

```

1 C:\Users\Kevin.DUCHARLET\Home\PycharmProjects\
  datastreamOutlierDetection\venv\Scripts\python.exe C
  :/Users/Kevin.DUCHARLET/Home/PycharmProjects/
  datastreamOutlierDetection/tests/
  osmcod_parameters_selection.py
2 OSMCOD k=5 R=0.1 win_size=2000: 100%|██████████| 4520
  /4520 [00:08<00:00, 515.03it/s]
3 OSMCOD k=5 R=0.1 win_size=5000: 100%|██████████| 4520
  /4520 [00:09<00:00, 488.05it/s]
4 OSMCOD k=5 R=0.2 win_size=100: 100%|██████████| 4520/
  4520 [00:05<00:00, 777.97it/s]
5 OSMCOD k=5 R=0.2 win_size=200: 100%|██████████| 4520/
  4520 [00:06<00:00, 672.50it/s]
6 OSMCOD k=5 R=0.2 win_size=500: 100%|██████████| 4520/
  4520 [00:09<00:00, 497.04it/s]
7 OSMCOD k=5 R=0.2 win_size=1000: 100%|██████████| 4520
  /4520 [00:09<00:00, 496.15it/s]
8 OSMCOD k=5 R=0.2 win_size=2000: 100%|██████████| 4520
  /4520 [00:09<00:00, 496.17it/s]
9 OSMCOD k=5 R=0.2 win_size=5000: 100%|██████████| 4520
  /4520 [00:09<00:00, 484.73it/s]
10 OSMCOD k=5 R=0.5 win_size=100: 100%|██████████| 4520/
  4520 [00:05<00:00, 767.30it/s]
11 OSMCOD k=5 R=0.5 win_size=200: 100%|██████████| 4520/
  4520 [00:08<00:00, 548.75it/s]
12 OSMCOD k=5 R=0.5 win_size=500: 100%|██████████| 4520/
  4520 [00:14<00:00, 309.56it/s]
13 OSMCOD k=5 R=0.5 win_size=1000: 100%|██████████| 4520
  /4520 [00:17<00:00, 263.56it/s]
14 OSMCOD k=5 R=0.5 win_size=2000: 100%|██████████| 4520
  /4520 [00:14<00:00, 305.66it/s]
15 OSMCOD k=5 R=0.5 win_size=5000: 100%|██████████| 4520
  /4520 [00:15<00:00, 297.62it/s]
16 OSMCOD k=5 R=1 win_size=100: 100%|██████████| 4520/
  4520 [00:06<00:00, 657.86it/s]
17 OSMCOD k=5 R=1 win_size=200: 100%|██████████| 4520/
  4520 [00:10<00:00, 413.41it/s]
18 OSMCOD k=5 R=1 win_size=500: 100%|██████████| 4520/
  4520 [00:20<00:00, 219.31it/s]
19 OSMCOD k=5 R=1 win_size=1000: 100%|██████████| 4520/
  4520 [00:20<00:00, 215.75it/s]

```

```

20 OSMCOD k=5 R=1 win_size=2000: 100%|██████████| 4520/
   4520 [00:20<00:00, 223.04it/s]
21 OSMCOD k=5 R=1 win_size=5000: 100%|██████████| 4520/
   4520 [00:20<00:00, 224.02it/s]
22 OSMCOD k=5 R=1.2 win_size=100: 100%|██████████| 4520/
   4520 [00:06<00:00, 744.59it/s]
23 OSMCOD k=5 R=1.2 win_size=200: 100%|██████████| 4520/
   4520 [00:09<00:00, 479.28it/s]
24 OSMCOD k=5 R=1.2 win_size=500: 100%|██████████| 4520/
   4520 [00:20<00:00, 225.92it/s]
25 OSMCOD k=5 R=1.2 win_size=1000: 100%|██████████| 4520
   /4520 [00:20<00:00, 225.96it/s]
26 OSMCOD k=5 R=1.2 win_size=2000: 100%|██████████| 4520
   /4520 [00:19<00:00, 230.23it/s]
27 OSMCOD k=5 R=1.2 win_size=5000: 100%|██████████| 4520
   /4520 [00:20<00:00, 218.86it/s]
28 OSMCOD k=5 R=1.5 win_size=100: 100%|██████████| 4520/
   4520 [00:05<00:00, 826.24it/s]
