```
"E:\1 □□□□\3 □□□□□\1 □□□□□□\1 □□□□□□□\1_□□□□□□_□□□□\1_LW _□□□□\4 □□□□\3 python_code\1 exzample\2 □□□□□□\9 Code for this paper\Scripts\python.exe" "D:\Python\Pycharm\setroute\PyCharm Community Edition 2021.2.3\plugins\python-ce\helpers\pydev\pydevconsole.py" --mode=client --port=41143

import sys; print('Python %s on %s' % (sys.version, sys.platform))
sys.path.extend(['E:\\1 □□□□\\3 □□□□□□\\1 □□□□□□□\\1 □□□□□□□□□\\1_□□□□□□_□□□□\\1_LW _□□□□\\4 □□□□\\3 python_code\\9 Code for this paper', 'E:/1 □□□□/3 □□□□□/1 □□□□□□/1 □□□□□□□/1_□□□□□□_□□□□/1_LW _□□□□/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 _□□□□/4 □□□□/3 python_code/9 Code for this paper/main_DM.py', wdir='E:/1 □□□□/3 □□□□□/1 □□□□□□□/1 □□□□□□□□□/1_□□□□□□_□□□□/1_LW _□□□□/4 □□□□/3 python_code/9 Code for this paper')
Backend TkAgg is interactive backend. Turning interactive mode on.
Waiting 5s.....

Optimize the  ./R_20_1.xlsx  instance

Set parameter TimeLimit to value 1200

Set parameter PoolSolutions to value 3
Set parameter PoolGap to value 0.05
Set parameter PoolSearchMode to value 2
Gurobi Optimizer version 11.0.0 build v11.0.0rc2 (win64 - Windows 10.0 (19045.2))

CPU model: 11th Gen Intel(R) Core(TM) i7-11370H @ 3.30GHz, instruction set [SSE2|AVX|AVX2|AVX512]
Thread count: 4 physical cores, 8 logical processors, using up to 8 threads

Optimize a model with 992692 rows, 167540 columns and 2956300 nonzeros
Model fingerprint: 0xe754a3be
Variable types: 0 continuous, 167540 integer (142200 binary)
Coefficient statistics:
  Matrix range     [1e+00, 5e+05]
  Objective range  [1e+00, 1e+00]
  Bounds range     [1e+00, 1e+00]
  RHS range        [1e+00, 3e+06]
Presolve removed 918879 rows and 8934 columns
Presolve time: 0.47s
Presolved: 73813 rows, 158606 columns, 221147 nonzeros
Variable types: 0 continuous, 158606 integer (133266 binary)
Root relaxation presolved: 57214 rows, 158775 columns, 168719 nonzeros

Deterministic concurrent LP optimizer: primal and dual simplex
Showing primal log only...

Concurrent spin time: 0.00s

Solved with dual simplex

Root relaxation: objective 8.504087e+02, 4900 iterations, 0.56 seconds (0.54 work units)

    Nodes    |    Current Node    |     Objective Bounds      |     Work
 Expl Unexpl |  Obj  Depth IntInf | Incumbent    BestBd   Gap | It/Node Time

     0     0  850.40874    0 3079          -  850.40874      -     -    3s
H    0     0                2020.0000000  850.40874  57.9%     -    3s
H    0     0                1692.0000000  850.40874  49.7%     -    3s
H    0     0                1689.0000000  850.40874  49.7%     -    5s
H    0     0                1682.0000000  850.40874  49.4%     -    5s
H    0     0                1628.0000000  892.89050  45.2%     -    5s
     0     0  892.89050    0 2750 1628.00000  892.89050  45.2%     -    5s
H    0     0                1567.0000000  892.90462  43.0%     -   10s
     0     0  909.26170    0 3007 1567.00000  909.26170  42.0%     -   10s
     0     0  909.65656    0 2999 1567.00000  909.65656  41.9%     -   10s
