

unknown

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80 cord_individual_obj[indivial_i,:] = [ 16. 6. 108. 114.]
81 cord_individual_obj[indivial_i,:] = [17. 6. 74. 80.]
82 cord_individual_obj[indivial_i,:] = [18. 6. 46. 52.]
83 cord_individual_obj[indivial_i,:] = [19. 6. 79. 85.]
84 cord_individual_obj[indivial_i,:] = [20. 8. 42. 50.]
85 cord_individual_obj[indivial_i,:] = [21. 6. 50. 56.]
86 cord_individual_obj[indivial_i,:] = [22. 7. 96. 103.]
87 cord_individual_obj[indivial_i,:] = [23. 6. 74. 80.]
88 cord_individual_obj[indivial_i,:] = [24. 7. 57. 64.]
89
90 min(cord_individual_obj[:,3]) = 32.0
91 historl_G_best_iter[iter, 3] = 32.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [ 0. 6. 60. 66.]
96 cord_individual_obj[indivial_i,:] = [ 1. 7. 67. 74.]
97 cord_individual_obj[indivial_i,:] = [ 2. 10. 128. 138.]
98 cord_individual_obj[indivial_i,:] = [ 3. 7. 40. 47.]
99 cord_individual_obj[indivial_i,:] = [ 4. 8. 106. 114.]
100 cord_individual_obj[indivial_i,:] = [ 5. 6. 73. 79.]
101 cord_individual_obj[indivial_i,:] = [ 6. 8. 32. 40.]
102 cord_individual_obj[indivial_i,:] = [ 7. 5. 103. 108.]
103 cord_individual_obj[indivial_i,:] = [ 8. 6. 79. 85.]
104 cord_individual_obj[indivial_i,:] = [ 9. 7. 55. 62.]
105 cord_individual_obj[indivial_i,:] = [10. 6. 74. 80.]
106 cord_individual_obj[indivial_i,:] = [11. 5. 72. 77.]
107 cord_individual_obj[indivial_i,:] = [12. 5. 43. 48.]
108 cord_individual_obj[indivial_i,:] = [13. 5. 56. 61.]
109 cord_individual_obj[indivial_i,:] = [14. 9. 57. 66.]
110 cord_individual_obj[indivial_i,:] = [15. 9. 70. 79.]
111 cord_individual_obj[indivial_i,:] = [16. 6. 26. 32.]
112 cord_individual_obj[indivial_i,:] = [17. 6. 59. 65.]
113 cord_individual_obj[indivial_i,:] = [18. 5. 77. 82.]
114 cord_individual_obj[indivial_i,:] = [19. 6. 36. 42.]
115 cord_individual_obj[indivial_i,:] = [20. 8. 74. 82.]
116 cord_individual_obj[indivial_i,:] = [21. 6. 85. 91.]
117 cord_individual_obj[indivial_i,:] = [22. 9. 73. 82.]
118 cord_individual_obj[indivial_i,:] = [23. 7. 62. 69.]
119 cord_individual_obj[indivial_i,:] = [24. 6. 67. 73.]
120
121 min(cord_individual_obj[:,3]) = 32.0
122 historl_G_best_iter[iter, 3] = 32.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [ 0. 6. 52. 58.]
127 cord_individual_obj[indivial_i,:] = [ 1. 7. 72. 79.]
128 cord_individual_obj[indivial_i,:] = [ 2. 6. 26. 32.]
129 cord_individual_obj[indivial_i,:] = [ 3. 6. 93. 99.]
130 cord_individual_obj[indivial_i,:] = [ 4. 9. 58. 67.]
131 cord_individual_obj[indivial_i,:] = [ 5. 9. 92. 101.]
132 cord_individual_obj[indivial_i,:] = [ 6. 7. 77. 84.]
133 cord_individual_obj[indivial_i,:] = [ 7. 8. 59. 67.]
134 cord_individual_obj[indivial_i,:] = [ 8. 6. 83. 89.]
135 cord_individual_obj[indivial_i,:] = [ 9. 7. 95. 102.]
136 cord_individual_obj[indivial_i,:] = [10. 6. 86. 92.]
137 cord_individual_obj[indivial_i,:] = [11. 6. 95. 101.]
138 cord_individual_obj[indivial_i,:] = [12. 6. 86. 92.]
139 cord_individual_obj[indivial_i,:] = [13. 5. 49. 54.]
140 cord_individual_obj[indivial_i,:] = [14. 5. 59. 64.]
141 cord_individual_obj[indivial_i,:] = [15. 8. 86. 94.]
142 cord_individual_obj[indivial_i,:] = [16. 7. 71. 78.]
143 cord_individual_obj[indivial_i,:] = [17. 7. 65. 72.]
144 cord_individual_obj[indivial_i,:] = [18. 6. 99. 105.]
145 cord_individual_obj[indivial_i,:] = [19. 6. 78. 84.]
146 cord_individual_obj[indivial_i,:] = [20. 6. 129. 135.]
147 cord_individual_obj[indivial_i,:] = [21. 5. 55. 60.]
148 cord_individual_obj[indivial_i,:] = [22. 6. 62. 68.]
149 cord_individual_obj[indivial_i,:] = [23. 6. 115. 121.]
150 cord_individual_obj[indivial_i,:] = [24. 6. 100. 106.]
151
152 min(cord_individual_obj[:,3]) = 32.0
153 historl_G_best_iter[iter, 3] = 32.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [ 0. 8. 55. 63.]
158 cord_individual_obj[indivial_i,:] = [ 1. 6. 88. 94.]
159 cord_individual_obj[indivial_i,:] = [ 2. 7. 65. 72.]
160 cord_individual_obj[indivial_i,:] = [ 3. 6. 41. 47.]
161 cord_individual_obj[indivial_i,:] = [ 4. 6. 60. 66.]
162 cord_individual_obj[indivial_i,:] = [ 5. 6. 35. 41.]
163 cord_individual_obj[indivial_i,:] = [ 6. 7. 49. 56.]