29 OSMCOD k=5 R=1.5 win_size=200: 100%|██████████| 4520/
   4520 [00:09<00:00, 499.36it/s]
30 OSMCOD k=5 R=1.5 win_size=500: 100%|██████████| 4520/
   4520 [00:18<00:00, 239.09it/s]
31 OSMCOD k=5 R=1.5 win_size=1000: 100%|██████████| 4520
   /4520 [00:19<00:00, 232.70it/s]
32 OSMCOD k=5 R=1.5 win_size=2000: 100%|██████████| 4520
   /4520 [00:19<00:00, 237.73it/s]
33 OSMCOD k=5 R=1.5 win_size=5000: 100%|██████████| 4520
   /4520 [00:21<00:00, 214.06it/s]
34 OSMCOD k=10 R=0.1 win_size=100: 100%|██████████| 4520
   /4520 [00:11<00:00, 383.36it/s]
35 OSMCOD k=10 R=0.1 win_size=200: 100%|██████████| 4520
   /4520 [00:11<00:00, 385.28it/s]
36 OSMCOD k=10 R=0.1 win_size=500: 100%|██████████| 4520
   /4520 [00:11<00:00, 408.68it/s]
37 OSMCOD k=10 R=0.1 win_size=1000: 100%|██████████|
   4520/4520 [00:11<00:00, 405.23it/s]
38 OSMCOD k=10 R=0.1 win_size=2000: 100%|██████████|
   4520/4520 [00:10<00:00, 414.02it/s]
39 OSMCOD k=10 R=0.1 win_size=5000: 100%|██████████|
   4520/4520 [00:11<00:00, 394.33it/s]
40 OSMCOD k=10 R=0.2 win_size=100: 100%|██████████| 4520

```

```

40 /4520 [00:07<00:00, 610.70it/s]
41 OSMCOD k=10 R=0.2 win_size=200: 100%|██████████| 4520
   /4520 [00:08<00:00, 564.71it/s]
42 OSMCOD k=10 R=0.2 win_size=500: 100%|██████████| 4520
   /4520 [00:10<00:00, 426.24it/s]
43 OSMCOD k=10 R=0.2 win_size=1000: 100%|██████████|
   4520/4520 [00:11<00:00, 410.33it/s]
44 OSMCOD k=10 R=0.2 win_size=2000: 100%|██████████|
   4520/4520 [00:10<00:00, 430.69it/s]
45 OSMCOD k=10 R=0.2 win_size=5000: 100%|██████████|
   4520/4520 [00:10<00:00, 424.80it/s]
46 OSMCOD k=10 R=0.5 win_size=100: 100%|██████████| 4520
   /4520 [00:08<00:00, 558.86it/s]
47 OSMCOD k=10 R=0.5 win_size=200: 100%|██████████| 4520
   /4520 [00:09<00:00, 458.72it/s]
48 OSMCOD k=10 R=0.5 win_size=500: 100%|██████████| 4520
   /4520 [00:16<00:00, 269.02it/s]
49 OSMCOD k=10 R=0.5 win_size=1000: 100%|██████████|
   4520/4520 [00:17<00:00, 252.32it/s]
50 OSMCOD k=10 R=0.5 win_size=2000: 100%|██████████|
   4520/4520 [00:16<00:00, 273.12it/s]
51 OSMCOD k=10 R=0.5 win_size=5000: 100%|██████████|
   4520/4520 [00:16<00:00, 269.06it/s]
52 OSMCOD k=10 R=1 win_size=100: 100%|██████████| 4520/
   4520 [00:08<00:00, 520.53it/s]
53 OSMCOD k=10 R=1 win_size=200: 100%|██████████| 4520/
   4520 [00:14<00:00, 319.28it/s]
54 OSMCOD k=10 R=1 win_size=500: 100%|██████████| 4520/
   4520 [00:24<00:00, 186.98it/s]
55 OSMCOD k=10 R=1 win_size=1000: 100%|██████████| 4520/
   4520 [00:22<00:00, 197.25it/s]
56 OSMCOD k=10 R=1 win_size=2000: 100%|██████████| 4520/
   4520 [00:21<00:00, 206.21it/s]
57 OSMCOD k=10 R=1 win_size=5000: 100%|██████████| 4520/
   4520 [00:23<00:00, 191.90it/s]
58 OSMCOD k=10 R=1.2 win_size=100: 100%|██████████| 4520