     0     0  909.65656    0 3052 1567.00000  909.65656  41.9%     -   10s
     0     0  909.65656    0 3052 1567.00000  909.65656  41.9%     -   11s
     0     0  909.69638    0 3052 1567.00000  909.69638  41.9%     -   11s
     0     0  909.69638    0 3052 1567.00000  909.69638  41.9%     -   11s
     0     0  909.69638    0 3052 1567.00000  909.69638  41.9%     -   11s
     0     0  909.72548    0 3052 1567.00000  909.72548  41.9%     -   11s
     0     0  911.72850    0 2441 1567.00000  911.72850  41.8%     -   12s
     0     0  912.29734    0 2856 1567.00000  912.29734  41.8%     -   12s
     0     0  912.65393    0 2869 1567.00000  912.65393  41.8%     -   13s
     0     0  912.70198    0 2866 1567.00000  912.70198  41.8%     -   13s
     0     0  912.71112    0 2867 1567.00000  912.71112  41.8%     -   13s
     0     0  918.09500    0 2421 1567.00000  918.09500  41.4%     -   15s
     0     0  918.67029    0 2385 1567.00000  918.67029  41.4%     -   16s
     0     0  918.89240    0 2637 1567.00000  918.89240  41.4%     -   16s
     0     0  918.99542    0 2628 1567.00000  918.99542  41.4%     -   16s
     0     0  919.04361    0 2637 1567.00000  919.04361  41.4%     -   16s
     0     0  919.04934    0 2630 1567.00000  919.04934  41.3%     -   16s
     0     0  921.88921    0 2182 1567.00000  921.88921  41.2%     -   18s
     0     0  922.55694    0 2373 1567.00000  922.55694  41.1%     -   19s
```

80		0	0	922.66758	0	2485	1567.00000	922.66758	41.1%	-	19s
81		0	0	922.68857	0	2475	1567.00000	922.68857	41.1%	-	19s
82		0	0	923.03574	0	2290	1567.00000	923.03574	41.1%	-	20s
83		0	0	923.09040	0	2373	1567.00000	923.09040	41.1%	-	21s
84		0	0	923.09827	0	2427	1567.00000	923.09827	41.1%	-	21s
85		0	0	923.39060	0	2260	1567.00000	923.39060	41.1%	-	22s
86		0	0	923.42233	0	2079	1567.00000	923.42233	41.1%	-	23s
87		0	2	923.44022	0	2057	1567.00000	923.44022	41.1%	-	28s
88	H	27	30				1547.0000000	923.79997	40.3%	352	51s
89	H	29	30				1546.0000000	923.79997	40.2%	328	51s
90		322	339	928.49194	74	2181	1546.00000	923.79997	40.2%	41.4	55s
91		709	730	935.72657	167	2084	1546.00000	923.79997	40.2%	32.4	60s
92		1066	1099	998.66591	236	2024	1546.00000	923.79997	40.2%	34.3	65s
93		1513	1598	1014.54778	323	1908	1546.00000	923.79997	40.2%	36.5	70s
94		1944	2017	1081.96546	433	1665	1546.00000	923.79997	40.2%	38.1	81s
95		2395	2529	1134.27873	528	1535	1546.00000	923.79997	40.2%	37.4	86s
96		2713	2740	1147.35104	605	1264	1546.00000	923.79997	40.2%	37.5	92s
97		2828	2955	1148.95877	639	1129	1546.00000	923.79997	40.2%	39.4	96s
98		3043	3160	1155.10842	686	1090	1546.00000	923.79997	40.2%	39.0	100s
99		3255	3410	1164.18698	737	1054	1546.00000	923.79997	40.2%	38.7	106s
100		3509	3662	1168.00000	789	942	1546.00000	923.79997	40.2%	37.8	114s
101		3566	3662	1225.03105	785	788	1546.00000	923.79997	40.2%	37.8	115s
102		3761	3901	1171.00000	844	869	1546.00000	923.79997	40.2%	37.1	122s
103		4004	4104	1248.00000	900	788	1546.00000	923.79997	40.2%	36.5	130s
104		4222	4303	1182.00000	940	791	1546.00000	923.79997	40.2%	36.6	138s
105		4464	4539	infeasible	1003		1546.00000	923.79997	40.2%	36.7	146s