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164 cord_individual_obj[indivial_i,:] = [ 7. 7. 86. 93.]
165 cord_individual_obj[indivial_i,:] = [ 8. 7. 76. 83.]
166 cord_individual_obj[indivial_i,:] = [ 9. 9. 124. 133.]
167 cord_individual_obj[indivial_i,:] = [10. 7. 69. 76.]
168 cord_individual_obj[indivial_i,:] = [11. 6. 58. 64.]
169 cord_individual_obj[indivial_i,:] = [12. 5. 109. 114.]
170 cord_individual_obj[indivial_i,:] = [13. 5. 123. 128.]
171 cord_individual_obj[indivial_i,:] = [14. 7. 46. 53.]
172 cord_individual_obj[indivial_i,:] = [15. 6. 78. 84.]
173 cord_individual_obj[indivial_i,:] = [16. 6. 44. 50.]
174 cord_individual_obj[indivial_i,:] = [17. 6. 66. 72.]
175 cord_individual_obj[indivial_i,:] = [18. 7. 42. 49.]
176 cord_individual_obj[indivial_i,:] = [19. 7. 71. 78.]
177 cord_individual_obj[indivial_i,:] = [20. 6. 26. 32.]
178 cord_individual_obj[indivial_i,:] = [21. 7. 93. 100.]
179 cord_individual_obj[indivial_i,:] = [22. 7. 71. 78.]
180 cord_individual_obj[indivial_i,:] = [23. 6. 73. 79.]
181 cord_individual_obj[indivial_i,:] = [24. 7. 57. 64.]
182
183 min(cord_individual_obj[:,3]) = 32.0
184 historl_G_best_iter[iter,3] = 32.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 7. 85. 92.]
189 cord_individual_obj[indivial_i,:] = [ 1. 7. 78. 85.]
190 cord_individual_obj[indivial_i,:] = [ 2. 7. 53. 60.]
191 cord_individual_obj[indivial_i,:] = [ 3. 6. 41. 47.]
192 cord_individual_obj[indivial_i,:] = [ 4. 9. 56. 65.]
193 cord_individual_obj[indivial_i,:] = [ 5. 6. 56. 62.]
194 cord_individual_obj[indivial_i,:] = [ 6. 9. 71. 80.]
195 cord_individual_obj[indivial_i,:] = [ 7. 10. 82. 92.]
196 cord_individual_obj[indivial_i,:] = [ 8. 7. 76. 83.]
197 cord_individual_obj[indivial_i,:] = [ 9. 6. 26. 32.]
198 cord_individual_obj[indivial_i,:] = [10. 6. 69. 75.]
199 cord_individual_obj[indivial_i,:] = [11. 7. 62. 69.]
200 cord_individual_obj[indivial_i,:] = [12. 6. 39. 45.]
201 cord_individual_obj[indivial_i,:] = [13. 5. 123. 128.]
202 cord_individual_obj[indivial_i,:] = [14. 7. 50. 57.]
203 cord_individual_obj[indivial_i,:] = [15. 7. 60. 67.]
204 cord_individual_obj[indivial_i,:] = [16. 5. 50. 55.]
205 cord_individual_obj[indivial_i,:] = [17. 6. 66. 72.]
206 cord_individual_obj[indivial_i,:] = [18. 6. 93. 99.]
207 cord_individual_obj[indivial_i,:] = [19. 6. 57. 63.]
208 cord_individual_obj[indivial_i,:] = [20. 6. 39. 45.]
209 cord_individual_obj[indivial_i,:] = [21. 6. 106. 112.]
210 cord_individual_obj[indivial_i,:] = [22. 5. 72. 77.]
211 cord_individual_obj[indivial_i,:] = [23. 6. 82. 88.]
212 cord_individual_obj[indivial_i,:] = [24. 6. 60. 66.]
213
214 min(cord_individual_obj[:,3]) = 32.0
215 historl_G_best_iter[iter,3] = 32.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [ 0. 6. 49. 55.]
220 cord_individual_obj[indivial_i,:] = [ 1. 7. 57. 64.]
221 cord_individual_obj[indivial_i,:] = [ 2. 8. 71. 79.]
222 cord_individual_obj[indivial_i,:] = [ 3. 6. 41. 47.]
223 cord_individual_obj[indivial_i,:] = [ 4. 7. 60. 67.]
224 cord_individual_obj[indivial_i,:] = [ 5. 7. 95. 102.]
225 cord_individual_obj[indivial_i,:] = [ 6. 9. 77. 86.]
226 cord_individual_obj[indivial_i,:] = [ 7. 7. 105. 112.]
227 cord_individual_obj[indivial_i,:] = [ 8. 7. 73. 80.]
228 cord_individual_obj[indivial_i,:] = [ 9. 8. 74. 82.]
229 cord_individual_obj[indivial_i,:] = [10. 6. 53. 59.]
230 cord_individual_obj[indivial_i,:] = [11. 9. 108. 117.]
231 cord_individual_obj[indivial_i,:] = [12. 7. 102. 109.]
232 cord_individual_obj[indivial_i,:] = [13. 6. 26. 32.]
233 cord_individual_obj[indivial_i,:] = [14. 7. 46. 53.]
234 cord_individual_obj[indivial_i,:] = [15. 7. 68. 75.]
235 cord_individual_obj[indivial_i,:] = [16. 7. 71. 78.]
236 cord_individual_obj[indivial_i,:] = [17. 6. 60. 66.]
237 cord_individual_obj[indivial_i,:] = [18. 6. 44. 50.]
238 cord_individual_obj[indivial_i,:] = [19. 5. 72. 77.]
239 cord_individual_obj[indivial_i,:] = [20. 6. 39. 45.]
240 cord_individual_obj[indivial_i,:] = [21. 5. 66. 71.]
241 cord_individual_obj[indivial_i,:] = [22. 5. 67. 72.]
242 cord_individual_obj[indivial_i,:] = [23. 6. 80. 86.]
243 cord_individual_obj[indivial_i,:] = [24. 8. 57. 65.]
