Plan prezentacji

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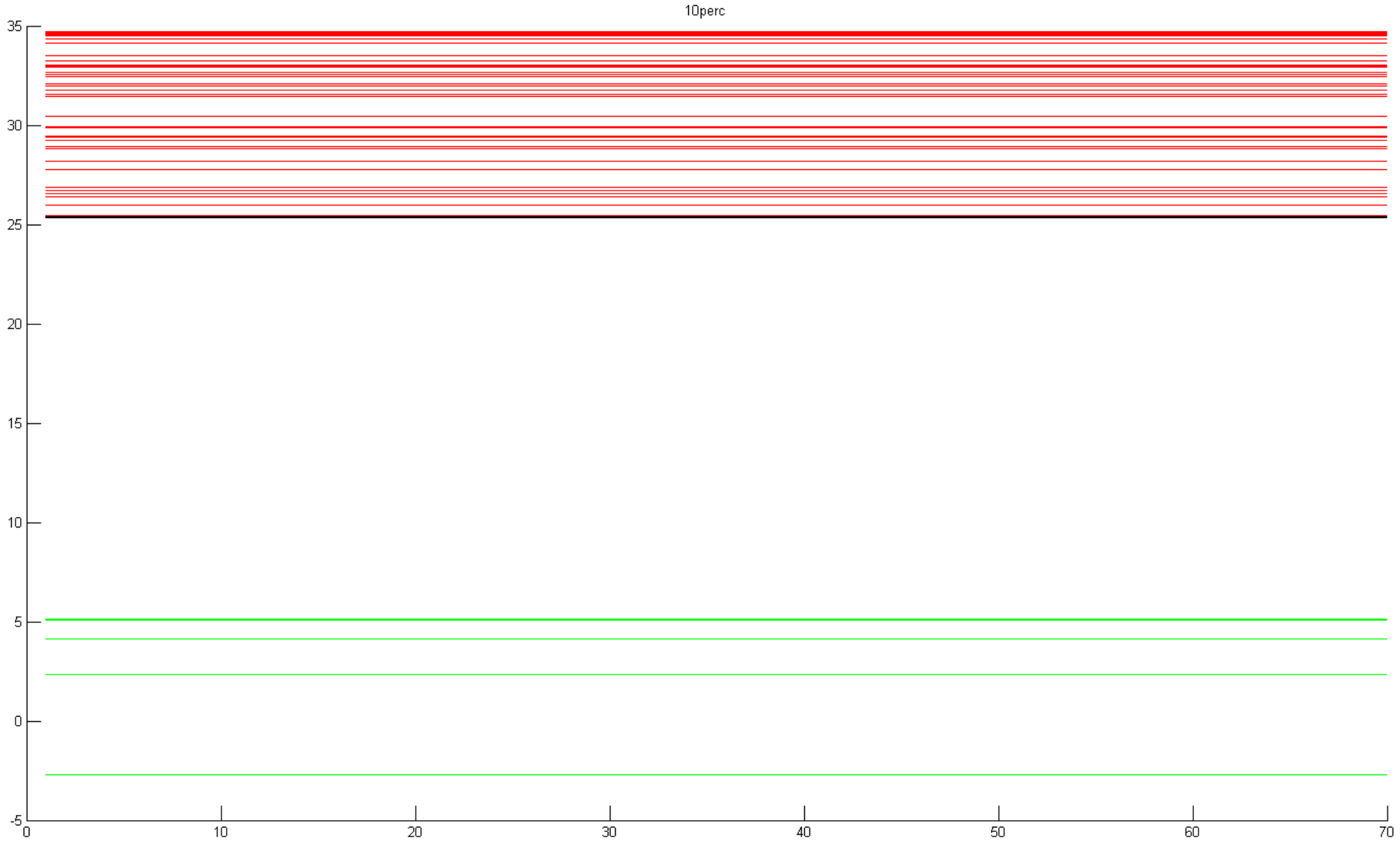
Modyfikacje algorytmu