   /4520 [00:07<00:00, 570.76it/s]
59 OSMCOD k=10 R=1.2 win_size=200: 100%|██████████| 4520
   /4520 [00:11<00:00, 384.39it/s]
60 OSMCOD k=10 R=1.2 win_size=500: 100%|██████████| 4520
   /4520 [00:21<00:00, 211.88it/s]

```

```
61 OSMCOD k=10 R=1.2 win_size=1000: 100%|██████████|
    4520/4520 [00:21<00:00, 213.74it/s]
62 OSMCOD k=10 R=1.2 win_size=2000: 100%|██████████|
    4520/4520 [00:20<00:00, 218.79it/s]
63 OSMCOD k=10 R=1.2 win_size=5000: 100%|██████████|
    4520/4520 [00:21<00:00, 213.29it/s]
64 OSMCOD k=10 R=1.5 win_size=100: 100%|██████████|
    4520/4520 [00:06<00:00, 653.01it/s]
65 OSMCOD k=10 R=1.5 win_size=200: 100%|██████████|
    4520/4520 [00:10<00:00, 450.98it/s]
66 OSMCOD k=10 R=1.5 win_size=500: 100%|██████████|
    4520/4520 [00:21<00:00, 210.75it/s]
67 OSMCOD k=10 R=1.5 win_size=1000: 100%|██████████|
    4520/4520 [00:20<00:00, 219.39it/s]
68 OSMCOD k=10 R=1.5 win_size=2000: 100%|██████████|
    4520/4520 [00:20<00:00, 222.76it/s]
69 OSMCOD k=10 R=1.5 win_size=5000: 100%|██████████|
    4520/4520 [00:20<00:00, 222.83it/s]
70 OSMCOD k=15 R=0.1 win_size=100: 100%|██████████|
    4520/4520 [00:11<00:00, 396.40it/s]
71 OSMCOD k=15 R=0.1 win_size=200: 100%|██████████|
    4520/4520 [00:11<00:00, 397.93it/s]
72 OSMCOD k=15 R=0.1 win_size=500: 100%|██████████|
    4520/4520 [00:16<00:00, 271.21it/s]
73 OSMCOD k=15 R=0.1 win_size=1000: 100%|██████████|
    4520/4520 [00:15<00:00, 285.33it/s]
74 OSMCOD k=15 R=0.1 win_size=2000: 100%|██████████|
    4520/4520 [00:13<00:00, 334.03it/s]
75 OSMCOD k=15 R=0.1 win_size=5000: 100%|██████████|
    4520/4520 [00:13<00:00, 325.06it/s]
76 OSMCOD k=15 R=0.2 win_size=100: 100%|██████████|
    4520/4520 [00:09<00:00, 485.38it/s]
77 OSMCOD k=15 R=0.2 win_size=200: 100%|██████████|
    4520/4520 [00:09<00:00, 466.40it/s]
78 OSMCOD k=15 R=0.2 win_size=500: 100%|██████████|
    4520/4520 [00:12<00:00, 372.24it/s]
79 OSMCOD k=15 R=0.2 win_size=1000: 100%|██████████|
    4520/4520 [00:11<00:00, 386.99it/s]
80 OSMCOD k=15 R=0.2 win_size=2000: 100%|██████████|
    4520/4520 [00:11<00:00, 383.69it/s]
81 OSMCOD k=15 R=0.2 win_size=5000: 100%|██████████|
```

```

81 4520/4520 [00:11<00:00, 391.77it/s]
82 OSMCOD k=15 R=0.5 win_size=100: 100%|██████████|
   4520/4520 [00:09<00:00, 480.03it/s]
83 OSMCOD k=15 R=0.5 win_size=200: 100%|██████████|
   4520/4520 [00:11<00:00, 381.51it/s]
84 OSMCOD k=15 R=0.5 win_size=500: 100%|██████████|
   4520/4520 [00:18<00:00, 247.09it/s]
85 OSMCOD k=15 R=0.5 win_size=1000: 100%|██████████|
   4520/4520 [00:18<00:00, 245.40it/s]
86 OSMCOD k=15 R=0.5 win_size=2000: 100%|██████████|
   4520/4520 [00:18<00:00, 242.97it/s]
87 OSMCOD k=15 R=0.5 win_size=5000: 100%|██████████|