244
245 min(cord_individual_obj[:,3]) = 32.0
246 historl_G_best_iter[iter,3] = 32.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0.  6. 40. 46.]
251 cord_individual_obj[indivial_i, :] = [ 1.  7. 51. 58.]
252 cord_individual_obj[indivial_i, :] = [ 2.  8. 83. 91.]
253 cord_individual_obj[indivial_i, :] = [ 3.  8. 59. 67.]
254 cord_individual_obj[indivial_i, :] = [ 4.  9. 59. 68.]
255 cord_individual_obj[indivial_i, :] = [ 5.  8. 130. 138.]
256 cord_individual_obj[indivial_i, :] = [ 6.  9. 80. 89.]
257 cord_individual_obj[indivial_i, :] = [ 7. 10. 68. 78.]
258 cord_individual_obj[indivial_i, :] = [ 8.  5. 45. 50.]
259 cord_individual_obj[indivial_i, :] = [ 9.  6. 91. 97.]
260 cord_individual_obj[indivial_i, :] = [10.  6. 79. 85.]
261 cord_individual_obj[indivial_i, :] = [11.  6. 26. 32.]
262 cord_individual_obj[indivial_i, :] = [12.  7. 44. 51.]
263 cord_individual_obj[indivial_i, :] = [13.  5. 72. 77.]
264 cord_individual_obj[indivial_i, :] = [14.  6. 40. 46.]
265 cord_individual_obj[indivial_i, :] = [15.  6. 102. 108.]
266 cord_individual_obj[indivial_i, :] = [16.  8. 75. 83.]
267 cord_individual_obj[indivial_i, :] = [17.  7. 61. 68.]
268 cord_individual_obj[indivial_i, :] = [18.  5. 75. 80.]
269 cord_individual_obj[indivial_i, :] = [19.  7. 40. 47.]
270 cord_individual_obj[indivial_i, :] = [20.  8. 49. 57.]
271 cord_individual_obj[indivial_i, :] = [21.  6. 109. 115.]
272 cord_individual_obj[indivial_i, :] = [22. 10. 76. 86.]
273 cord_individual_obj[indivial_i, :] = [23.  6. 82. 88.]
274 cord_individual_obj[indivial_i, :] = [24.  7. 99. 106.]
275
276 min(cord_individual_obj[:, 3]) = 32.0
277 historl_G_best_iter[iter, 3] = 32.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0.  8. 87. 95.]
282 cord_individual_obj[indivial_i, :] = [ 1.  8. 77. 85.]
283 cord_individual_obj[indivial_i, :] = [ 2.  7. 47. 54.]
284 cord_individual_obj[indivial_i, :] = [ 3.  6. 53. 59.]
285 cord_individual_obj[indivial_i, :] = [ 4.  7. 57. 64.]
286 cord_individual_obj[indivial_i, :] = [ 5.  6. 26. 32.]
287 cord_individual_obj[indivial_i, :] = [ 6.  7. 54. 61.]
288 cord_individual_obj[indivial_i, :] = [ 7.  8. 36. 44.]
289 cord_individual_obj[indivial_i, :] = [ 8.  5. 57. 62.]
290 cord_individual_obj[indivial_i, :] = [ 9.  7. 57. 64.]
291 cord_individual_obj[indivial_i, :] = [10.  7. 74. 81.]
292 cord_individual_obj[indivial_i, :] = [11.  7. 56. 63.]
293 cord_individual_obj[indivial_i, :] = [12.  5. 90. 95.]
294 cord_individual_obj[indivial_i, :] = [13.  6. 102. 108.]
295 cord_individual_obj[indivial_i, :] = [14.  6. 48. 54.]
296 cord_individual_obj[indivial_i, :] = [15.  6. 79. 85.]
297 cord_individual_obj[indivial_i, :] = [16.  7. 66. 73.]
298 cord_individual_obj[indivial_i, :] = [17.  6. 56. 62.]
299 cord_individual_obj[indivial_i, :] = [18.  6. 93. 99.]
300 cord_individual_obj[indivial_i, :] = [19.  7. 58. 65.]
301 cord_individual_obj[indivial_i, :] = [20.  7. 44. 51.]
302 cord_individual_obj[indivial_i, :] = [21.  8. 132. 140.]
303 cord_individual_obj[indivial_i, :] = [22.  8. 54. 62.]
304 cord_individual_obj[indivial_i, :] = [23.  7. 82. 89.]
305 cord_individual_obj[indivial_i, :] = [24.  8. 80. 88.]
306
307 min(cord_individual_obj[:, 3]) = 32.0
308 historl_G_best_iter[iter, 3] = 32.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0.  6. 91. 97.]
313 cord_individual_obj[indivial_i, :] = [ 1.  7. 58. 65.]
314 cord_individual_obj[indivial_i, :] = [ 2.  7. 56. 63.]
315 cord_individual_obj[indivial_i, :] = [ 3.  6. 41. 47.]
316 cord_individual_obj[indivial_i, :] = [ 4.  8. 55. 63.]
317 cord_individual_obj[indivial_i, :] = [ 5.  6. 140. 146.]
318 cord_individual_obj[indivial_i, :] = [ 6.  5. 90. 95.]
319 cord_individual_obj[indivial_i, :] = [ 7.  6. 83. 89.]
320 cord_individual_obj[indivial_i, :] = [ 8.  6. 95. 101.]
321 cord_individual_obj[indivial_i, :] = [ 9.  6. 78. 84.]
322 cord_individual_obj[indivial_i, :] = [10.  6. 73. 79.]
323 cord_individual_obj[indivial_i, :] = [11.  6. 56. 62.]
324 cord_individual_obj[indivial_i, :] = [12.  9. 96. 105.]
325 cord_individual_obj[indivial_i, :] = [13.  5. 116. 121.]
326 cord_individual_obj[indivial_i, :] = [14.  7. 48. 55.]
327 cord_individual_obj[indivial_i, :] = [15.  5. 96. 101.]
