```
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=28800

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_15_5.xlsx  instance by ECCG

      Master protblem status =  2 , is Optimal and MP obj =  823.0
The initial lb =  -inf       ub =  inf

The current iteration cnt =  0
      The SP model was solved Optimal 2 and SPObj =  823.0
      Deterministic Sub problem Status=  2 , is Optimal
      Master protblem status =  2 , is Optimal
      lb =  1522.0                  ub =  1522.0
       MPObj =  1522.0       MP_delete_Hua_Obj =  849.0       Hua =  673.0       SPObj =  823.0       Deter_SP_Obj =  673.0

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:  7.0  p_i:  4.0  al_i:  47.0       sol_a_i:  47.0  sol_g_i:  0.0  d_i:  60.0  sol_taoi:  47.0  sol_deltai:  60.0  sol_deltai - sol_taoi:  13.0  sol_taoP:  47.0  sol_deltaP:  51.0  sol_deltaP - sol_taoP:  4.0  cl_i:  3339031.0  sol_c_i:  3339031.0  sol_gp_i:  0.0  total work:  3427372.0  wasted work:  0.3350768460499765
    i:  1.0  l_i:  4.0  p_i:  -0.0  al_i:  56.0       sol_a_i:  56.0  sol_g_i:  0.0  d_i:  78.0  sol_taoi:  56.0  sol_deltai:  78.0  sol_deltai - sol_taoi:  22.0  sol_taoP:  56.0  sol_deltaP:  66.0  sol_deltaP - sol_taoP:  10.0  cl_i:  5742055.0  sol_c_i:  5742055.0  sol_gp_i:  0.0  total work:  5800168.0  wasted work:  0.22042223604557662
    i:  2.0  l_i:  4.0  p_i:  30.0  al_i:  43.0       sol_a_i:  43.0  sol_g_i:  0.0  d_i:  61.0  sol_taoi:  43.0  sol_deltai:  61.0  sol_deltai - sol_taoi:  18.0  sol_taoP:  43.0  sol_deltaP:  49.0  sol_deltaP - sol_taoP:  6.0  cl_i:  4652414.0  sol_c_i:  4652414.0  sol_gp_i:  0.0  total work:  4745592.0  wasted work:  0.3534235560073432
    i:  3.0  l_i:  4.0  p_i:  4.0  al_i:  58.0       sol_a_i:  58.0  sol_g_i:  0.0  d_i:  68.0  sol_taoi:  61.0  sol_deltai:  71.0  sol_deltai - sol_taoi:  10.0  sol_taoP:  61.0  sol_deltaP:  64.0  sol_deltaP - sol_taoP:  3.0  cl_i:  2462743.0  sol_c_i:  2462743.0  sol_gp_i:  0.0  total work:  2636440.0  wasted work:  0.6588316062569222
    i:  4.0  l_i:  6.0  p_i:  20.0  al_i:  49.0       sol_a_i:  49.0  sol_g_i:  0.0  d_i:  75.0  sol_taoi:  49.0  sol_deltai:  75.0  sol_deltai - sol_taoi:  26.0  sol_taoP:  50.0  sol_deltaP:  60.0  sol_deltaP - sol_taoP:  10.0  cl_i:  6797588.0  sol_c_i:  6797588.0  sol_gp_i:  0.0  total work:  7250210.0  wasted work:  1.7167923411873587
    i:  5.0  l_i:  5.0  p_i:  15.0  al_i:  54.0       sol_a_i:  54.0  sol_g_i:  0.0  d_i:  69.0  sol_taoi:  54.0  sol_deltai:  69.0  sol_deltai - sol_taoi:  15.0  sol_taoP:  54.0  sol_deltaP:  57.0  sol_deltaP - sol_taoP:  3.0  cl_i:  3871362.0  sol_c_i:  3871362.0  sol_gp_i:  0.0  total work:  3954660.0  wasted work:  0.3159487794146652
    i:  6.0  l_i:  4.0  p_i:  -0.0  al_i:  34.0       sol_a_i:  34.0  sol_g_i:  0.0  d_i:  52.0  sol_taoi:  34.0  sol_deltai:  52.0  sol_deltai - sol_taoi:  18.0  sol_taoP:  34.0  sol_deltaP:  40.0  sol_deltaP - sol_taoP:  6.0  cl_i:  4616453.0  sol_c_i:  4616453.0  sol_gp_i:  0.0  total work:  4745592.0  wasted work:  0.4898233982188102
