```
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=28057

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_14_5.xlsx  instance by ECCG

        Master protblem status =  2 , is Optimal and MP obj =  776.0
The initial lb =  -inf        ub =  inf

The current iteration cnt =  0
        The SP model was solved Optimal 2 and SPObj =  775.0
        Deterministic Sub problem Status=  2 , is Optimal
        Master protblem status =  2 , is Optimal
        lb =  1455.0                    ub =  1455.0
         MPObj =  1455.0        MP_delete_Hua_Obj =  801.0        Hua =  654.0        SPObj =  775.0        Deter_SP_Obj =  654.0

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: 11.0    aI_i: 63.0      sol_a_i: 63.0  sol_g_i: 0.0    d_i: 83.0    sol_taoi: 63.0    sol_deltai: 85.0  sol_deltai - sol_taoi: 22.0  sol_taoP: 63.0  sol_deltaP: 70.0    sol_deltaP - sol_taoP: 7.0  cI_i: 5685627.0    sol_c_i: 5685627.0    sol_gp_i: 0.0  total work: 5931990.0    wasted work: 0.9344532779050538
    i: 1.0  l_i: 4.0   p_i: 6.0   aI_i: 48.0      sol_a_i: 48.0  sol_g_i: 0.0    d_i: 60.0    sol_taoi: 48.0    sol_deltai: 60.0  sol_deltai - sol_taoi: 12.0  sol_taoP: 48.0    sol_deltaP: 54.0    sol_deltaP - sol_taoP: 6.0  cI_i: 2966385.0    sol_c_i: 2966385.0    sol_gp_i: 0.0  total work: 3163728.0    wasted work: 0.7485207325029206
    i: 2.0  l_i: 7.0   p_i: 10.0    aI_i: 34.0      sol_a_i: 34.0  sol_g_i: 0.0    d_i: 58.0    sol_taoi: 34.0    sol_deltai: 58.0  sol_deltai - sol_taoi: 24.0  sol_taoP: 34.0  sol_deltaP: 41.0    sol_deltaP - sol_taoP: 7.0  cI_i: 6130067.0    sol_c_i: 6130067.0    sol_gp_i: 0.0  total work: 6195634.0    wasted work: 0.24869521020770433
    i: 3.0  l_i: 4.0   p_i: 17.0    aI_i: 24.0      sol_a_i: 24.0  sol_g_i: 0.0    d_i: 34.0    sol_taoi: 24.0    sol_deltai: 34.0  sol_deltai - sol_taoi: 10.0  sol_taoP: 24.0  sol_deltaP: 27.0    sol_deltaP - sol_taoP: 3.0  cI_i: 2526126.0    sol_c_i: 2526126.0    sol_gp_i: 0.0  total work: 2636440.0    wasted work: 0.4184202940328625
    i: 4.0  l_i: 6.0   p_i: 28.0    aI_i: 24.0      sol_a_i: 24.0  sol_g_i: 0.0    d_i: 37.0    sol_taoi: 24.0    sol_deltai: 37.0  sol_deltai - sol_taoi: 13.0  sol_taoP: 24.0  sol_deltaP: 28.0    sol_deltaP - sol_taoP: 4.0  cI_i: 3226521.0    sol_c_i: 3226521.0    sol_gp_i: 0.0  total work: 3691016.0    wasted work: 1.7618265539894706
    i: 5.0  l_i: 5.0   p_i: 21.0    aI_i: 12.0      sol_a_i: 12.0  sol_g_i: 0.0    d_i: 24.0    sol_taoi: 12.0    sol_deltai: 24.0  sol_deltai - sol_taoi: 12.0  sol_taoP: 12.0  sol_deltaP: 14.0    sol_deltaP - sol_taoP: 2.0  cI_i: 3071421.0    sol_c_i: 3071421.0    sol_gp_i: 0.0  total work: 3163728.0    wasted work: 0.35011985859719924