328 cord_individual_obj[indivial_i, :] = [16.  5. 62. 67.]
329 cord_individual_obj[indivial_i, :] = [17.  6. 63. 69.]
330 cord_individual_obj[indivial_i, :] = [18.  6. 93. 99.]
331 cord_individual_obj[indivial_i, :] = [19.  7. 79. 86.]

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332 cord_individual_obj[indivial_i,:] = [20. 7. 62. 69.]
333 cord_individual_obj[indivial_i,:] = [21. 6. 26. 32.]
334 cord_individual_obj[indivial_i,:] = [22. 7. 91. 98.]
335 cord_individual_obj[indivial_i,:] = [23. 7. 69. 76.]
336 cord_individual_obj[indivial_i,:] = [24. 6. 70. 76.]
337
338 min(cord_individual_obj[:,3]) = 32.0
339 histol_G_best_iter[iter,3] = 32.0
340 Begin iteration:
341
342 iter = 10
343 cord_individual_obj[indivial_i,:] = [ 0. 7. 55. 62.]
344 cord_individual_obj[indivial_i,:] = [ 1. 7. 67. 74.]
345 cord_individual_obj[indivial_i,:] = [ 2. 6. 38. 44.]
346 cord_individual_obj[indivial_i,:] = [ 3. 8. 111. 119.]
347 cord_individual_obj[indivial_i,:] = [ 4. 8. 82. 90.]
348 cord_individual_obj[indivial_i,:] = [ 5. 6. 26. 32.]
349 cord_individual_obj[indivial_i,:] = [ 6. 7. 80. 87.]
350 cord_individual_obj[indivial_i,:] = [ 7. 7. 27. 34.]
351 cord_individual_obj[indivial_i,:] = [ 8. 7. 82. 89.]
352 cord_individual_obj[indivial_i,:] = [ 9. 7. 59. 66.]
353 cord_individual_obj[indivial_i,:] = [10. 6. 47. 53.]
354 cord_individual_obj[indivial_i,:] = [11. 7. 94. 101.]
355 cord_individual_obj[indivial_i,:] = [12. 7. 44. 51.]
356 cord_individual_obj[indivial_i,:] = [13. 6. 52. 58.]
357 cord_individual_obj[indivial_i,:] = [14. 7. 61. 68.]
358 cord_individual_obj[indivial_i,:] = [15. 7. 81. 88.]
359 cord_individual_obj[indivial_i,:] = [16. 6. 43. 49.]
360 cord_individual_obj[indivial_i,:] = [17. 7. 45. 52.]
361 cord_individual_obj[indivial_i,:] = [18. 5. 69. 74.]
362 cord_individual_obj[indivial_i,:] = [19. 8. 91. 99.]
363 cord_individual_obj[indivial_i,:] = [20. 7. 78. 85.]
364 cord_individual_obj[indivial_i,:] = [21. 6. 92. 98.]
365 cord_individual_obj[indivial_i,:] = [22. 7. 83. 90.]
366 cord_individual_obj[indivial_i,:] = [23. 6. 86. 92.]
367 cord_individual_obj[indivial_i,:] = [24. 8. 101. 109.]
368
369 min(cord_individual_obj[:,3]) = 32.0
370 histol_G_best_iter[iter,3] = 32.0
371 Begin iteration:
372
373 iter = 11
374 cord_individual_obj[indivial_i,:] = [ 0. 7. 52. 59.]
375 cord_individual_obj[indivial_i,:] = [ 1. 8. 62. 70.]
376 cord_individual_obj[indivial_i,:] = [ 2. 8. 72. 80.]
377 cord_individual_obj[indivial_i,:] = [ 3. 6. 26. 32.]
378 cord_individual_obj[indivial_i,:] = [ 4. 10. 73. 83.]
379 cord_individual_obj[indivial_i,:] = [ 5. 7. 63. 70.]
380 cord_individual_obj[indivial_i,:] = [ 6. 8. 95. 103.]
381 cord_individual_obj[indivial_i,:] = [ 7. 7. 74. 81.]
382 cord_individual_obj[indivial_i,:] = [ 8. 7. 45. 52.]
383 cord_individual_obj[indivial_i,:] = [ 9. 9. 52. 61.]
384 cord_individual_obj[indivial_i,:] = [10. 8. 81. 89.]
385 cord_individual_obj[indivial_i,:] = [11. 10. 84. 94.]
386 cord_individual_obj[indivial_i,:] = [12. 7. 46. 53.]
387 cord_individual_obj[indivial_i,:] = [13. 6. 81. 87.]
388 cord_individual_obj[indivial_i,:] = [14. 8. 49. 57.]
389 cord_individual_obj[indivial_i,:] = [15. 9. 82. 91.]
390 cord_individual_obj[indivial_i,:] = [16. 6. 87. 93.]
391 cord_individual_obj[indivial_i,:] = [17. 6. 49. 55.]
392 cord_individual_obj[indivial_i,:] = [18. 9. 80. 89.]
393 cord_individual_obj[indivial_i,:] = [19. 6. 43. 49.]
394 cord_individual_obj[indivial_i,:] = [20. 6. 42. 48.]
395 cord_individual_obj[indivial_i,:] = [21. 7. 84. 91.]
396 cord_individual_obj[indivial_i,:] = [22. 10. 102. 112.]
397 cord_individual_obj[indivial_i,:] = [23. 6. 81. 87.]
398 cord_individual_obj[indivial_i,:] = [24. 7. 110. 117.]
399
400 min(cord_individual_obj[:,3]) = 32.0
401 histol_G_best_iter[iter,3] = 32.0
402 Begin iteration:
403
404 iter = 12
405 cord_individual_obj[indivial_i,:] = [ 0. 6. 64. 70.]
406 cord_individual_obj[indivial_i,:] = [ 1. 7. 58. 65.]
407 cord_individual_obj[indivial_i,:] = [ 2. 8. 68. 76.]
408 cord_individual_obj[indivial_i,:] = [ 3. 6. 41. 47.]