   4520/4520 [00:18<00:00, 245.66it/s]
88 OSMCOD k=15 R=1 win_size=100: 100%|██████████| 4520/
   4520 [00:10<00:00, 415.49it/s]
89 OSMCOD k=15 R=1 win_size=200: 100%|██████████| 4520/
   4520 [00:13<00:00, 342.49it/s]
90 OSMCOD k=15 R=1 win_size=500: 100%|██████████| 4520/
   4520 [00:23<00:00, 193.31it/s]
91 OSMCOD k=15 R=1 win_size=1000: 100%|██████████| 4520
   /4520 [00:23<00:00, 195.14it/s]
92 OSMCOD k=15 R=1 win_size=2000: 100%|██████████| 4520
   /4520 [00:23<00:00, 194.56it/s]
93 OSMCOD k=15 R=1 win_size=5000: 100%|██████████| 4520
   /4520 [00:41<00:00, 109.38it/s]
94 OSMCOD k=15 R=1.2 win_size=100: 100%|██████████|
   4520/4520 [00:18<00:00, 244.44it/s]
95 OSMCOD k=15 R=1.2 win_size=200: 100%|██████████|
   4520/4520 [00:19<00:00, 229.24it/s]
96 OSMCOD k=15 R=1.2 win_size=500: 100%|██████████|
   4520/4520 [00:40<00:00, 112.25it/s]
97 OSMCOD k=15 R=1.2 win_size=1000: 100%|██████████|
   4520/4520 [00:56<00:00, 80.49it/s]
98 OSMCOD k=15 R=1.2 win_size=2000: 100%|██████████|
   4520/4520 [00:42<00:00, 105.82it/s]
99 OSMCOD k=15 R=1.2 win_size=5000: 100%|██████████|
   4520/4520 [00:59<00:00, 75.73it/s]
100 OSMCOD k=15 R=1.5 win_size=100: 100%|██████████|
   4520/4520 [00:29<00:00, 151.91it/s]
101 OSMCOD k=15 R=1.5 win_size=200: 100%|██████████|
   4520/4520 [00:27<00:00, 165.55it/s]

```

```
102 OSMCOD k=15 R=1.5 win_size=500: 100%|██████████|
    4520/4520 [00:42<00:00, 105.61it/s]
103 OSMCOD k=15 R=1.5 win_size=1000: 100%|██████████|
    4520/4520 [00:22<00:00, 201.34it/s]
104 OSMCOD k=15 R=1.5 win_size=2000: 100%|██████████|
    4520/4520 [00:22<00:00, 205.31it/s]
105 OSMCOD k=15 R=1.5 win_size=5000: 100%|██████████|
    4520/4520 [00:25<00:00, 173.88it/s]
106 OSMCOD k=20 R=0.1 win_size=100: 100%|██████████|
    4520/4520 [00:21<00:00, 214.26it/s]
107 OSMCOD k=20 R=0.1 win_size=200: 100%|██████████|
    4520/4520 [00:18<00:00, 242.53it/s]
108 OSMCOD k=20 R=0.1 win_size=500: 100%|██████████|
    4520/4520 [00:27<00:00, 162.33it/s]
109 OSMCOD k=20 R=0.1 win_size=1000: 100%|██████████|
    4520/4520 [00:17<00:00, 259.20it/s]
110 OSMCOD k=20 R=0.1 win_size=2000: 100%|██████████|
    4520/4520 [00:17<00:00, 260.84it/s]
111 OSMCOD k=20 R=0.1 win_size=5000: 100%|██████████|
    4520/4520 [00:27<00:00, 164.09it/s]
112 OSMCOD k=20 R=0.2 win_size=100: 100%|██████████|
    4520/4520 [00:18<00:00, 243.11it/s]
113 OSMCOD k=20 R=0.2 win_size=200: 100%|██████████|
    4520/4520 [00:18<00:00, 249.93it/s]
114 OSMCOD k=20 R=0.2 win_size=500: 100%|██████████|
    4520/4520 [00:17<00:00, 254.36it/s]
115 OSMCOD k=20 R=0.2 win_size=1000: 100%|██████████|
    4520/4520 [00:16<00:00, 268.89it/s]
116 OSMCOD k=20 R=0.2 win_size=2000: 100%|██████████|