106		4709	4819	1255.00000	1065	725	1546.00000	923.79997	40.2%	36.7	155s
107		4992	5106	1259.00000	1116	697	1546.00000	923.79997	40.2%	36.3	164s
108		5281	4609	997.11045	180	28662	1546.00000	923.79997	40.2%	36.1	213s
109		5283	4610	1234.00000	749	1872	1546.00000	964.00000	37.6%	36.1	253s
110	H	5283	4379				1544.0000000	1458.07832	5.56%	36.1	288s
111		5285	4162	1459.00000	468	285	1544.00000	1459.00000	5.51%	36.1	328s
112		5286	4162	1459.03576	70	234	1544.00000	1459.03576	5.50%	36.1	331s
113		5289	4164	1461.00000	464	209	1544.00000	1461.00000	5.38%	36.1	335s
114	H	5291	3760				1543.0000000	1461.26064	5.30%	36.0	338s
115		5293	3761	1463.00000	325	372	1543.00000	1463.00000	5.18%	36.0	340s
116	H	5295	3573				1542.0000000	1463.00000	5.12%	36.0	341s
117	H	5296	3395				1541.0000000	1463.60169	5.02%	36.0	345s
118		5306	3402	1464.71325	114	914	1541.00000	1464.71325	4.95%	35.9	350s
119		5314	3407	1468.50893	410	1126	1541.00000	1468.50893	4.70%	35.9	355s
120		5322	3412	1471.34664	161	1154	1541.00000	1471.34664	4.52%	35.8	360s
121		5328	3416	1471.43034	158	1155	1541.00000	1471.43034	4.51%	35.8	365s
122	H	5328	3245				1540.0000000	1472.27797	4.40%	35.8	365s
123		5333	3249	1472.35975	700	1137	1540.00000	1472.35975	4.39%	35.8	370s
124		5344	3256	1472.60567	287	1109	1540.00000	1472.60567	4.38%	35.7	376s
125		5349	3259	1472.79991	359	1140	1540.00000	1472.79991	4.36%	35.6	382s
126		5362	3268	1473.08648	521	1230	1540.00000	1473.08648	4.35%	35.6	389s
127		5363	3269	1473.22898	553	998	1540.00000	1473.22898	4.34%	35.6	390s
128		5369	3108	1473.26625	942	1124	1540.00000	1473.26625	4.33%	35.5	395s
129		5376	3112	1473.41284	166	1131	1540.00000	1473.41284	4.32%	35.5	402s
130		5377	3113	1473.51989	118	1129	1540.00000	1473.51989	4.32%	35.5	406s
131		5380	3115	1473.53083	449	1101	1540.00000	1473.53083	4.32%	35.4	410s
132		5388	3120	1473.82719	261	1196	1540.00000	1473.82719	4.30%	35.4	418s
133		5392	3123	1474.04326	1168	1174	1540.00000	1474.04326	4.28%	35.4	420s
134		5397	3126	1474.12922	545	1125	1540.00000	1474.12922	4.28%	35.3	426s
135		5406	3132	1474.16820	114	1289	1540.00000	1474.16820	4.27%	35.3	433s
136		5407	3133	1474.26483	172	1388	1540.00000	1474.26483	4.27%	35.3	448s
137	H	5407	2974				1539.0000000	1474.32733	4.20%	35.3	449s
138		5412	2977	1474.36659	509	1247	1539.00000	1474.36659	4.20%	35.2	450s
139		5418	2981	1474.46775	422	1353	1539.00000	1474.46775	4.19%	35.2	456s
140		5425	2986	1474.50906	31	1213	1539.00000	1474.50906	4.19%	35.1	460s
141		5426	2987	1474.50911	285	1210	1539.00000	1474.50911	4.19%	35.1	470s
142		5431	2990	1474.60103	481	1378	1539.00000	1474.60103	4.18%	35.1	475s
143		5434	2992	1474.60216	207	1395	1539.00000	1474.60216	4.18%	35.1	499s
144		5435	2993	1474.69451	709	1229	1539.00000	1474.69451	4.18%	35.1	503s
145		5436	2993	1474.72508	476	1316	1539.00000	1474.72508	4.18%	35.1	506s
146		5438	2995	1474.73772	494	1292	1539.00000	1474.73772	4.18%	35.1	510s
147	H	5440	2843				1538.0000000	1474.74642	4.11%	35.1	515s
148		5443	2845	1474.74715	442	1313	1538.00000	1474.74715	4.11%	35.0	540s