409 cord_individual_obj[indivial_i,:] = [ 4. 9. 74. 83.]
410 cord_individual_obj[indivial_i,:] = [ 5. 7. 60. 67.]
411 cord_individual_obj[indivial_i,:] = [ 6. 7. 60. 67.]
412 cord_individual_obj[indivial_i,:] = [ 7. 7. 61. 68.]
413 cord_individual_obj[indivial_i,:] = [ 8. 7. 61. 68.]
414 cord_individual_obj[indivial_i,:] = [ 9. 8. 89. 97.]
415 cord_individual_obj[indivial_i,:] = [10. 6. 83. 89.]

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416 cord_individual_obj[indivial_i,:] = [11. 7. 65. 72.]
417 cord_individual_obj[indivial_i,:] = [12. 5. 53. 58.]
418 cord_individual_obj[indivial_i,:] = [13. 6. 123. 129.]
419 cord_individual_obj[indivial_i,:] = [14. 6. 73. 79.]
420 cord_individual_obj[indivial_i,:] = [15. 6. 69. 75.]
421 cord_individual_obj[indivial_i,:] = [16. 6. 91. 97.]
422 cord_individual_obj[indivial_i,:] = [17. 6. 51. 57.]
423 cord_individual_obj[indivial_i,:] = [18. 7. 42. 49.]
424 cord_individual_obj[indivial_i,:] = [19. 6. 87. 93.]
425 cord_individual_obj[indivial_i,:] = [20. 7. 46. 53.]
426 cord_individual_obj[indivial_i,:] = [21. 6. 102. 108.]
427 cord_individual_obj[indivial_i,:] = [22. 8. 83. 91.]
428 cord_individual_obj[indivial_i,:] = [23. 6. 82. 88.]
429 cord_individual_obj[indivial_i,:] = [24. 6. 26. 32.]
430
431 min(cord_individual_obj[:,3]) = 32.0
432 histol_G_best_iter[iter,3] = 32.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [ 0. 7. 55. 62.]
437 cord_individual_obj[indivial_i,:] = [ 1. 5. 54. 59.]
438 cord_individual_obj[indivial_i,:] = [ 2. 7. 67. 74.]
439 cord_individual_obj[indivial_i,:] = [ 3. 5. 47. 52.]
440 cord_individual_obj[indivial_i,:] = [ 4. 7. 102. 109.]
441 cord_individual_obj[indivial_i,:] = [ 5. 7. 98. 105.]
442 cord_individual_obj[indivial_i,:] = [ 6. 6. 37. 43.]
443 cord_individual_obj[indivial_i,:] = [ 7. 8. 45. 53.]
444 cord_individual_obj[indivial_i,:] = [ 8. 8. 70. 78.]
445 cord_individual_obj[indivial_i,:] = [ 9. 7. 73. 80.]
446 cord_individual_obj[indivial_i,:] = [10. 5. 76. 81.]
447 cord_individual_obj[indivial_i,:] = [11. 8. 42. 50.]
448 cord_individual_obj[indivial_i,:] = [12. 7. 56. 63.]
449 cord_individual_obj[indivial_i,:] = [13. 6. 26. 32.]
450 cord_individual_obj[indivial_i,:] = [14. 6. 116. 122.]
451 cord_individual_obj[indivial_i,:] = [15. 4. 45. 49.]
452 cord_individual_obj[indivial_i,:] = [16. 6. 96. 102.]
453 cord_individual_obj[indivial_i,:] = [17. 6. 74. 80.]
454 cord_individual_obj[indivial_i,:] = [18. 7. 45. 52.]
455 cord_individual_obj[indivial_i,:] = [19. 4. 76. 80.]
456 cord_individual_obj[indivial_i,:] = [20. 7. 50. 57.]
457 cord_individual_obj[indivial_i,:] = [21. 5. 47. 52.]
458 cord_individual_obj[indivial_i,:] = [22. 6. 77. 83.]
459 cord_individual_obj[indivial_i,:] = [23. 5. 48. 53.]
460 cord_individual_obj[indivial_i,:] = [24. 7. 58. 65.]
461
462 min(cord_individual_obj[:,3]) = 32.0
463 histol_G_best_iter[iter,3] = 32.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [ 0. 8. 55. 63.]
468 cord_individual_obj[indivial_i,:] = [ 1. 7. 57. 64.]
469 cord_individual_obj[indivial_i,:] = [ 2. 7. 68. 75.]
470 cord_individual_obj[indivial_i,:] = [ 3. 7. 74. 81.]
471 cord_individual_obj[indivial_i,:] = [ 4. 7. 58. 65.]
472 cord_individual_obj[indivial_i,:] = [ 5. 7. 126. 133.]
473 cord_individual_obj[indivial_i,:] = [ 6. 10. 46. 56.]
474 cord_individual_obj[indivial_i,:] = [ 7. 8. 64. 72.]
475 cord_individual_obj[indivial_i,:] = [ 8. 6. 52. 58.]
476 cord_individual_obj[indivial_i,:] = [ 9. 9. 51. 60.]
477 cord_individual_obj[indivial_i,:] = [10. 7. 70. 77.]
478 cord_individual_obj[indivial_i,:] = [11. 6. 54. 60.]
479 cord_individual_obj[indivial_i,:] = [12. 7. 47. 54.]
480 cord_individual_obj[indivial_i,:] = [13. 5. 71. 76.]
481 cord_individual_obj[indivial_i,:] = [14. 6. 26. 32.]
482 cord_individual_obj[indivial_i,:] = [15. 6. 86. 92.]
483 cord_individual_obj[indivial_i,:] = [16. 6. 93. 99.]
484 cord_individual_obj[indivial_i,:] = [17. 7. 62. 69.]
485 cord_individual_obj[indivial_i,:] = [18. 8. 83. 91.]
486 cord_individual_obj[indivial_i,:] = [19. 6. 42. 48.]
487 cord_individual_obj[indivial_i,:] = [20. 6. 58. 64.]
488 cord_individual_obj[indivial_i,:] = [21. 6. 89. 95.]