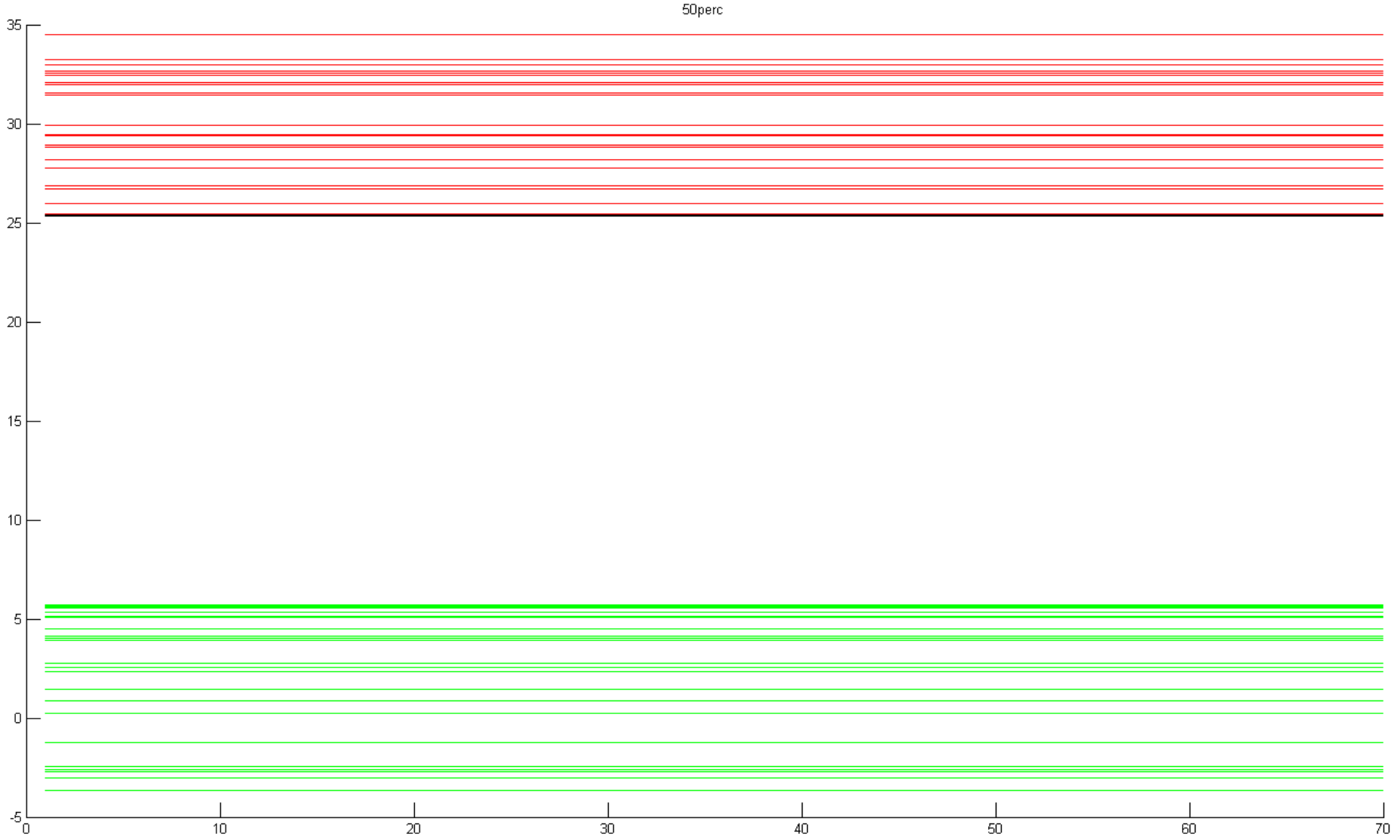
```
function [ ArtifactsIDs ] = mgrEstimateArtifactSignal(Waveforms, Active, QuantTh, MinArtifactsNoToEstimate)

    nWaveforms = size(Waveforms,1);
    numberOfDRW = ones(nWaveforms,1);

    for iWave = 1:nWaveforms
        if Active(iWave) == 1
            tmpArtifact = Waveforms(iWave,:);
            numberOfDRW(iWave) = mgrNumberOfDisqualifyingResultantWaveforms(Waveforms, tmpArtifact, QuantTh, Active);
        end
    end

    artifacts = (numberOfDRW == 0);
    waveformIDs = 1:nWaveforms;
    ArtifactsIDs = waveformIDs(artifacts);

    if length(ArtifactsIDs) < MinArtifactsNoToEstimate
        if length(ArtifactsIDs) == 1
            Active(ArtifactsIDs) = 0;
            [ ArtifactsIDs ] = mgrEstimateArtifactSignal(Waveforms, Active, QuantTh, MinArtifactsNoToEstimate);
        else
            ArtifactsIDs = [];
        end
    end

end
```