    i:  7.0  l_i:  5.0  p_i:  9.0  al_i:  34.0       sol_a_i:  34.0  sol_g_i:  0.0  d_i:  43.0  sol_taoi:  34.0  sol_deltai:  43.0  sol_deltai - sol_taoi:  9.0  sol_taoP:  34.0  sol_deltaP:  36.0  sol_deltaP - sol_taoP:  2.0  cl_i:  2176613.0  sol_c_i:  2176613.0  sol_gp_i:  0.0  total work:  2636440.0  wasted work:  1.7441208599475049
    i:  8.0  l_i:  5.0  p_i:  15.0  al_i:  42.0       sol_a_i:  42.43650793650794  sol_g_i:  0.0873015873015873  d_i:  53.0  sol_taoi:  43.0  sol_deltai:  53.0  sol_deltai - sol_taoi:  10.0  sol_taoP:  43.0  sol_deltaP:  48.0  sol_deltaP - sol_taoP:  5.0  cl_i:  2549600.0  sol_c_i:  3047257.7  sol_gp_i:  0.3146020770432857  total work:  3427372.0  wasted work:  1.4417711004232974
    i:  9.0  l_i:  5.0  p_i:  22.0  al_i:  12.0       sol_a_i:  20.0  sol_g_i:  1.0  d_i:  45.0  sol_taoi:  20.0  sol_deltai:  47.0  sol_deltai - sol_taoi:  27.0  sol_taoP:  20.0  sol_deltaP:  26.0  sol_deltaP - sol_taoP:  6.0  cl_i:  6870143.0  sol_c_i:  7382032.0  sol_gp_i:  0.48539792295671436  total work:  8963896.0  wasted work:  6.0
    i:  10.0  l_i:  4.0  p_i:  27.0  al_i:  12.0       sol_a_i:  17.0  sol_g_i:  0.5  d_i:  39.0  sol_taoi:  17.0  sol_deltai:  38.0  sol_deltai - sol_taoi:  21.0  sol_taoP:  17.0  sol_deltaP:  24.0  sol_deltaP - sol_taoP:  7.0  cl_i:  5311898.0  sol_c_i:  6366474.0  sol_gp_i:  1.0  total work:  6459278.0  wasted work:  0.35200497640757994
    i:  11.0  l_i:  7.0  p_i:  7.0  al_i:  6.0       sol_a_i:  7.0  sol_g_i:  0.14285714285714285  d_i:  28.0  sol_taoi:  7.0  sol_deltai:  24.0  sol_deltai - sol_taoi:  17.0  sol_taoP:  7.0  sol_deltaP:  10.0  sol_deltaP - sol_taoP:  3.0  cl_i:  4313582.0  sol_c_i:  4839019.85  sol_gp_i:  0.2847117704176845  total work:  5009236.0  wasted work:  0.6456287645461318
    i:  12.0  l_i:  6.0  p_i:  14.0  al_i:  12.0       sol_a_i:  17.0  sol_g_i:  0.7142857142857143  d_i:  26.0  sol_taoi:  17.0  sol_deltai:  28.0  sol_deltai - sol_taoi:  11.0  sol_taoP:  17.0  sol_deltaP:  21.0  sol_deltaP - sol_taoP:  4.0  cl_i:  2643137.0  sol_c_i:  2900084.0  sol_gp_i:  0.4872991609898196  total work:  2900084.0  wasted work:  0.0
    i:  13.0  l_i:  7.0  p_i:  27.0  al_i:  57.0       sol_a_i:  63.0  sol_g_i:  1.0  d_i:  72.0  sol_taoi:  63.0  sol_deltai:  78.0  sol_deltai - sol_taoi:  15.0  sol_taoP:  63.0  sol_deltaP:  67.0  sol_deltaP - sol_taoP:  4.0  cl_i:  3695328.0  sol_c_i:  5013548.0  sol_gp_i:  1.0  total work:  5272880.0  wasted work:  0.9836446116733171
    i:  14.0  l_i:  4.0  p_i:  11.0  al_i:  44.0       sol_a_i:  49.0  sol_g_i:  0.5555555555555556  d_i:  67.0  sol_taoi:  49.0  sol_deltai:  72.0  sol_deltai - sol_taoi:  23.0  sol_taoP:  49.0  sol_deltaP:  54.0  sol_deltaP - sol_taoP:  5.0  cl_i:  5952050.0  sol_c_i:  6854744.0  sol_gp_i:  0.42798906859249597  total work:  6854744.0  wasted work:  0.0
Time: 169.000000
```