489 cord_individual_obj[indivial_i,:] = [22. 5. 97. 102.]
490 cord_individual_obj[indivial_i,:] = [23. 7. 68. 75.]
491 cord_individual_obj[indivial_i,:] = [24. 8. 74. 82.]
492
493 min(cord_individual_obj[:,3]) = 32.0
494 histol_G_best_iter[iter,3] = 32.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [ 0. 6. 68. 74.]
499 cord_individual_obj[indivial_i,:] = [ 1. 8. 135. 143.]

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500 cord_individual_obj[indivial_i, :] = [ 2. 7. 96. 103.]
501 cord_individual_obj[indivial_i, :] = [ 3. 7. 54. 61.]
502 cord_individual_obj[indivial_i, :] = [ 4. 7. 66. 73.]
503 cord_individual_obj[indivial_i, :] = [ 5. 6. 26. 32.]
504 cord_individual_obj[indivial_i, :] = [ 6. 7. 73. 80.]
505 cord_individual_obj[indivial_i, :] = [ 7. 7. 67. 74.]
506 cord_individual_obj[indivial_i, :] = [ 8. 6. 150. 156.]
507 cord_individual_obj[indivial_i, :] = [ 9. 7. 81. 88.]
508 cord_individual_obj[indivial_i, :] = [10. 7. 59. 66.]
509 cord_individual_obj[indivial_i, :] = [11. 7. 50. 57.]
510 cord_individual_obj[indivial_i, :] = [12. 5. 121. 126.]
511 cord_individual_obj[indivial_i, :] = [13. 5. 48. 53.]
512 cord_individual_obj[indivial_i, :] = [14. 7. 44. 51.]
513 cord_individual_obj[indivial_i, :] = [15. 9. 78. 87.]
514 cord_individual_obj[indivial_i, :] = [16. 7. 94. 101.]
515 cord_individual_obj[indivial_i, :] = [17. 7. 55. 62.]
516 cord_individual_obj[indivial_i, :] = [18. 8. 51. 59.]
517 cord_individual_obj[indivial_i, :] = [19. 8. 83. 91.]
518 cord_individual_obj[indivial_i, :] = [20. 6. 37. 43.]
519 cord_individual_obj[indivial_i, :] = [21. 7. 80. 87.]
520 cord_individual_obj[indivial_i, :] = [22. 7. 84. 91.]
521 cord_individual_obj[indivial_i, :] = [23. 7. 68. 75.]
522 cord_individual_obj[indivial_i, :] = [24. 7. 76. 83.]
523
524 min(cord_individual_obj[:, 3]) = 32.0
525 histort_G_best_iter[iter, 3] = 32.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i, :] = [ 0. 6. 106. 112.]
530 cord_individual_obj[indivial_i, :] = [ 1. 8. 78. 86.]
531 cord_individual_obj[indivial_i, :] = [ 2. 6. 44. 50.]
532 cord_individual_obj[indivial_i, :] = [ 3. 6. 40. 46.]
533 cord_individual_obj[indivial_i, :] = [ 4. 8. 50. 58.]
534 cord_individual_obj[indivial_i, :] = [ 5. 6. 98. 104.]
535 cord_individual_obj[indivial_i, :] = [ 6. 6. 90. 96.]
536 cord_individual_obj[indivial_i, :] = [ 7. 6. 70. 76.]
537 cord_individual_obj[indivial_i, :] = [ 8. 6. 26. 32.]
538 cord_individual_obj[indivial_i, :] = [ 9. 8. 50. 58.]
539 cord_individual_obj[indivial_i, :] = [10. 7. 58. 65.]
540 cord_individual_obj[indivial_i, :] = [11. 5. 42. 47.]
541 cord_individual_obj[indivial_i, :] = [12. 9. 54. 63.]
542 cord_individual_obj[indivial_i, :] = [13. 5. 79. 84.]
543 cord_individual_obj[indivial_i, :] = [14. 8. 48. 56.]
544 cord_individual_obj[indivial_i, :] = [15. 5. 104. 109.]
545 cord_individual_obj[indivial_i, :] = [16. 7. 65. 72.]
546 cord_individual_obj[indivial_i, :] = [17. 9. 58. 67.]
547 cord_individual_obj[indivial_i, :] = [18. 5. 87. 92.]
548 cord_individual_obj[indivial_i, :] = [19. 7. 44. 51.]
549 cord_individual_obj[indivial_i, :] = [20. 7. 59. 66.]
550 cord_individual_obj[indivial_i, :] = [21. 6. 65. 71.]
551 cord_individual_obj[indivial_i, :] = [22. 6. 52. 58.]
552 cord_individual_obj[indivial_i, :] = [23. 9. 62. 71.]
553 cord_individual_obj[indivial_i, :] = [24. 6. 69. 75.]
554
555 min(cord_individual_obj[:, 3]) = 32.0
556 histort_G_best_iter[iter, 3] = 32.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i, :] = [ 0. 6. 26. 32.]
561 cord_individual_obj[indivial_i, :] = [ 1. 9. 73. 82.]
562 cord_individual_obj[indivial_i, :] = [ 2. 6. 61. 67.]
563 cord_individual_obj[indivial_i, :] = [ 3. 7. 52. 59.]
564 cord_individual_obj[indivial_i, :] = [ 4. 7. 89. 96.]
565 cord_individual_obj[indivial_i, :] = [ 5. 7. 42. 49.]
566 cord_individual_obj[indivial_i, :] = [ 6. 7. 116. 123.]
567 cord_individual_obj[indivial_i, :] = [ 7. 9. 71. 80.]
568 cord_individual_obj[indivial_i, :] = [ 8. 6. 56. 62.]
569 cord_individual_obj[indivial_i, :] = [ 9. 7. 58. 65.]
570 cord_individual_obj[indivial_i, :] = [10. 6. 100. 106.]
571 cord_individual_obj[indivial_i, :] = [11. 7. 54. 61.]
572 cord_individual_obj[indivial_i, :] = [12. 6. 50. 56.]