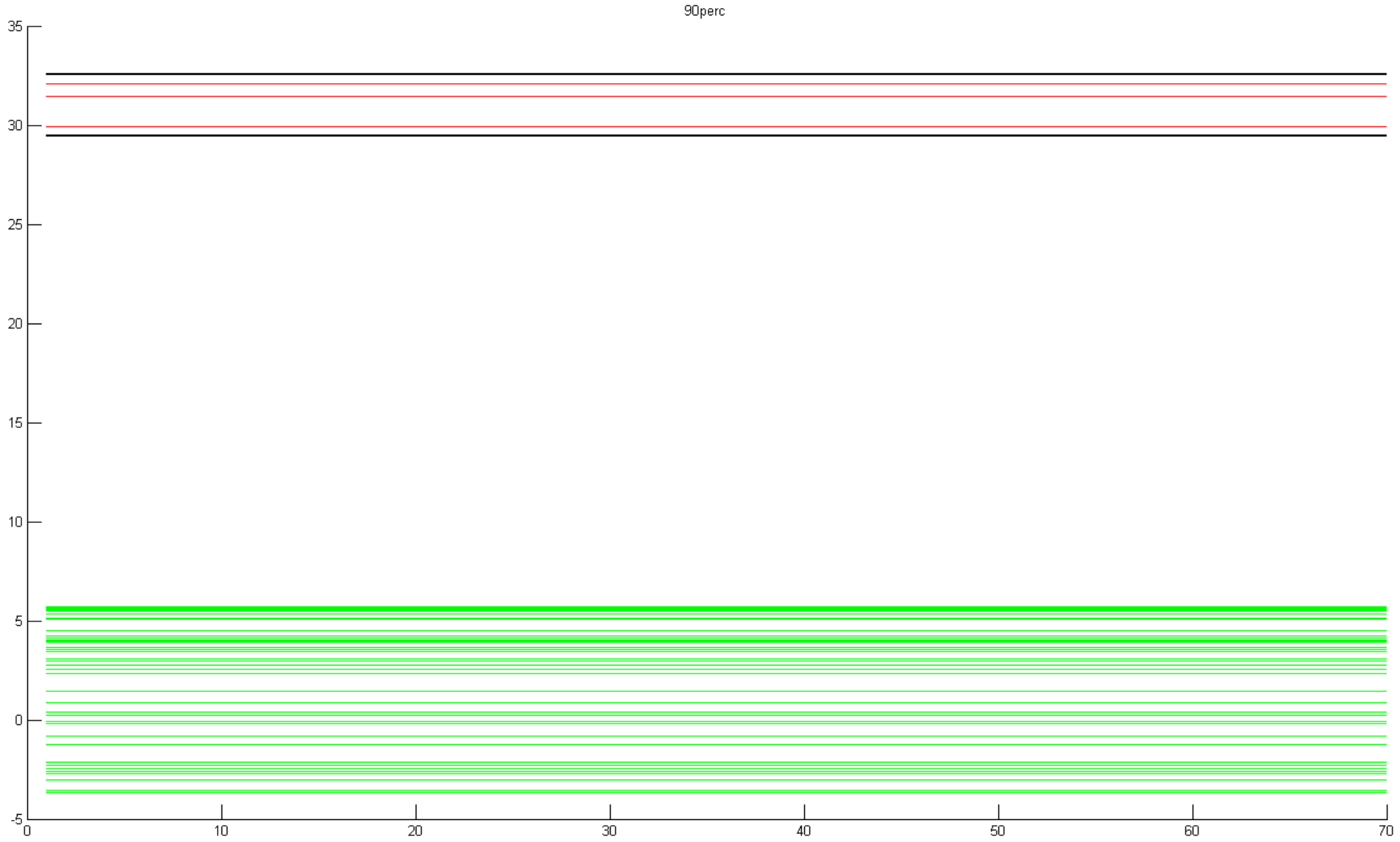
Nowy Algorytm

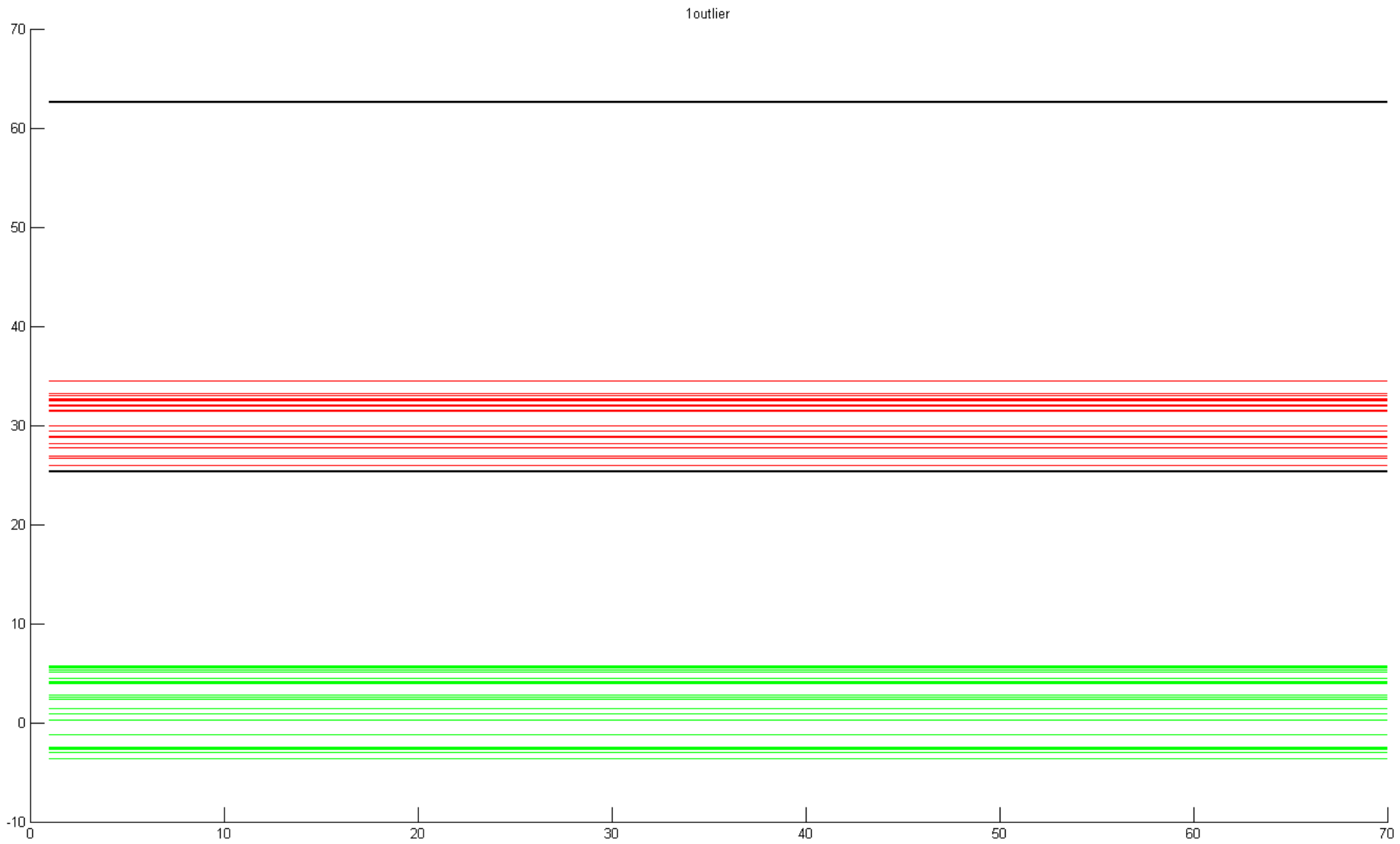
```
function [ resultStruct] = nDRWplusPruning(Waveforms, QuantTh, nDRW, artToPrune, samplesLim)
    %resultStruct fields: artifactIDs, excluded, spikes
    %samplesLim - format [min max] first and last sample taken under
    %    cosideration, the samples outside boundaries are ignored

    resultStruct = struct();
    nWaveforms = size(Waveforms,1);
    numberOfDRW = ones(nWaveforms,1);
    tracesIDs = 1:nWaveforms;
    for iWave = tracesIDs
        tmpArtifact = Waveforms(iWave,:);
        numberOfDRW(iWave) = nDRWFunction(Waveforms, tmpArtifact, QuantTh, samplesLim);
    end
        artifacts = tracesIDs(numberOfDRW < nDRW);
    spikes = setdiff(1:nWaveforms, artifacts);
    excluded = pruneExtremeArtifacts(Waveforms, artifacts, artToPrune, samplesLim);
    artifacts = setdiff(artifacts, excluded);
    resultStruct.artifactIDs = artifacts;
    resultStruct.excluded = excluded;
    resultStruct.spikes = spikes;
end
```