149		5444	2846	1474.85690	287	1275	1538.00000	1474.85690	4.11%	35.0	545s
150		5447	2848	1474.93550	369	1276	1538.00000	1474.93550	4.10%	35.0	550s
151		5451	2850	1474.94251	546	1329	1538.00000	1474.94251	4.10%	35.0	555s
152		5453	2852	1474.94292	217	1335	1538.00000	1474.94292	4.10%	35.0	579s
153		5454	2852	1475.02612	529	1195	1538.00000	1475.02612	4.09%	35.0	585s
154		5457	2854	1475.07816	941	1292	1538.00000	1475.07816	4.09%	34.9	590s
155		5463	2858	1475.08116	553	1317	1538.00000	1475.08116	4.09%	34.9	595s
156		5464	2859	1475.08120	473	1326	1538.00000	1475.08120	4.09%	34.9	622s
157		5465	2860	1475.15821	502	1274	1538.00000	1475.15821	4.09%	34.9	626s
158		5467	2861	1475.21898	1076	1123	1538.00000	1475.21898	4.08%	34.9	630s
159		5471	2864	1475.23600	337	1245	1538.00000	1475.23600	4.08%	34.9	635s
160		5475	2866	1475.23773	869	1205	1538.00000	1475.23773	4.08%	34.8	663s
161		5476	2867	1475.34763	166	1344	1538.00000	1475.34763	4.07%	34.8	667s
162		5478	2868	1475.46228	910	1308	1538.00000	1475.46228	4.07%	34.8	672s
163		5480	2870	1475.48089	449	1257	1538.00000	1475.48089	4.06%	34.8	675s

```
 5484  2872 1475.48643  796 1298 1538.00000 1475.48643  4.06%  34.8  681s
 5487  2874 1475.48732  159 1277 1538.00000 1475.48732  4.06%  34.8  697s
 5490  2876 1475.65489  309 1412 1538.00000 1475.65489  4.05%  34.7  700s
 5498  2882 1475.68317  222 1480 1538.00000 1475.68317  4.05%  34.7  709s
 5499  2882 1475.75879  628 1472 1538.00000 1475.75879  4.05%  34.7  710s
 5507  2888 1475.81774  172 1484 1538.00000 1475.81774  4.04%  34.6  721s
 5511  2890 1476.00613  170 1473 1538.00000 1476.00613  4.03%  34.6  725s
 5517  2894 1476.01886  859 1434 1538.00000 1476.01886  4.03%  34.6  736s
 5522  2898 1476.22158  161 1407 1538.00000 1476.22158  4.02%  34.5  740s
 5531  2904 1476.22512  481 1449 1538.00000 1476.22512  4.02%  34.5  750s
 5535  2906 1476.48419  709 1390 1538.00000 1476.48419  4.00%  34.4  755s
 5540  2910 1476.49105  258 1439 1538.00000 1476.49105  4.00%  34.4  765s
H 5543  2762                    1537.0000000 1476.74442  3.92%  34.4  769s
 5545  2763 1476.74696  692 1346 1537.00000 1476.74696  3.92%  34.4  770s
H 5545  2621                    1536.0000000 1476.74775  3.86%  34.4  770s
 5551  2625 1476.74919  546 1410 1536.00000 1476.74919  3.86%  34.3  782s
 5554  2627 1476.98988  529 1300 1536.00000 1476.98988  3.84%  34.3  785s
H 5557  2493                    1535.0000000 1477.00602  3.78%  34.3  787s
 5561  2496 1477.00767  961 1343 1535.00000 1477.00767  3.78%  34.3  798s
H 5561  2366                    1534.0000000 1477.08561  3.71%  34.3  799s
 5563  2367 1477.14776  553 1476 1534.00000 1477.14776  3.71%  34.3  800s
 5572  2373 1477.17312   20 1443 1534.00000 1477.17312  3.70%  34.2  805s
 5574  2374 1477.17365  236 1471 1534.00000 1477.17365  3.70%  34.2  817s
 5575  2375 1477.25872  869 1471 1534.00000 1477.25872  3.70%  34.2  820s
 5577  2376 1477.30127  118 1447 1534.00000 1477.30127  3.70%  34.2  825s
 5582  2380 1477.31619  547 1373 1534.00000 1477.31619  3.70%  34.2  830s