573 cord_individual_obj[indivial_i, :] = [13. 5. 75. 80.]
574 cord_individual_obj[indivial_i, :] = [14. 6. 38. 44.]
575 cord_individual_obj[indivial_i, :] = [15. 6. 97. 103.]
576 cord_individual_obj[indivial_i, :] = [16. 6. 54. 60.]
577 cord_individual_obj[indivial_i, :] = [17. 10. 71. 81.]
578 cord_individual_obj[indivial_i, :] = [18. 7. 39. 46.]
579 cord_individual_obj[indivial_i, :] = [19. 6. 123. 129.]
580 cord_individual_obj[indivial_i, :] = [20. 6. 56. 62.]
581 cord_individual_obj[indivial_i, :] = [21. 5. 38. 43.]
582 cord_individual_obj[indivial_i, :] = [22. 7. 98. 105.]
583 cord_individual_obj[indivial_i, :] = [23. 7. 64. 71.]

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unknown

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584     cord_individual_obj[indivial_i, :] = [24. 6. 75. 81.]
585
586     min(cord_individual_obj[:, 3]) = 32.0
587     historl_G_best_iter[iter, 3] = 32.0
588 Begin iteration:
589
590 iter = 18
591     cord_individual_obj[indivial_i, :] = [ 0. 8. 55. 63.]
592     cord_individual_obj[indivial_i, :] = [ 1. 6. 49. 55.]
593     cord_individual_obj[indivial_i, :] = [ 2. 9. 45. 54.]
594     cord_individual_obj[indivial_i, :] = [ 3. 6. 66. 72.]
595     cord_individual_obj[indivial_i, :] = [ 4. 7. 51. 58.]
596     cord_individual_obj[indivial_i, :] = [ 5. 6. 58. 64.]
597     cord_individual_obj[indivial_i, :] = [ 6. 8. 104. 112.]
598     cord_individual_obj[indivial_i, :] = [ 7. 5. 46. 51.]
599     cord_individual_obj[indivial_i, :] = [ 8. 6. 61. 67.]
600     cord_individual_obj[indivial_i, :] = [ 9. 6. 36. 42.]
601     cord_individual_obj[indivial_i, :] = [10. 7. 53. 60.]
602     cord_individual_obj[indivial_i, :] = [11. 6. 85. 91.]
603     cord_individual_obj[indivial_i, :] = [12. 7. 104. 111.]
604     cord_individual_obj[indivial_i, :] = [13. 6. 82. 88.]
605     cord_individual_obj[indivial_i, :] = [14. 6. 49. 55.]
606     cord_individual_obj[indivial_i, :] = [15. 5. 75. 80.]
607     cord_individual_obj[indivial_i, :] = [16. 6. 51. 57.]
608     cord_individual_obj[indivial_i, :] = [17. 6. 44. 50.]
609     cord_individual_obj[indivial_i, :] = [18. 6. 58. 64.]
610     cord_individual_obj[indivial_i, :] = [19. 6. 26. 32.]
611     cord_individual_obj[indivial_i, :] = [20. 6. 99. 105.]
612     cord_individual_obj[indivial_i, :] = [21. 7. 51. 58.]
613     cord_individual_obj[indivial_i, :] = [22. 7. 119. 126.]
614     cord_individual_obj[indivial_i, :] = [23. 5. 55. 60.]
615     cord_individual_obj[indivial_i, :] = [24. 6. 52. 58.]
616
617     min(cord_individual_obj[:, 3]) = 32.0
618     historl_G_best_iter[iter, 3] = 32.0
619 Begin iteration:
620
621 iter = 19
622     cord_individual_obj[indivial_i, :] = [ 0. 7. 69. 76.]
623     cord_individual_obj[indivial_i, :] = [ 1. 8. 73. 81.]
624     cord_individual_obj[indivial_i, :] = [ 2. 6. 45. 51.]
625     cord_individual_obj[indivial_i, :] = [ 3. 7. 44. 51.]
626     cord_individual_obj[indivial_i, :] = [ 4. 8. 31. 39.]
627     cord_individual_obj[indivial_i, :] = [ 5. 7. 162. 169.]
628     cord_individual_obj[indivial_i, :] = [ 6. 7. 61. 68.]
629     cord_individual_obj[indivial_i, :] = [ 7. 8. 120. 128.]
630     cord_individual_obj[indivial_i, :] = [ 8. 4. 109. 113.]
631     cord_individual_obj[indivial_i, :] = [ 9. 8. 72. 80.]
632     cord_individual_obj[indivial_i, :] = [10. 6. 117. 123.]
633     cord_individual_obj[indivial_i, :] = [11. 7. 90. 97.]
634     cord_individual_obj[indivial_i, :] = [12. 8. 63. 71.]
635     cord_individual_obj[indivial_i, :] = [13. 5. 139. 144.]
636     cord_individual_obj[indivial_i, :] = [14. 7. 42. 49.]
637     cord_individual_obj[indivial_i, :] = [15. 8. 92. 100.]
638     cord_individual_obj[indivial_i, :] = [16. 6. 47. 53.]
639     cord_individual_obj[indivial_i, :] = [17. 7. 53. 60.]
640     cord_individual_obj[indivial_i, :] = [18. 7. 41. 48.]
641     cord_individual_obj[indivial_i, :] = [19. 7. 42. 49.]
642     cord_individual_obj[indivial_i, :] = [20. 6. 68. 74.]
643     cord_individual_obj[indivial_i, :] = [21. 6. 77. 83.]
644     cord_individual_obj[indivial_i, :] = [22. 6. 26. 32.]
645     cord_individual_obj[indivial_i, :] = [23. 6. 126. 132.]
646     cord_individual_obj[indivial_i, :] = [24. 6. 74. 80.]
647
648     min(cord_individual_obj[:, 3]) = 32.0
649     historl_G_best_iter[iter, 3] = 32.0
650 Begin iteration:
651
652 iter = 20
653     cord_individual_obj[indivial_i, :] = [ 0. 8. 97. 105.]