Dzialanie nowego algorytmu – toy problem

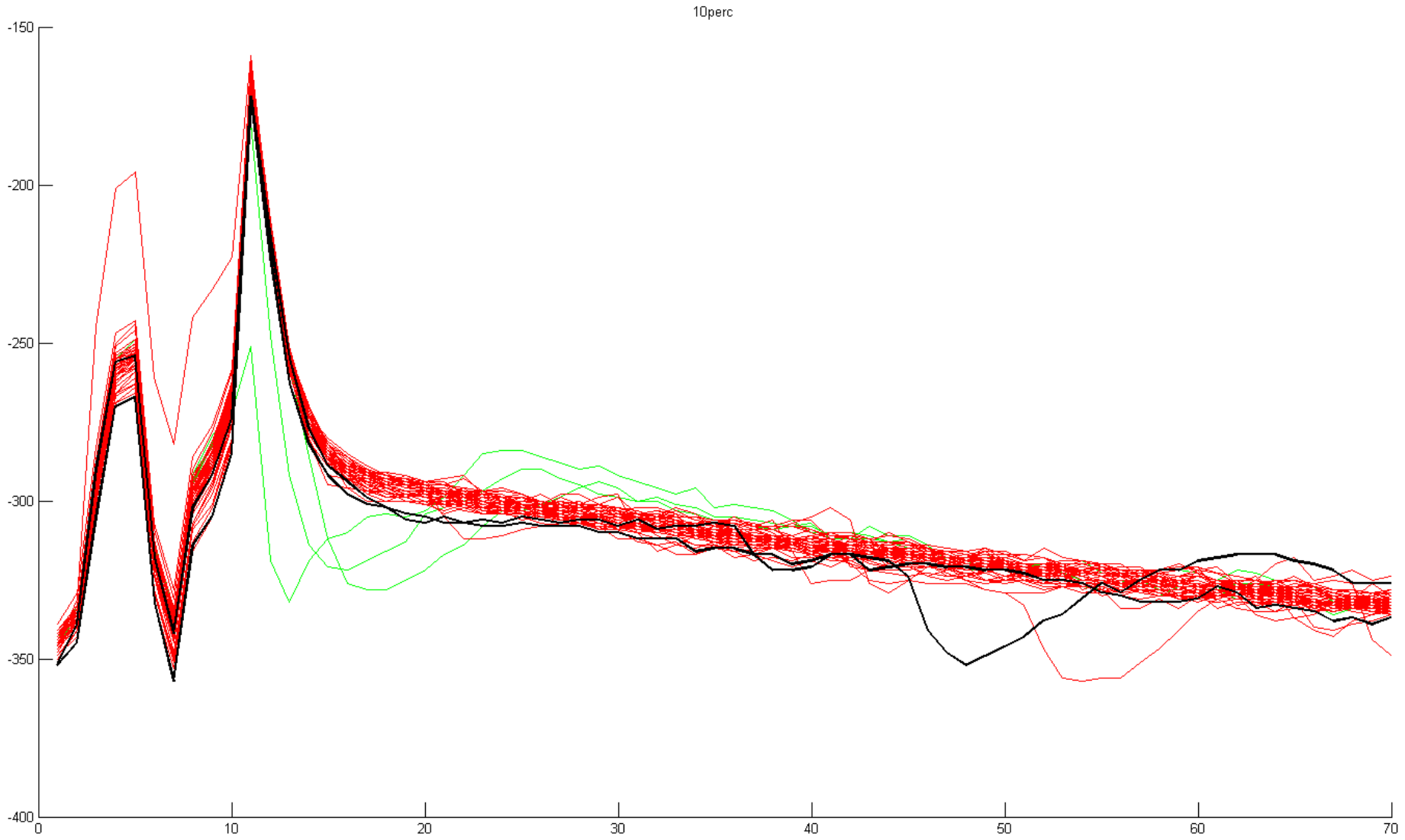


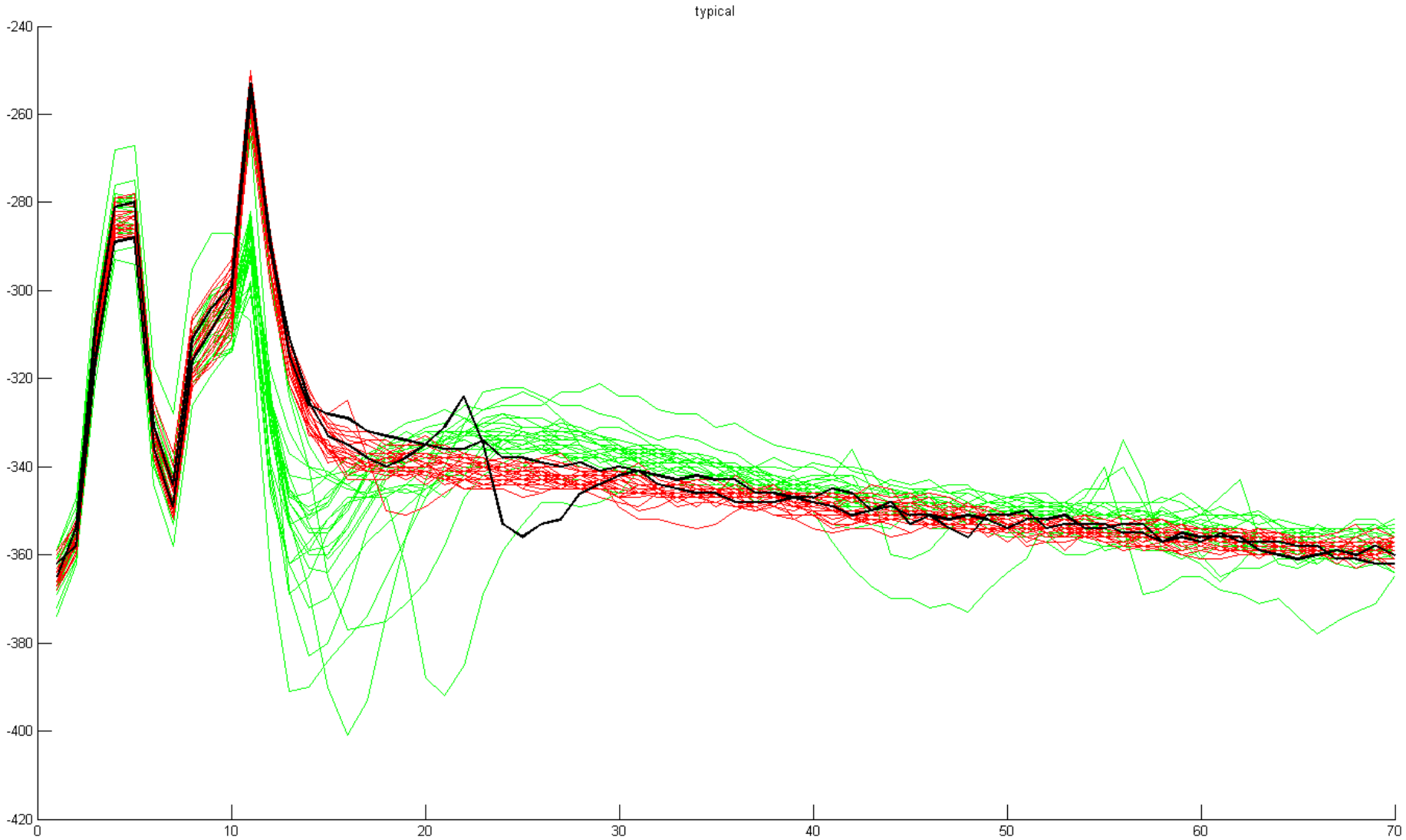

50perc
35
30
25
20
15
10
5
0
-5
0
10
20
30
40
50
60
70