 5585  2382 1477.31705  468 1446 1534.00000 1477.31705  3.70%  34.1  885s
 5586  2382 1477.40944   70 1554 1534.00000 1477.40944  3.69%  34.1  892s
 5587  2383 1477.43203  159 1661 1534.00000 1477.43203  3.69%  34.1  896s
 5588  2384 1477.44551  261 1578 1534.00000 1477.44551  3.69%  34.1  903s
 5589  2384 1477.45400  464 1552 1534.00000 1477.45400  3.69%  34.1  906s
 5591  2386 1477.45733  176 1470 1534.00000 1477.45733  3.69%  34.1  911s
 5594  2388 1477.45835  690 1438 1534.00000 1477.45835  3.69%  34.1  915s
 5595  2388 1477.45846  237 1449 1534.00000 1477.45846  3.69%  34.1  970s
H 5595  2264                    1533.0000000 1477.49121  3.62%  34.1 1051s
 5603  2151 1477.52649  262 1526 1533.00000 1477.52649  3.62%  34.0 1055s
 5604  2151 1477.52665  375 1574 1533.00000 1477.52665  3.62%  34.0 1064s
 5605  2152 1477.55544  347 1395 1533.00000 1477.55544  3.62%  34.0 1065s
 5616  2159 1477.59745 1063 1484 1533.00000 1477.59745  3.61%  34.0 1078s
 5618  2161 1477.65807  422 1462 1533.00000 1477.65807  3.61%  33.9 1080s
 5629  2168 1477.67300  847 1550 1533.00000 1477.67300  3.61%  33.9 1096s
 5636  2173 1477.71506  476 1645 1533.00000 1477.71506  3.61%  33.8 1100s
 5638  2174 1477.71563  494 1606 1533.00000 1477.71563  3.61%  33.8 1113s
 5640  2175 1477.75612  258 1606 1533.00000 1477.75612  3.60%  33.8 1115s
 5648  2181 1477.79311 1146 1716 1533.00000 1477.79311  3.60%  33.8 1132s
 5649  2181 1477.81118  359 1368 1533.00000 1477.81118  3.60%  33.8 1137s
 5653  2184 1477.83234  217 1550 1533.00000 1477.83234  3.60%  33.7 1140s
 5656  2186 1477.83398  309 1592 1533.00000 1477.83398  3.60%  33.7 1154s
 5657  2187 1477.85646  941 1546 1533.00000 1477.85646  3.60%  33.7 1174s
 5658  2187 1477.87288 1091 1475 1533.00000 1477.87288  3.60%  33.7 1176s
 5661  2189 1477.88105  961 1405 1533.00000 1477.88105  3.60%  33.7 1180s

Cutting planes:
  Learned: 332
  Gomory: 13
  Lift-and-project: 19
  Cover: 14
  Implied bound: 128
  Projected implied bound: 2
  Clique: 1
  MIR: 442
  StrongCG: 33
  Flow cover: 1124
  Zero half: 99
  RLT: 49
  Relax-and-lift: 3197

Explored 5666 nodes (473846 simplex iterations) in 1205.30 seconds (459.80 work units)
Thread count was 8 (of 8 available processors)

Solution count 3: 1533 1533 1534

Time limit reached
Best objective 1.533000000000e+03, best bound 1.478000000000e+03, gap 3.5877%

Output one feasible solution with limited computation time

Optimization was stopped with status 9

Number of solution stored: 3
    1533    1533    1534

Obj = 1533.0
```

Solutions:
The total pi = 302.0
The total duration time in berth stage = 176.0
The total duration time in quay crane scheduling stage = 43.0
The total departure time in berth stage= 833.0
The total departure time in quay crane scheduling stage = 700.0
The total wasted crane work hour according QC0= 20.571414483166695
The last depature time in quay crane scheduling stage = 70.0

The specific solution are as follows:

Vessel i: 0 li: 5, pi: 9-14, ai-di: 64-75, taoi-deltai: 64-75, periodi: 11, taoPi_SP-deltaPi_SP: 64-66, periodPi: 2, c_i: 2461678, dowork: 2504618, fa_i: 4