    4520/4520 [00:14<00:00, 317.83it/s]
117 OSMCOD k=20 R=0.2 win_size=5000: 100%|██████████|
    4520/4520 [00:13<00:00, 328.12it/s]
118 OSMCOD k=20 R=0.5 win_size=100: 100%|██████████|
    4520/4520 [00:11<00:00, 400.69it/s]
119 OSMCOD k=20 R=0.5 win_size=200: 100%|██████████|
    4520/4520 [00:12<00:00, 352.56it/s]
120 OSMCOD k=20 R=0.5 win_size=500: 100%|██████████|
    4520/4520 [00:19<00:00, 235.83it/s]
121 OSMCOD k=20 R=0.5 win_size=1000: 100%|██████████|
    4520/4520 [00:19<00:00, 229.56it/s]
122 OSMCOD k=20 R=0.5 win_size=2000: 100%|██████████|
```

```

122 4520/4520 [00:19<00:00, 230.57it/s]
123 OSMCOD k=20 R=0.5 win_size=5000: 100%|██████████|
    4520/4520 [00:19<00:00, 229.18it/s]
124 OSMCOD k=20 R=1 win_size=100: 100%|██████████| 4520/
    4520 [00:12<00:00, 372.05it/s]
125 OSMCOD k=20 R=1 win_size=200: 100%|██████████| 4520/
    4520 [00:14<00:00, 312.87it/s]
126 OSMCOD k=20 R=1 win_size=500: 100%|██████████| 4520/
    4520 [00:25<00:00, 175.38it/s]
127 OSMCOD k=20 R=1 win_size=1000: 100%|██████████| 4520
    /4520 [00:30<00:00, 148.27it/s]
128 OSMCOD k=20 R=1 win_size=2000: 100%|██████████| 4520
    /4520 [00:25<00:00, 177.11it/s]
129 OSMCOD k=20 R=1 win_size=5000: 100%|██████████| 4520
    /4520 [00:25<00:00, 177.49it/s]
130 OSMCOD k=20 R=1.2 win_size=100: 100%|██████████|
    4520/4520 [00:09<00:00, 491.50it/s]
131 OSMCOD k=20 R=1.2 win_size=200: 100%|██████████|
    4520/4520 [00:14<00:00, 318.31it/s]
132 OSMCOD k=20 R=1.2 win_size=500: 100%|██████████|
    4520/4520 [00:23<00:00, 192.95it/s]
133 OSMCOD k=20 R=1.2 win_size=1000: 100%|██████████|
    4520/4520 [00:22<00:00, 197.88it/s]
134 OSMCOD k=20 R=1.2 win_size=2000: 100%|██████████|
    4520/4520 [00:27<00:00, 165.78it/s]
135 OSMCOD k=20 R=1.2 win_size=5000: 100%|██████████|
    4520/4520 [00:26<00:00, 172.28it/s]
136 OSMCOD k=20 R=1.5 win_size=100: 100%|██████████|
    4520/4520 [00:09<00:00, 474.72it/s]
137 OSMCOD k=20 R=1.5 win_size=200: 100%|██████████|
    4520/4520 [00:13<00:00, 323.05it/s]
138 OSMCOD k=20 R=1.5 win_size=500: 100%|██████████|
    4520/4520 [00:24<00:00, 182.37it/s]
139 OSMCOD k=20 R=1.5 win_size=1000: 100%|██████████|
    4520/4520 [00:33<00:00, 136.69it/s]
140 OSMCOD k=20 R=1.5 win_size=2000: 100%|██████████|
    4520/4520 [00:39<00:00, 115.71it/s]
141 OSMCOD k=20 R=1.5 win_size=5000: 100%|██████████|
    4520/4520 [00:34<00:00, 131.08it/s]
142 OSMCOD k=25 R=0.1 win_size=100: 100%|██████████|
    4520/4520 [00:27<00:00, 166.97it/s]

```

```

143 OSMCOD k=25 R=0.1 win_size=200: 100%|██████████|
    4520/4520 [00:20<00:00, 225.67it/s]
144 OSMCOD k=25 R=0.1 win_size=500: 100%|██████████|
    4520/4520 [00:23<00:00, 194.34it/s]
145 OSMCOD k=25 R=0.1 win_size=1000: 100%|██████████|