654     cord_individual_obj[indivial_i, :] = [ 1. 9. 98. 107.]
655     cord_individual_obj[indivial_i, :] = [ 2. 8. 36. 44.]
656     cord_individual_obj[indivial_i, :] = [ 3. 7. 65. 72.]
657     cord_individual_obj[indivial_i, :] = [ 4. 6. 126. 132.]
658     cord_individual_obj[indivial_i, :] = [ 5. 6. 26. 32.]
659     cord_individual_obj[indivial_i, :] = [ 6. 6. 83. 89.]
660     cord_individual_obj[indivial_i, :] = [ 7. 7. 57. 64.]
661     cord_individual_obj[indivial_i, :] = [ 8. 7. 119. 126.]
662     cord_individual_obj[indivial_i, :] = [ 9. 8. 71. 79.]
663     cord_individual_obj[indivial_i, :] = [10. 7. 63. 70.]
664     cord_individual_obj[indivial_i, :] = [11. 6. 87. 93.]
665     cord_individual_obj[indivial_i, :] = [12. 6. 77. 83.]
666     cord_individual_obj[indivial_i, :] = [13. 6. 54. 60.]
667     cord_individual_obj[indivial_i, :] = [14. 6. 86. 92.]
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668 cord_individual_obj[indivial_i,:] = [15. 7. 56. 63.]
669 cord_individual_obj[indivial_i,:] = [16. 6. 54. 60.]
670 cord_individual_obj[indivial_i,:] = [17. 8. 65. 73.]
671 cord_individual_obj[indivial_i,:] = [18. 5. 65. 70.]
672 cord_individual_obj[indivial_i,:] = [19. 7. 68. 75.]
673 cord_individual_obj[indivial_i,:] = [20. 6. 56. 62.]
674 cord_individual_obj[indivial_i,:] = [21. 7. 53. 60.]
675 cord_individual_obj[indivial_i,:] = [22. 6. 54. 60.]
676 cord_individual_obj[indivial_i,:] = [23. 7. 66. 73.]
677 cord_individual_obj[indivial_i,:] = [24. 6. 119. 125.]
678
679 min(cord_individual_obj[:, 3]) = 32.0
680 historl_G_best_iter[iter, 3] = 32.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 154.0
689 Proportion_of_area = 0.1425925925925926
690 BEST_CHROM =
691 berth: [17. 4.5 23. 10. 11. 3.5 3. 23.5 20. 15.5 16. ]
692 time: [0. 2. 0. 3. 0. 0. 3. 2. 5. 3. 4.]
693 num_QC: [2. 5. 4. 3. 5. 3. 3. 2. 3. 3. 3.]
694 Objective function values and some other indicators:
695 Obj0 = 6.00          Obj1 = 26.00          Obj0 + Obj1 = 32.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 22.00
698 Total index of q during berthing: 645.00
699 Specific arrangement for each vessel:
700 V_id: 0           li: 4.0           xi: 17.0           bow of i: 15.0           tail of i: 19.0           gama_i0: 0.0           gama_i1: 2
.0           gama_i1 + 1: 3.0           gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 120.0           work
load_i: 120.0           work load gap_i: 0
701 V_id: 1           li: 9.0           xi: 4.5           bow of i: 0.0           tail of i: 9.0           gama_i0: 2.0           gama_i1: 2.0
.0           gama_i1 + 1: 3.0           gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 100.0           work load_i:
100.0           work load gap_i: 0
702 V_id: 2           li: 8.0           xi: 23.0           bow of i: 19.0           tail of i: 27.0           gama_i0: 0.0           gama_i1: 1
.0           gama_i1 + 1: 2.0           gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 100.0           work
load_i: 100.0           work load gap_i: 0
703 V_id: 3           li: 8.0           xi: 10.0           bow of i: 6.0           tail of i: 14.0           gama_i0: 3.0           gama_i1: 4
.0           gama_i1 + 1: 5.0           gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 120.0           work
load_i: 120.0           work load gap_i: 0
704 V_id: 4           li: 8.0           xi: 11.0           bow of i: 7.0           tail of i: 15.0           gama_i0: 0.0           gama_i1: 1
.0           gama_i1 + 1: 2.0           gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 160.0           work
load_i: 160.0           work load gap_i: 0
705 V_id: 5           li: 7.0           xi: 3.5           bow of i: 0.0           tail of i: 7.0           gama_i0: 0.0           gama_i1: 1.0
.0           gama_i1 + 1: 2.0           gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 120.0           work load_i:
120.0           work load gap_i: 0
706 V_id: 6           li: 6.0           xi: 3.0           bow of i: 0.0           tail of i: 6.0           gama_i0: 3.0           gama_i1: 4.0
.0           gama_i1 + 1: 5.0           gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 120.0           work load_i:
120.0           work load gap_i: 0
707 V_id: 7           li: 9.0           xi: 23.5           bow of i: 19.0           tail of i: 28.0           gama_i0: 2.0           gama_i1: 4
.0           gama_i1 + 1: 5.0           gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 100.0           work
load_i: 100.0           work load gap_i: 0
708 V_id: 8           li: 4.0           xi: 20.0           bow of i: 18.0           tail of i: 22.0           gama_i0: 5.0           gama_i1: 5
.0           gama_i1 + 1: 6.0           gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 60.0           work
load_i: 60.0           work load gap_i: 0
709 V_id: 9           li: 3.0           xi: 15.5           bow of i: 14.0           tail of i: 17.0           gama_i0: 3.0           gama_i1: 3
.0           gama_i1 + 1: 4.0           gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 60.0           work
load_i: 60.0           work load gap_i: 0
710 V_id: 10          li: 4.0           xi: 16.0           bow of i: 14.0           tail of i: 18.0           gama_i0: 4.0           gama_i1: 1
.0           gama_i1 + 1: 7.0           gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 160.0           work
load_i: 160.0           work load gap_i: 0
711
712 Algorithm finished and the total CPU time: 299 s
713 End
714

```