Vessel i: 1 li: 6, pi: 13-19, ai-di: 12-20, taoi-deltai: 12-21, periodi: 9, taoPi_SP-deltaPi_SP: 12-14, periodPi: 2, c_i: 1987031, dowork: 2240974, fa_i: 4
Vessel i: 2 li: 6, pi: 27-33, ai-di: 63-76, taoi-deltai: 63-73, periodi: 10, taoPi_SP-deltaPi_SP: 63-65, periodPi: 2, c_i: 2239066, dowork: 2240974, fa_i: 4
Vessel i: 3 li: 5, pi: 14-19, ai-di: 67-78, taoi-deltai: 67-78, periodi: 11, taoPi_SP-deltaPi_SP: 67-70, periodPi: 3, c_i: 2634265, dowork: 2768262, fa_i: 2
Vessel i: 4 li: 6, pi: 0-6, ai-di: 58-66, taoi-deltai: 58-65, periodi: 7, taoPi_SP-deltaPi_SP: 58-60, periodPi: 2, c_i: 1408749, dowork: 1581864, fa_i: 4
Vessel i: 5 li: 7, pi: 25-32, ai-di: 8-19, taoi-deltai: 8-18, periodi: 10, taoPi_SP-deltaPi_SP: 8-11, periodPi: 3, c_i: 2138353, dowork: 2372796, fa_i: 2
Vessel i: 6 li: 5, pi: 22-27, ai-di: 33-42, taoi-deltai: 33-40, periodi: 7, taoPi_SP-deltaPi_SP: 33-34, periodPi: 1, c_i: 1416678, dowork: 1450042, fa_i: 4
Vessel i: 7 li: 6, pi: 14-20, ai-di: 59-62, taoi-deltai: 59-65, periodi: 6, taoPi_SP-deltaPi_SP: 59-61, periodPi: 2, c_i: 1124285, dowork: 1845508, fa_i: 2
Vessel i: 8 li: 5, pi: 9-14, ai-di: 0-6, taoi-deltai: 0-9, periodi: 9, taoPi_SP-deltaPi_SP: 0-2, periodPi: 2, c_i: 2096347, dowork: 2900084, fa_i: 4
Vessel i: 9 li: 5, pi: 15-20, ai-di: 47-60, taoi-deltai: 47-57, periodi: 10, taoPi_SP-deltaPi_SP: 47-49, periodPi: 2, c_i: 2232920, dowork: 2240974, fa_i: 4
Vessel i: 10 li: 5, pi: 9-14, ai-di: 36-45, taoi-deltai: 36-42, periodi: 6, taoPi_SP-deltaPi_SP: 36-37, periodPi: 1, c_i: 1093581, dowork: 1186398, fa_i: 3
Vessel i: 11 li: 5, pi: 20-25, ai-di: 57-64, taoi-deltai: 57-65, periodi: 8, taoPi_SP-deltaPi_SP: 57-59, periodPi: 2, c_i: 1604130, dowork: 1845508, fa_i: 3
Vessel i: 12 li: 6, pi: 19-25, ai-di: 8-19, taoi-deltai: 8-19, periodi: 11, taoPi_SP-deltaPi_SP: 8-12, periodPi: 4, c_i: 2533621, dowork: 2768262, fa_i: 2
Vessel i: 13 li: 6, pi: 27-33, ai-di: 49-69, taoi-deltai: 49-57, periodi: 8, taoPi_SP-deltaPi_SP: 49-51, periodPi: 2, c_i: 1644208, dowork: 1845508, fa_i: 2
Vessel i: 14 li: 5, pi: 14-19, ai-di: 3-25, taoi-deltai: 3-11, periodi: 8, taoPi_SP-deltaPi_SP: 3-5, periodPi: 2, c_i: 1741922, dowork: 2636440, fa_i: 3
Vessel i: 15 li: 7, pi: 0-7, ai-di: 5-28, taoi-deltai: 5-19, periodi: 14, taoPi_SP-deltaPi_SP: 5-9, periodPi: 4, c_i: 3309707, dowork: 3427372, fa_i: 4
Vessel i: 16 li: 6, pi: 19-25, ai-di: 9-29, taoi-deltai: 20-28, periodi: 8, taoPi_SP-deltaPi_SP: 20-22, periodPi: 2, c_i: 1828571, dowork: 1845508, fa_i: 4
Vessel i: 17 li: 6, pi: 25-31, ai-di: 13-33, taoi-deltai: 19-25, periodi: 6, taoPi_SP-deltaPi_SP: 19-20, periodPi: 1, c_i: 1088452, dowork: 1186398, fa_i: 3
Vessel i: 18 li: 5, pi: 7-12, ai-di: 9-27, taoi-deltai: 10-20, periodi: 10, taoPi_SP-deltaPi_SP: 10-12, periodPi: 2, c_i: 2211540, dowork: 2240974, fa_i: 4
Vessel i: 19 li: 5, pi: 14-19, ai-di: 39-62, taoi-deltai: 39-46, periodi: 7, taoPi_SP-deltaPi_SP: 39-41, periodPi: 2, c_i: 1546270, dowork: 2636440, fa_i: 3

TimeSolveModel: 1231.000000

TimeAll: 1239.000000