    4520/4520 [00:19<00:00, 227.98it/s]
146 OSMCOD k=25 R=0.1 win_size=2000: 100%|██████████|
    4520/4520 [00:18<00:00, 243.67it/s]
147 OSMCOD k=25 R=0.1 win_size=5000: 100%|██████████|
    4520/4520 [00:18<00:00, 245.38it/s]
148 OSMCOD k=25 R=0.2 win_size=100: 100%|██████████|
    4520/4520 [00:12<00:00, 363.29it/s]
149 OSMCOD k=25 R=0.2 win_size=200: 100%|██████████|
    4520/4520 [00:13<00:00, 328.13it/s]
150 OSMCOD k=25 R=0.2 win_size=500: 100%|██████████|
    4520/4520 [00:16<00:00, 271.93it/s]
151 OSMCOD k=25 R=0.2 win_size=1000: 100%|██████████|
    4520/4520 [00:15<00:00, 297.56it/s]
152 OSMCOD k=25 R=0.2 win_size=2000: 100%|██████████|
    4520/4520 [00:18<00:00, 246.03it/s]
153 OSMCOD k=25 R=0.2 win_size=5000: 100%|██████████|
    4520/4520 [00:19<00:00, 236.00it/s]
154 OSMCOD k=25 R=0.5 win_size=100: 100%|██████████|
    4520/4520 [00:15<00:00, 283.75it/s]
155 OSMCOD k=25 R=0.5 win_size=200: 100%|██████████|
    4520/4520 [00:19<00:00, 231.72it/s]
156 OSMCOD k=25 R=0.5 win_size=500: 100%|██████████|
    4520/4520 [00:24<00:00, 182.20it/s]
157 OSMCOD k=25 R=0.5 win_size=1000: 100%|██████████|
    4520/4520 [00:24<00:00, 184.55it/s]
158 OSMCOD k=25 R=0.5 win_size=2000: 100%|██████████|
    4520/4520 [00:25<00:00, 178.33it/s]
159 OSMCOD k=25 R=0.5 win_size=5000: 100%|██████████|
    4520/4520 [00:24<00:00, 184.03it/s]
160 OSMCOD k=25 R=1 win_size=100: 100%|██████████| 4520/
    4520 [00:16<00:00, 266.64it/s]
161 OSMCOD k=25 R=1 win_size=200: 100%|██████████| 4520/
    4520 [00:30<00:00, 148.23it/s]
162 OSMCOD k=25 R=1 win_size=500: 100%|██████████| 4520/
    4520 [00:30<00:00, 148.68it/s]
163 OSMCOD k=25 R=1 win_size=1000: 100%|██████████| 4520

```



```

163 /4520 [00:29<00:00, 151.10it/s]
164 OSMCOD k=25 R=1 win_size=2000: 100%|██████████| 4520
    /4520 [00:27<00:00, 161.62it/s]
165 OSMCOD k=25 R=1 win_size=5000: 100%|██████████| 4520
    /4520 [00:26<00:00, 167.55it/s]
166 OSMCOD k=25 R=1.2 win_size=100: 100%|██████████|
    4520/4520 [00:11<00:00, 381.28it/s]
167 OSMCOD k=25 R=1.2 win_size=200: 100%|██████████|
    4520/4520 [00:16<00:00, 278.06it/s]
168 OSMCOD k=25 R=1.2 win_size=500: 100%|██████████|
    4520/4520 [00:29<00:00, 151.58it/s]
169 OSMCOD k=25 R=1.2 win_size=1000: 100%|██████████|
    4520/4520 [00:34<00:00, 132.32it/s]
170 OSMCOD k=25 R=1.2 win_size=2000: 100%|██████████|
    4520/4520 [00:29<00:00, 153.09it/s]
171 OSMCOD k=25 R=1.2 win_size=5000: 100%|██████████|
    4520/4520 [00:28<00:00, 160.74it/s]
172 OSMCOD k=25 R=1.5 win_size=100: 100%|██████████|
    4520/4520 [00:10<00:00, 418.61it/s]
173 OSMCOD k=25 R=1.5 win_size=200: 100%|██████████|
    4520/4520 [00:14<00:00, 308.76it/s]
