```
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=26591

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_13_2.xlsx  instance by ECCG

      Master protblem status =  2 , is Optimal and MP obj =  506.0
The initial lb =  -inf       ub =  inf

The current iteration cnt =  0
      The SP model was solved Optimal 2 and SPObj =  506.0
      Deterministic Sub problem Status=  2 , is Optimal
      Master protblem status =  2 , is Optimal
      lb =  938.0                  ub =  938.0
       MPObj =  938.0     MP_delete_Hua_Obj =  530.0       Hua =  408.0       SPObj =  506.0       Deter_SP_Obj =  408.0

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:  6.0   aI_i:  4.0       sol_a_i:  4.0   sol_g_i:  0.0   d_i:  11.0   sol_taoi:  4.0   sol_deltai:  13.0  sol_deltai - sol_taoi:  9.0   sol_taoP:  4.0   sol_deltaP:  9.0   sol_deltaP - sol_taoP:  5.0   cI_i:  2189946.0     sol_c_i:  2189946.0   sol_gp_i:  0.0  total work:  2372796.0   wasted work:  0.693548876515301
    i:  1.0  l_i:  6.0   p_i:  14.0   aI_i:  5.0       sol_a_i:  5.0   sol_g_i:  0.0   d_i:  32.0   sol_taoi:  5.0   sol_deltai:  35.0  sol_deltai - sol_taoi:  30.0  sol_taoP:  5.0   sol_deltaP:  11.0   sol_deltaP - sol_taoP:  6.0   cI_i:  7890144.0     sol_c_i:  7890144.0   sol_gp_i:  0.0  total work:  7909320.0   wasted work:  0.07273444493331917
    i:  2.0  l_i:  6.0   p_i:  -0.0   aI_i:  9.0       sol_a_i:  9.0   sol_g_i:  0.0   d_i:  21.0   sol_taoi:  9.0   sol_deltai:  23.0  sol_deltai - sol_taoi:  14.0  sol_taoP:  9.0   sol_deltaP:  13.0   sol_deltaP - sol_taoP:  4.0   cI_i:  3498038.0     sol_c_i:  3498038.0   sol_gp_i:  0.0  total work:  3691016.0   wasted work:  0.7319643155163782
    i:  3.0  l_i:  5.0   p_i:  8.0   aI_i:  16.0      sol_a_i:  16.0  sol_g_i:  0.0   d_i:  18.0   sol_taoi:  16.0   sol_deltai:  21.0  sol_deltai - sol_taoi:  5.0   sol_taoP:  16.0   sol_deltaP:  18.0   sol_deltaP - sol_taoP:  2.0   cI_i:  1182426.0     sol_c_i:  1182426.0   sol_gp_i:  0.0  total work:  1186398.0   wasted work:  0.0150657705087163
    i:  4.0  l_i:  7.0   p_i:  20.0   aI_i:  20.0      sol_a_i:  20.0  sol_g_i:  0.0   d_i:  29.0   sol_taoi:  20.0   sol_deltai:  26.0  sol_deltai - sol_taoi:  6.0   sol_taoP:  20.0   sol_deltaP:  22.0   sol_deltaP - sol_taoP:  2.0   cI_i:  1340412.0     sol_c_i:  1340412.0   sol_gp_i:  0.0  total work:  1713686.0   wasted work:  1.4158258864226
    i:  5.0  l_i:  6.0   p_i:  27.0   aI_i:  20.0      sol_a_i:  20.0  sol_g_i:  0.0   d_i:  35.0   sol_taoi:  20.0   sol_deltai:  34.0  sol_deltai - sol_taoi:  14.0  sol_taoP:  20.0   sol_deltaP:  23.0   sol_deltaP - sol_taoP:  3.0   cI_i:  3537538.0     sol_c_i:  3537538.0   sol_gp_i:  0.0  total work:  3559194.0   wasted work:  0.08214106901731122