    i: 6.0  l_i: 7.0   p_i: 16.0    aI_i: 59.0      sol_a_i: 59.0  sol_g_i: 0.0    d_i: 68.0    sol_taoi: 59.0    sol_deltai: 68.0  sol_deltai - sol_taoi: 9.0    sol_taoP: 59.0  sol_deltaP: 61.0    sol_deltaP - sol_taoP: 2.0  cI_i: 2270212.0    sol_c_i: 2270212.0    sol_gp_i: 0.0  total work: 2372796.0    wasted work: 0.38910045364203244
    i: 7.0  l_i: 4.0   p_i: 23.0    aI_i: 64.0      sol_a_i: 68.0  sol_g_i: 0.8    d_i: 78.0    sol_taoi: 68.0    sol_deltai: 79.0  sol_deltai - sol_taoi: 11.0  sol_taoP: 68.0  sol_deltaP: 72.0    sol_deltaP - sol_taoP: 4.0  cI_i: 2842416.0    sol_c_i: 3993788.035714286    sol_gp_i: 0.7278577903753329    total work: 4086482.0    wasted work: 0.3515876116494746
    i: 8.0  l_i: 7.0   p_i: 27.0    aI_i: 55.0      sol_a_i: 58.0  sol_g_i: 0.37500000000000583    d_i: 77.0    sol_taoi: 58.0    sol_deltai: 73.0  sol_deltai - sol_taoi: 15.0  sol_taoP: 58.0    sol_deltaP: 62.0    sol_deltaP - sol_taoP: 4.0  cI_i: 3884867.0    sol_c_i: 3884867.0    sol_gp_i: 0.0  total work: 4086482.0    wasted work: 0.7647244010863133
    i: 9.0  l_i: 6.0   p_i: 1.0   aI_i: 17.0      sol_a_i: 20.0  sol_g_i: 0.3    d_i: 41.0    sol_taoi: 20.0    sol_deltai: 39.0  sol_deltai - sol_taoi: 19.0  sol_taoP: 20.0    sol_deltaP: 26.0    sol_deltaP - sol_taoP: 6.0  cI_i: 4769143.0    sol_c_i: 5823719.0    sol_gp_i: 1.0  total work: 6063812.0    wasted work: 0.9106712081443158
    i: 10.0    l_i: 6.0   p_i: -0.0    aI_i: 48.0      sol_a_i: 52.0  sol_g_i: 0.5714285714285714    d_i: 72.0    sol_taoi: 52.0    sol_deltai: 71.0  sol_deltai - sol_taoi: 19.0  sol_taoP: 52.0    sol_deltaP: 58.0    sol_deltaP - sol_taoP: 6.0  cI_i: 4803133.0    sol_c_i: 5009236.0    sol_gp_i: 0.11167819375478188    total work: 5009236.0    wasted work: 0.0
    i: 11.0    l_i: 6.0   p_i: 28.0    aI_i: 34.0      sol_a_i: 40.0  sol_g_i: 0.8571428571428571    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  cI_i: 2293605.0    sol_c_i: 2820893.0    sol_gp_i: 1.0  total work: 3559194.0    wasted work: 2.8003709547723443
    i: 12.0    l_i: 5.0   p_i: 6.0   aI_i: 61.0      sol_a_i: 63.0  sol_g_i: 0.3333333333333333    d_i: 74.0    sol_taoi: 63.0    sol_deltai: 73.0  sol_deltai - sol_taoi: 10.0  sol_taoP: 63.0    sol_deltaP: 66.0    sol_deltaP - sol_taoP: 3.0  cI_i: 2467068.0    sol_c_i: 3163728.0    sol_gp_i: 0.528485381802734    total work: 3163728.0    wasted work: 0.0
    i: 13.0    l_i: 7.0   p_i: 21.0    aI_i: 19.0      sol_a_i: 25.867857142856803    sol_g_i: 0.7630952380952003    d_i: 49.0    sol_taoi: 26.0    sol_deltai: 51.0  sol_deltai - sol_taoi: 25.0  sol_taoP: 27.0    sol_deltaP: 32.0    sol_deltaP - sol_taoP: 5.0  cI_i: 6576381.0    sol_c_i: 7909320.0    sol_gp_i: 0.6319786340671512    total work: 8172964.0    wasted work: 1.0
Time: 145.000000
```