174 OSMCOD k=25 R=1.5 win_size=500: 100%|██████████|
    4520/4520 [00:25<00:00, 176.11it/s]
175 OSMCOD k=25 R=1.5 win_size=1000: 100%|██████████|
    4520/4520 [00:25<00:00, 177.91it/s]
176 OSMCOD k=25 R=1.5 win_size=2000: 100%|██████████|
    4520/4520 [00:25<00:00, 177.02it/s]
177 OSMCOD k=25 R=1.5 win_size=5000: 100%|██████████|
    4520/4520 [00:23<00:00, 192.19it/s]
178 OSMCOD k=30 R=0.1 win_size=100: 100%|██████████|
    4520/4520 [00:15<00:00, 284.33it/s]
179 OSMCOD k=30 R=0.1 win_size=200: 100%|██████████|
    4520/4520 [00:14<00:00, 301.72it/s]
180 OSMCOD k=30 R=0.1 win_size=500: 100%|██████████|
    4520/4520 [00:16<00:00, 270.70it/s]
181 OSMCOD k=30 R=0.1 win_size=1000: 100%|██████████|
    4520/4520 [00:16<00:00, 266.99it/s]
182 OSMCOD k=30 R=0.1 win_size=2000: 100%|██████████|
    4520/4520 [00:16<00:00, 270.90it/s]
183 OSMCOD k=30 R=0.1 win_size=5000: 100%|██████████|
    4520/4520 [00:17<00:00, 262.73it/s]

```

```

184 OSMCOD k=30 R=0.2 win_size=100: 100%|██████████|
    4520/4520 [00:15<00:00, 284.64it/s]
185 OSMCOD k=30 R=0.2 win_size=200: 100%|██████████|
    4520/4520 [00:15<00:00, 292.09it/s]
186 OSMCOD k=30 R=0.2 win_size=500: 100%|██████████|
    4520/4520 [00:17<00:00, 253.46it/s]
187 OSMCOD k=30 R=0.2 win_size=1000: 100%|██████████|
    4520/4520 [00:18<00:00, 248.71it/s]
188 OSMCOD k=30 R=0.2 win_size=2000: 100%|██████████|
    4520/4520 [00:16<00:00, 279.28it/s]
189 OSMCOD k=30 R=0.2 win_size=5000: 100%|██████████|
    4520/4520 [00:18<00:00, 246.30it/s]
190 OSMCOD k=30 R=0.5 win_size=100: 100%|██████████|
    4520/4520 [00:19<00:00, 227.70it/s]
191 OSMCOD k=30 R=0.5 win_size=200: 100%|██████████|
    4520/4520 [00:16<00:00, 273.29it/s]
192 OSMCOD k=30 R=0.5 win_size=500: 100%|██████████|
    4520/4520 [00:22<00:00, 204.28it/s]
193 OSMCOD k=30 R=0.5 win_size=1000: 100%|██████████|
    4520/4520 [00:22<00:00, 197.69it/s]
194 OSMCOD k=30 R=0.5 win_size=2000: 100%|██████████|
    4520/4520 [00:22<00:00, 197.45it/s]
195 OSMCOD k=30 R=0.5 win_size=5000: 100%|██████████|
    4520/4520 [00:22<00:00, 202.12it/s]
196 OSMCOD k=30 R=1 win_size=100: 100%|██████████| 4520/
    4520 [00:14<00:00, 302.06it/s]
197 OSMCOD k=30 R=1 win_size=200: 100%|██████████| 4520/
    4520 [00:19<00:00, 236.19it/s]
198 OSMCOD k=30 R=1 win_size=500: 100%|██████████| 4520/
    4520 [00:27<00:00, 162.01it/s]
199 OSMCOD k=30 R=1 win_size=1000: 100%|██████████| 4520
    /4520 [00:28<00:00, 160.12it/s]
200 OSMCOD k=30 R=1 win_size=2000: 100%|██████████| 4520
    /4520 [00:29<00:00, 154.64it/s]
201 OSMCOD k=30 R=1 win_size=5000: 100%|██████████| 4520
    /4520 [00:27<00:00, 162.32it/s]
202 OSMCOD k=30 R=1.2 win_size=100: 100%|██████████|
    4520/4520 [00:12<00:00, 371.07it/s]