    i:  6.0  l_i:  5.0   p_i:  9.0   aI_i:  23.0      sol_a_i:  23.0  sol_g_i:  0.0   d_i:  28.0   sol_taoi:  23.0   sol_deltai:  27.0  sol_deltai - sol_taoi:  4.0   sol_taoP:  23.0   sol_deltaP:  25.0   sol_deltaP - sol_taoP:  2.0   cI_i:  1001282.0     sol_c_i:  1001282.0   sol_gp_i:  0.0  total work:  1054576.0   wasted work:  0.20214379997269044
    i:  7.0  l_i:  5.0   p_i:  20.0   aI_i:  27.0      sol_a_i:  31.0  sol_g_i:  0.8   d_i:  37.0   sol_taoi:  31.0   sol_deltai:  40.0  sol_deltai - sol_taoi:  9.0   sol_taoP:  31.0   sol_deltaP:  35.0   sol_deltaP - sol_taoP:  4.0   cI_i:  2280832.0     sol_c_i:  2504618.0   sol_gp_i:  0.14146981029974764  total work:  2504618.0   wasted work:  0.0
    i:  8.0  l_i:  7.0   p_i:  1.0   aI_i:  29.0      sol_a_i:  32.0  sol_g_i:  0.37500000000000544   d_i:  37.0   sol_taoi:  32.0   sol_deltai:  37.0  sol_deltai - sol_taoi:  5.0   sol_taoP:  32.0   sol_deltaP:  34.0   sol_deltaP - sol_taoP:  2.0   cI_i:  1257841.0     sol_c_i:  1845508.0   sol_gp_i:  0.5572542898757415  total work:  1845508.0   wasted work:  0.0
    i:  9.0  l_i:  6.0   p_i:  7.0   aI_i:  41.0      sol_a_i:  44.0  sol_g_i:  0.3   d_i:  73.0   sol_taoi:  44.0   sol_deltai:  73.0  sol_deltai - sol_taoi:  29.0  sol_taoP:  44.0   sol_deltaP:  52.0   sol_deltaP - sol_taoP:  8.0   cI_i:  7475471.0     sol_c_i:  8530047.0   sol_gp_i:  1.0  total work:  8700252.0   wasted work:  0.6455864726676882
    i:  10.0   l_i:  7.0   p_i:  -0.0   aI_i:  42.0      sol_a_i:  46.0  sol_g_i:  0.5714285714285714   d_i:  57.0   sol_taoi:  46.0   sol_deltai:  60.0  sol_deltai - sol_taoi:  14.0  sol_taoP:  46.0   sol_deltaP:  51.0   sol_deltaP - sol_taoP:  5.0   cI_i:  3432678.0     sol_c_i:  3691016.0   sol_gp_i:  0.13998205372179368  total work:  3691016.0   wasted work:  0.0
    i:  11.0   l_i:  6.0   p_i:  13.0   aI_i:  48.0      sol_a_i:  52.0  sol_g_i:  0.5714285714285714   d_i:  57.0   sol_taoi:  52.0   sol_deltai:  62.0  sol_deltai - sol_taoi:  10.0  sol_taoP:  52.0   sol_deltaP:  54.0   sol_deltaP - sol_taoP:  2.0   cI_i:  2477129.0     sol_c_i:  2878550.1095238095  sol_gp_i:  0.761293846102717   total work:  3163728.0   wasted work:  1.0816779083771695
    i:  12.0   l_i:  5.0   p_i:  22.0   aI_i:  50.0      sol_a_i:  55.892857142857146  sol_g_i:  0.9821428571428559   d_i:  76.0   sol_taoi:  56.0   sol_deltai:  79.0   sol_deltai - sol_taoi:  23.0  sol_taoP:  56.0   sol_deltaP:  61.0   sol_deltaP - sol_taoP:  5.0   cI_i:  6063361.0     sol_c_i:  7381581.0   sol_gp_i:  1.0  total work:  7513854.0   wasted work:  0.501710640105597
Time: 69.000000
```