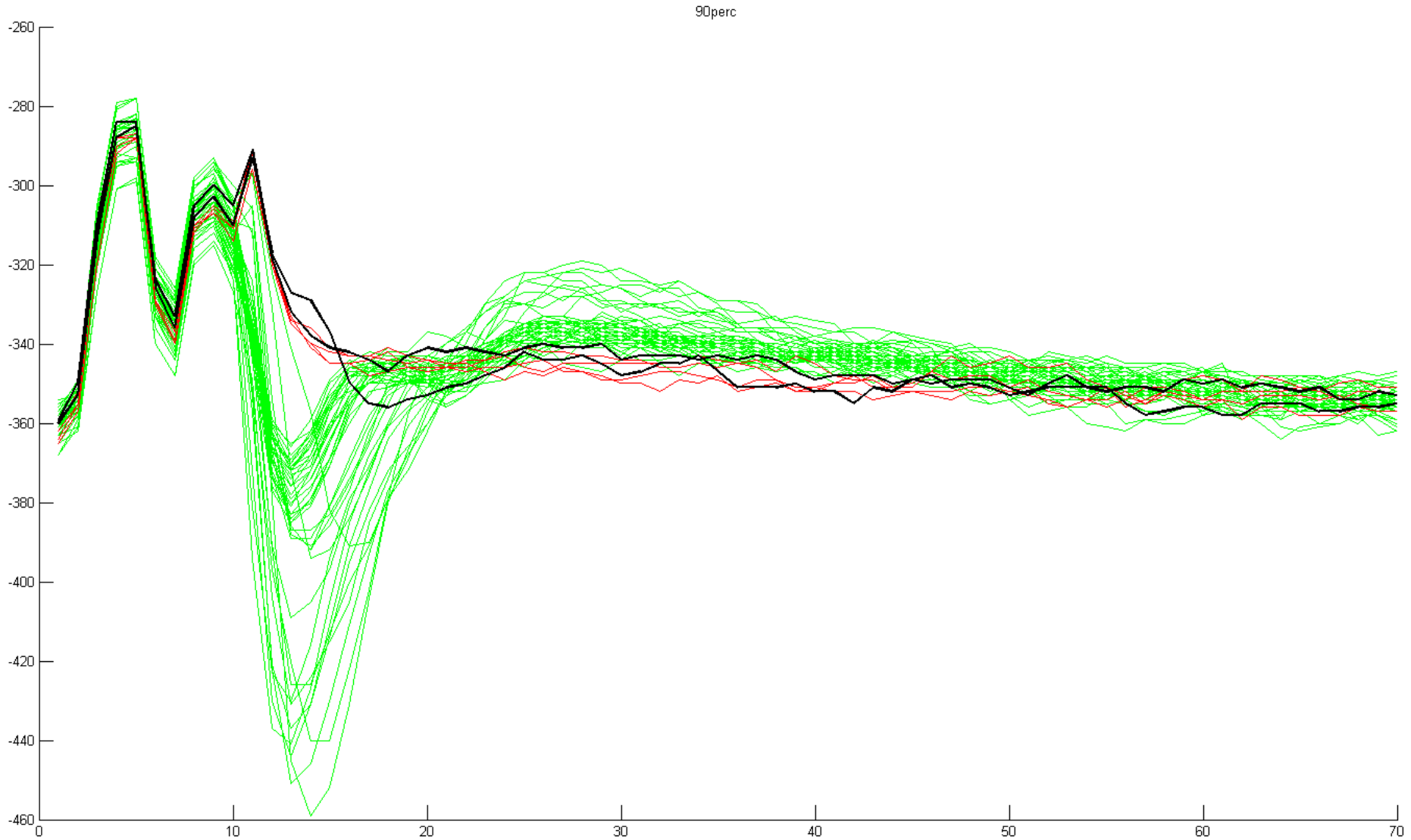

90perc
35
30
25
20
15
10
5
0
-5
0
10
20
30
40
50
60
70

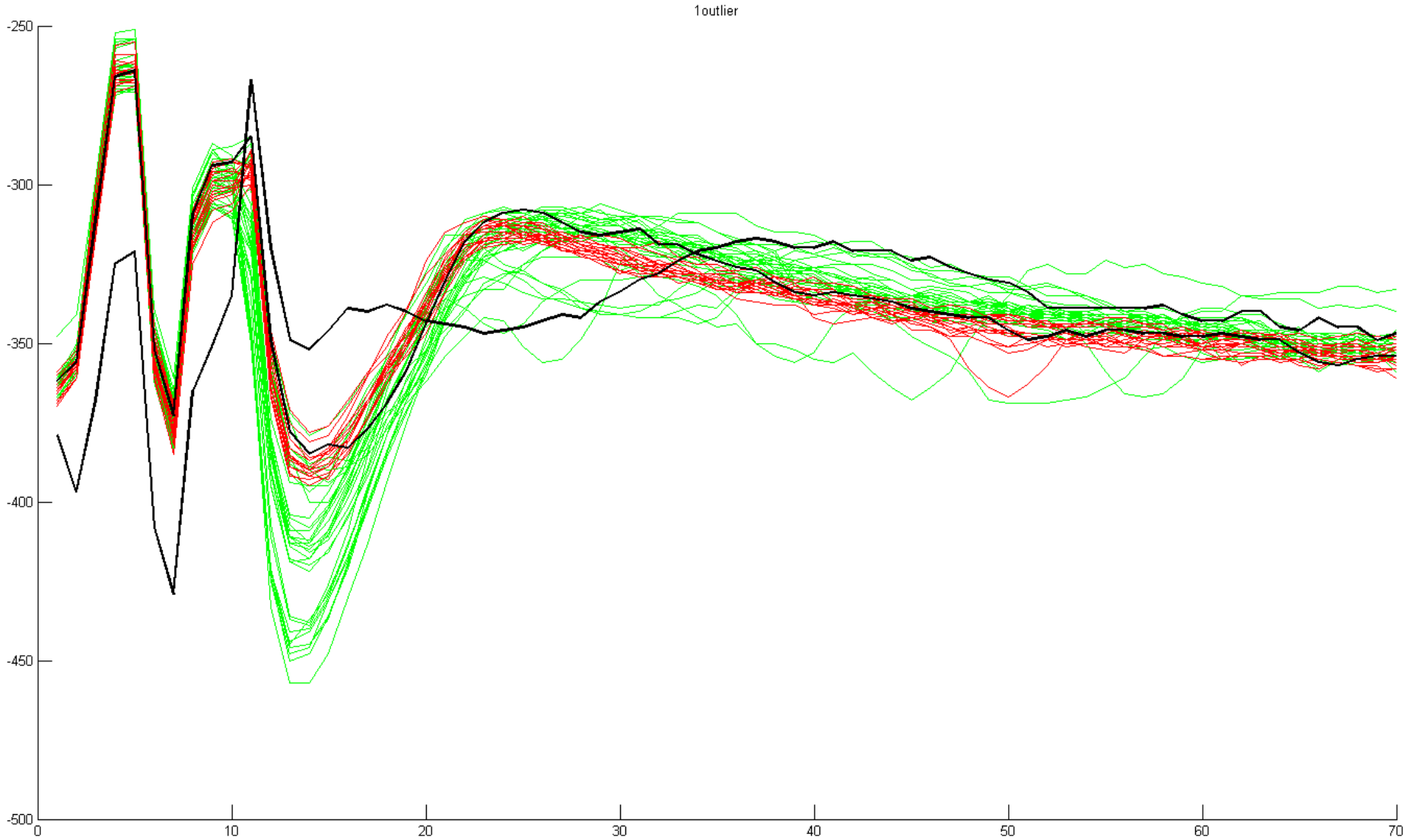

1outlier
70
60
50
40
30
20
10
0
-10
0
10
20
30
40
50
60
70

Dzialanie algorytmu – real life




typical
-240
-260
-280
-300
-320
-340
-360
-380
-400
-420
0
10
20
30
40
50
60
70


90perc
-260
-280
-300
-320
-340
-360
-380
-400
-420
-440
-460
0
10
20
30
40
50
60
70