203 OSMCOD k=30 R=1.2 win_size=200: 100%|██████████|
    4520/4520 [00:16<00:00, 278.79it/s]
204 OSMCOD k=30 R=1.2 win_size=500: 100%|██████████|

```

```

204 4520/4520 [00:26<00:00, 167.58it/s]
205 OSMCOD k=30 R=1.2 win_size=1000: 100%|██████████|
    4520/4520 [00:26<00:00, 171.18it/s]
206 OSMCOD k=30 R=1.2 win_size=2000: 100%|██████████|
    4520/4520 [00:26<00:00, 169.53it/s]
207 OSMCOD k=30 R=1.2 win_size=5000: 100%|██████████|
    4520/4520 [00:27<00:00, 163.99it/s]
208 OSMCOD k=30 R=1.5 win_size=100: 100%|██████████|
    4520/4520 [00:09<00:00, 489.64it/s]
209 OSMCOD k=30 R=1.5 win_size=200: 100%|██████████|
    4520/4520 [00:14<00:00, 305.43it/s]
210 OSMCOD k=30 R=1.5 win_size=500: 100%|██████████|
    4520/4520 [00:32<00:00, 139.07it/s]
211 OSMCOD k=30 R=1.5 win_size=1000: 100%|██████████|
    4520/4520 [00:25<00:00, 180.70it/s]
212 OSMCOD k=30 R=1.5 win_size=2000: 100%|██████████|
    4520/4520 [00:25<00:00, 179.92it/s]
213 OSMCOD k=30 R=1.5 win_size=5000: 100%|██████████|
    4520/4520 [00:24<00:00, 187.23it/s]
214 Traceback (most recent call last):
215   File "C:\Users\Kevin.DUCHARLET\Home\
    PycharmProjects\datastreamOutlierDetection\tests\
    osmcod_parameters_selection.py", line 39, in <module>
216     compute(METHODS, x_train, x_test, y_test, "
    choose_params_osmcod_tm", show=False, close=True)
217   File "C:\Users\Kevin.DUCHARLET\Home\
    PycharmProjects\datastreamOutlierDetection\tests\
    methods_comparison.py", line 130, in compute
218     fig.tight_layout()
219   File "C:\Users\Kevin.DUCHARLET\Home\
    PycharmProjects\datastreamOutlierDetection\venv\lib\
    site-packages\matplotlib\figure.py", line 3224, in
    tight_layout
220     kwargs = get_tight_layout_figure(
221   File "C:\Users\Kevin.DUCHARLET\Home\
    PycharmProjects\datastreamOutlierDetection\venv\lib\
    site-packages\matplotlib\tight_layout.py", line 320
    , in get_tight_layout_figure
222     kwargs = _auto_adjust_subplotpars(fig, renderer,
223   File "C:\Users\Kevin.DUCHARLET\Home\

```

```
223 PycharmProjects\datastreamOutlierDetection\venv\lib\
    site-packages\matplotlib\tight_layout.py", line 128
    , in _auto_adjust_subplotpars
224     _api.warn_external('Tight layout not applied.
    The bottom and top '
225     File "C:\Users\Kevin.DUCHARLET\Home\
    PycharmProjects\datastreamOutlierDetection\venv\lib\
    site-packages\matplotlib\_api\__init__.py", line 299
    , in warn_external
226         warnings.warn(message, category, stacklevel)
227 UserWarning: Tight layout not applied. The bottom
    and top margins cannot be made large enough to
    accommodate all axes decorations.
228
229 Process finished with exit code 1
230
```