb =  1209.0                  ub =  1209.0
       MPObj =  1209.0       MP_delete_Hua_Obj =  676.0       Hua =  533.0       SPObj =  650.0       Deter_SP_Obj =  533.0

ub - lb =  0.0

Iteration cycle stopped by termination criterion 1: Because ub - lb <= eps, the iteration stop, and cnt =  0
    i: 0.0  l_i: 4.0   p_i: -0.0    al_i: 20.0      sol_a_i: 20.0  sol_g_i: 0.0   d_i: 40.0    sol_taoi: 20.0    sol_deltai: 40.0  sol_deltai - sol_taoi: 20.0  sol_taoP: 20.0  sol_deltaP: 25.0    sol_deltaP - sol_taoP: 5.0  cl_i: 5130207.0    sol_c_i: 5130207.0    sol_gp_i: 0.0  total work: 5272880.0    wasted work: 0.5411577733610474
    i: 1.0  l_i: 7.0   p_i: 9.0   al_i: 18.0      sol_a_i: 18.0  sol_g_i: 0.0   d_i: 35.0    sol_taoi: 18.0    sol_deltai: 35.0  sol_deltai - sol_taoi: 17.0  sol_taoP: 18.0    sol_deltaP: 22.0    sol_deltaP - sol_taoP: 4.0  cl_i: 4417900.0    sol_c_i: 4417900.0    sol_gp_i: 0.0  total work: 5272880.0    wasted work: 3.242933652956259
    i: 2.0  l_i: 4.0   p_i: 2.0   al_i: 63.0      sol_a_i: 63.0  sol_g_i: 0.0   d_i: 83.0    sol_taoi: 63.0    sol_deltai: 84.0  sol_deltai - sol_taoi: 21.0  sol_taoP: 63.0    sol_deltaP: 70.0    sol_deltaP - sol_taoP: 7.0  cl_i: 5501150.0    sol_c_i: 5501150.0    sol_gp_i: 0.0  total work: 5536524.0    wasted work: 0.13417335497868338
    i: 3.0  l_i: 7.0   p_i: 7.0   al_i: 54.0      sol_a_i: 54.0  sol_g_i: 0.0   d_i: 78.0    sol_taoi: 54.0    sol_deltai: 78.0  sol_deltai - sol_taoi: 24.0  sol_taoP: 54.0    sol_deltaP: 58.0    sol_deltaP - sol_taoP: 4.0  cl_i: 6074377.0    sol_c_i: 6074377.0    sol_gp_i: 0.0  total work: 7909320.0    wasted work: 6.959927022803478
    i: 4.0  l_i: 6.0   p_i: 7.0   al_i: 40.0      sol_a_i: 40.0  sol_g_i: 0.0   d_i: 49.0    sol_taoi: 40.0    sol_deltai: 49.0  sol_deltai - sol_taoi: 9.0    sol_taoP: 40.0    sol_deltaP: 43.0    sol_deltaP - sol_taoP: 3.0  cl_i: 2354017.0    sol_c_i: 2354017.0    sol_gp_i: 0.0  total work: 2372796.0    wasted work: 0.071228626481164
    i: 5.0  l_i: 7.0   p_i: 14.0    al_i: 61.0      sol_a_i: 61.0  sol_g_i: 0.0   d_i: 83.0    sol_taoi: 61.0    sol_deltai: 83.0  sol_deltai - sol_taoi: 22.0  sol_taoP: 61.0  sol_deltaP: 66.0    sol_deltaP - sol_taoP: 5.0  cl_i: 5725327.0    sol_c_i: 5725327.0    sol_gp_i: 0.0  total work: 6063812.0    wasted work: 1.283871432689536
    i: 6.0  l_i: 6.0   p_i: 16.0    al_i: 21.0      sol_a_i: 25.0  sol_g_i: 0.8   d_i: 34.0    sol_taoi: 25.0    sol_deltai: 34.0  sol_deltai - sol_taoi: 9.0    sol_taoP: 25.0  sol_deltaP: 27.0    sol_deltaP - sol_taoP: 2.0  cl_i: 2264664.0    sol_c_i: 2581036.8    sol_gp_i: 0.2  total work: 2636440.0    wasted work: 0.2101439820363831
    i: 7.0  l_i: 5.0   p_i: 4.0   al_i: 28.0      sol_a_i: 28.0  sol_g_i: 0.0   d_i: 39.0    sol_taoi: 28.0    sol_deltai: 37.0  sol_deltai - sol_taoi: 9.0    sol_taoP: 28.0    sol_deltaP: 32.0    sol_deltaP - sol_taoP: 4.0  cl_i: 2354218.0    sol_c_i: 3408794.0    sol_gp_i: 1.0  total work: 3427372.0    wasted work: 0.07046623477113077
    i: 8.0  l_i: 5.0   p_i: 29.0    al_i: 53.0      sol_a_i: 62.0  sol_g_i: 0.9   d_i: 70.0    sol_taoi: 62.0    sol_deltai: 79.0  sol_deltai - sol_taoi: 17.0  sol_taoP: 62.0  sol_deltaP: 68.0    sol_deltaP - sol_taoP: 6.0  cl_i: 4419180.0    sol_c_i: 4630095.2    sol_gp_i: 0.2  total work: 4745592.0    wasted work: 0.4380786211709723
    i: 9.0  l_i: 7.0   p_i: 22.0    al_i: 21.0      sol_a_i: 23.0  sol_g_i: 0.2857142857142857  d_i: 40.0    sol_taoi: 23.0    sol_deltai: 41.0  sol_deltai - sol_taoi: 18.0  sol_taoP: 23.0    sol_deltaP: 29.0    sol_deltaP - sol_taoP: 6.0  cl_i: 4635974.0    sol_c_i: 6481482.0    sol_gp_i: 1.0  total work: 6722922.0    wasted work: 0.9157803704996131
    i: 10.0    l_i: 4.0   p_i: 29.0    al_i: 25.0      sol_a_i: 32.0  sol_g_i: 1.0   d_i: 48.0    sol_taoi: 32.0    sol_deltai: 54.0  sol_deltai - sol_taoi: 22.0  sol_taoP: 32.0    sol_deltaP: 37.0    sol_deltaP - sol_taoP: 5.0  cl_i: 5710686.0    sol_c_i: 6027058.8    sol_gp_i: 0.6  total work: 6591100.0    wasted work: 2.13940465172733
    i: 11.0    l_i: 7.0   p_i: -0.0    al_i: 43.0      sol_a_i: 46.68571428571428    sol_g_i: 0.6142857142857143  d_i: 60.0    sol_taoi: 47.0    sol_deltai: 62.0  sol_deltai - sol_taoi: 15.0  sol_taoP: 47.0    sol_deltaP: 56.0    sol_deltaP - sol_taoP: 9.0  cl_i: 3923037.0    sol_c_i: 4713969.0    sol_gp_i: 0.6  total work: 4745592.0    wasted work: 0.1199458360516454
Time: 72.000000
```