```
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=26117

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_2.xlsx  instance by ECCG

      Master protblem status =  2 , is Optimal and MP obj =  605.0
The initial lb =  -inf       ub =  inf

The current iteration cnt =  0
      The SP model was solved Optimal 2 and SPObj =  605.0
      Deterministic Sub problem Status=  2 , is Optimal
      Master protblem status =  2 , is Optimal
      lb =  1104.0                  ub =  1104.0
       MPObj =  1104.0       MP_delete_Hua_Obj =  634.0       Hua =  470.0       SPObj =  605.0       Deter_SP_Obj =  470.0

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:  5.0  p_i:  29.0  aI_i:  38.0  sol_a_i:  38.0  sol_g_i:  0.0  d_i:  63.0  sol_taoi:  38.0  sol_deltai:  63.0  sol_deltai - sol_taoi:  25.0  sol_taoP:  38.0  sol_deltaP:  46.0  sol_deltaP - sol_taoP:  8.0  cI_i:  6559322.0  sol_c_i:  6559322.0  sol_gp_i:  0.0  total work:  6591100.0  wasted work:  0.1205337500568949
    i:  1.0  l_i:  5.0  p_i:  9.0  aI_i:  53.0  sol_a_i:  53.0  sol_g_i:  0.0  d_i:  73.0  sol_taoi:  53.0  sol_deltai:  73.0  sol_deltai - sol_taoi:  20.0  sol_taoP:  53.0  sol_deltaP:  57.0  sol_deltaP - sol_taoP:  4.0  cI_i:  5015904.0  sol_c_i:  5015904.0  sol_gp_i:  0.0  total work:  5272880.0  wasted work:  0.9747083187935246
    i:  2.0  l_i:  7.0  p_i:  7.0  aI_i:  22.0  sol_a_i:  22.0  sol_g_i:  0.0  d_i:  45.0  sol_taoi:  22.0  sol_deltai:  45.0  sol_deltai - sol_taoi:  23.0  sol_taoP:  22.0  sol_deltaP:  26.0  sol_deltaP - sol_taoP:  4.0  cI_i:  5958045.0  sol_c_i:  5958045.0  sol_gp_i:  0.0  total work:  6854744.0  wasted work:  3.40117355221435
    i:  3.0  l_i:  7.0  p_i:  22.0  aI_i:  42.0  sol_a_i:  42.0  sol_g_i:  0.0  d_i:  54.0  sol_taoi:  42.0  sol_deltai:  54.0  sol_deltai - sol_taoi:  12.0  sol_taoP:  42.0  sol_deltaP:  45.0  sol_deltaP - sol_taoP:  3.0  cI_i:  2994620.0  sol_c_i:  2994620.0  sol_gp_i:  0.0  total work:  3031906.0  wasted work:  0.14142555870795467
    i:  4.0  l_i:  7.0  p_i:  -0.0  aI_i:  20.0  sol_a_i:  20.0  sol_g_i:  0.0  d_i:  35.0  sol_taoi:  20.0  sol_deltai:  35.0  sol_deltai - sol_taoi:  15.0  sol_taoP:  20.0  sol_deltaP:  24.0  sol_deltaP - sol_taoP:  4.0  cI_i:  3952650.0  sol_c_i:  3952650.0  sol_gp_i:  0.0  total work:  3954660.0  wasted work:  0.007623917100332266
    i:  5.0  l_i:  4.0  p_i:  14.0  aI_i:  1.0  sol_a_i:  1.0  sol_g_i:  0.0  d_i:  26.0  sol_taoi:  1.0  sol_deltai:  26.0  sol_deltai - sol_taoi:  25.0  sol_taoP:  1.0  sol_deltaP:  8.0  sol_deltaP - sol_taoP:  7.0  cI_i:  6417594.0  sol_c_i:  6417594.0  sol_gp_i:  0.0  total work:  6459278.0  wasted work:  0.15810714448271154
    i:  6.0  l_i:  4.0  p_i:  5.0  aI_i:  50.0  sol_a_i:  50.0  sol_g_i:  0.0  d_i:  61.0  sol_taoi:  50.0  sol_deltai:  59.0  sol_deltai - sol_taoi:  9.0  sol_taoP:  50.0  sol_deltaP:  54.0  sol_deltaP - sol_taoP:  4.0  cI_i:  2232777.0  sol_c_i:  2636440.0  sol_gp_i:  0.25518186139895715  total work:  2636440.0  wasted work:  0.0
    i:  7.0  l_i:  6.0  p_i:  18.0  aI_i:  8.0  sol_a_i:  12.0  sol_g_i:  0.5  d_i:  35.0  sol_taoi:  12.0  sol_deltai:  35.0  sol_deltai - sol_taoi:  23.0  sol_taoP:  12.0  sol_deltaP:  18.0  sol_deltaP - sol_taoP:  6.0  cI_i:  5805311.0  sol_c_i:  6801693.533333332  sol_gp_i:  0.9448181386010421  total work:  6986566.0  wasted work:  0.7012200796022959
    i:  8.0  l_i:  5.0  p_i:  24.0  aI_i:  2.0  sol_a_i:  12.0  sol_g_i:  1.0  d_i:  33.0  sol_taoi:  12.0  sol_deltai:  34.0  sol_deltai - sol_taoi:  22.0  sol_taoP:  12.0  sol_deltaP:  17.0  sol_deltaP - sol_taoP:  5.0  cI_i:  5740633.0  sol_c_i:  6195633.999999999  sol_gp_i:  0.431453968229885  total work:  6195634.0  wasted work:  3.532500548525582e-15
    i:  9.0  l_i:  7.0  p_i:  14.0  aI_i:  64.0  sol_a_i:  70.3  sol_g_i:  0.9  d_i:  83.0  sol_taoi:  71.0  sol_deltai:  84.0  sol_deltai - sol_taoi:  13.0  sol_taoP:  71.0  sol_deltaP:  76.0  sol_deltaP - sol_taoP:  5.0  cI_i:  3327335.0  sol_c_i:  4745592.0  sol_gp_i:  0.7684913855697185  total work:  5272880.0  wasted work:  2.0
    i:  10.0  l_i:  4.0  p_i:  18.0  aI_i:  35.0  sol_a_i:  37.0  sol_g_i:  0.2857142857142857  d_i:  66.0  sol_taoi:  37.0  sol_deltai:  63.0  sol_deltai - sol_taoi:  26.0  sol_taoP:  37.0  sol_deltaP:  48.0  sol_deltaP - sol_taoP:  11.0  cI_i:  6634791.0  sol_c_i:  6906506.614285714  sol_gp_i:  0.5153077905920753  total work:  7250210.0  wasted work:  1.3036647362135532
    i:  11.0  l_i:  4.0  p_i:  1.0  aI_i:  39.0  sol_a_i:  44.48571428571429  sol_g_i:  0.9142857142857143  d_i:  59.0  sol_taoi:  45.0  sol_deltai:  63.0  sol_deltai - sol_taoi:  18.0  sol_taoP:  45.0  sol_deltaP:  51.0  sol_deltaP - sol_taoP:  6.0  cI_i:  4633877.0  sol_c_i:  5536524.0  sol_gp_i:  0.6847468556083203  total work:  5536524.0  wasted work:  0.0
Time: 198.000000
```