1outlier
-250
-300
-350
-400
-450
-500
0
10
20
30
40
50
60
70

Miara iloczynu skalarnego

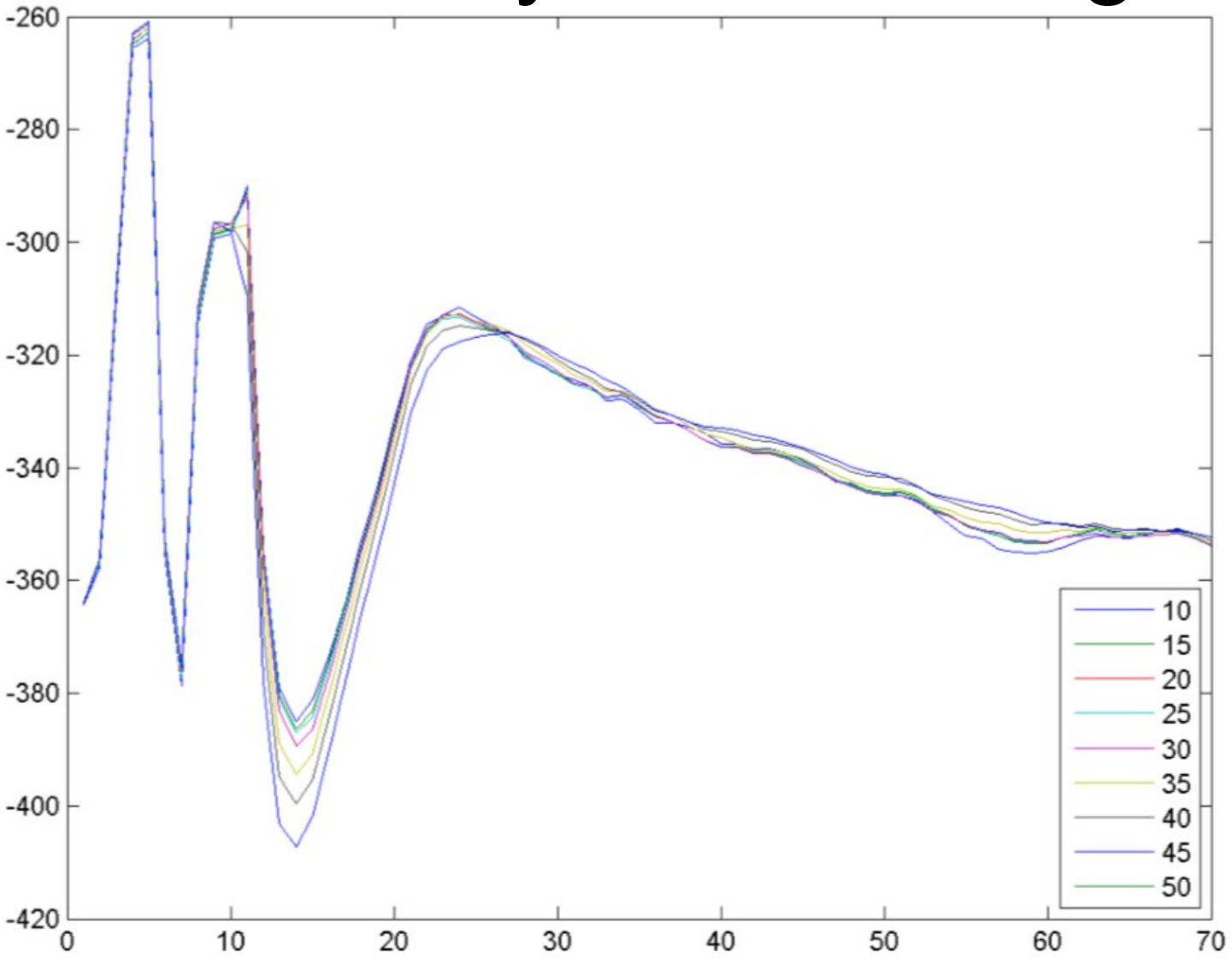
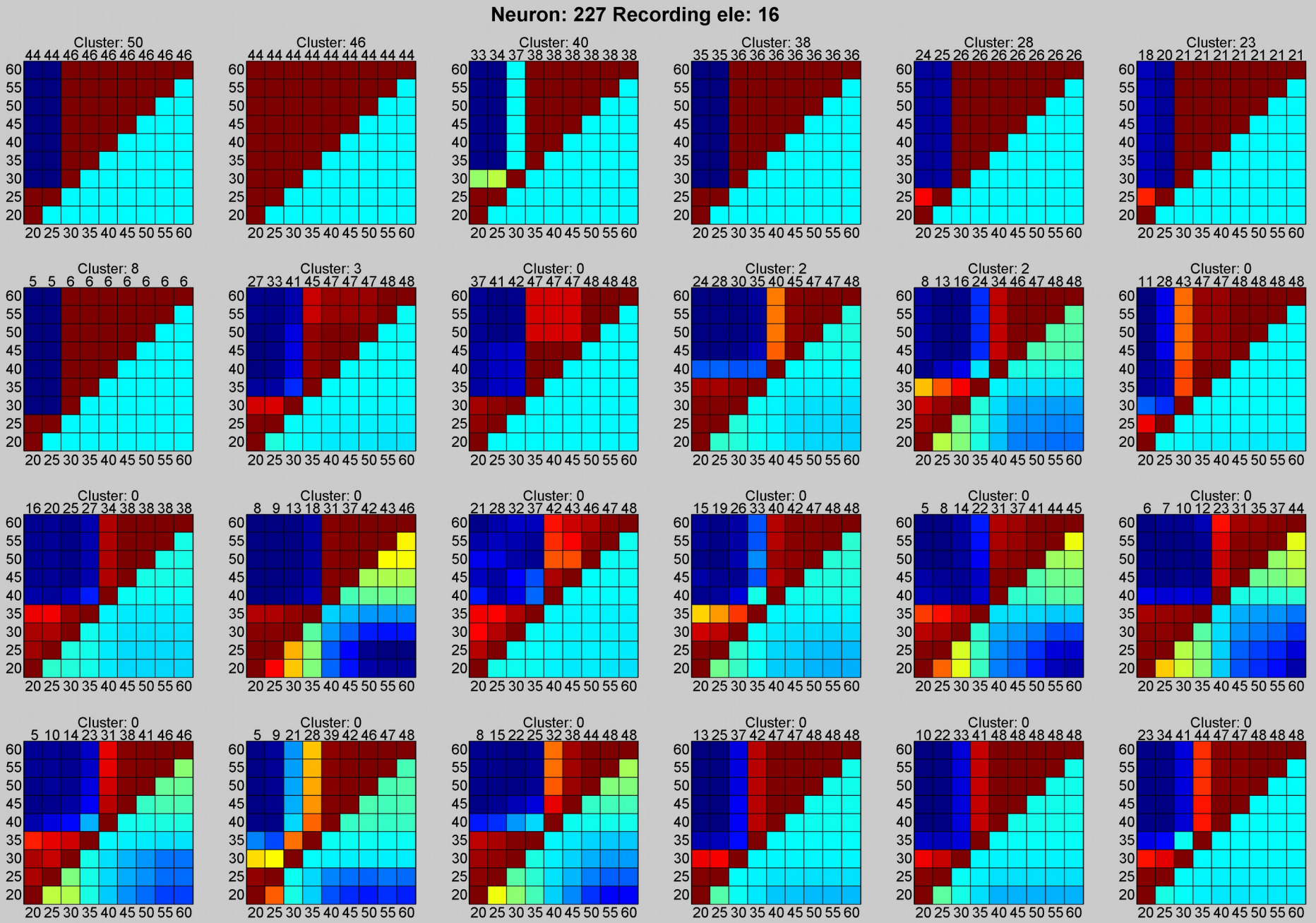
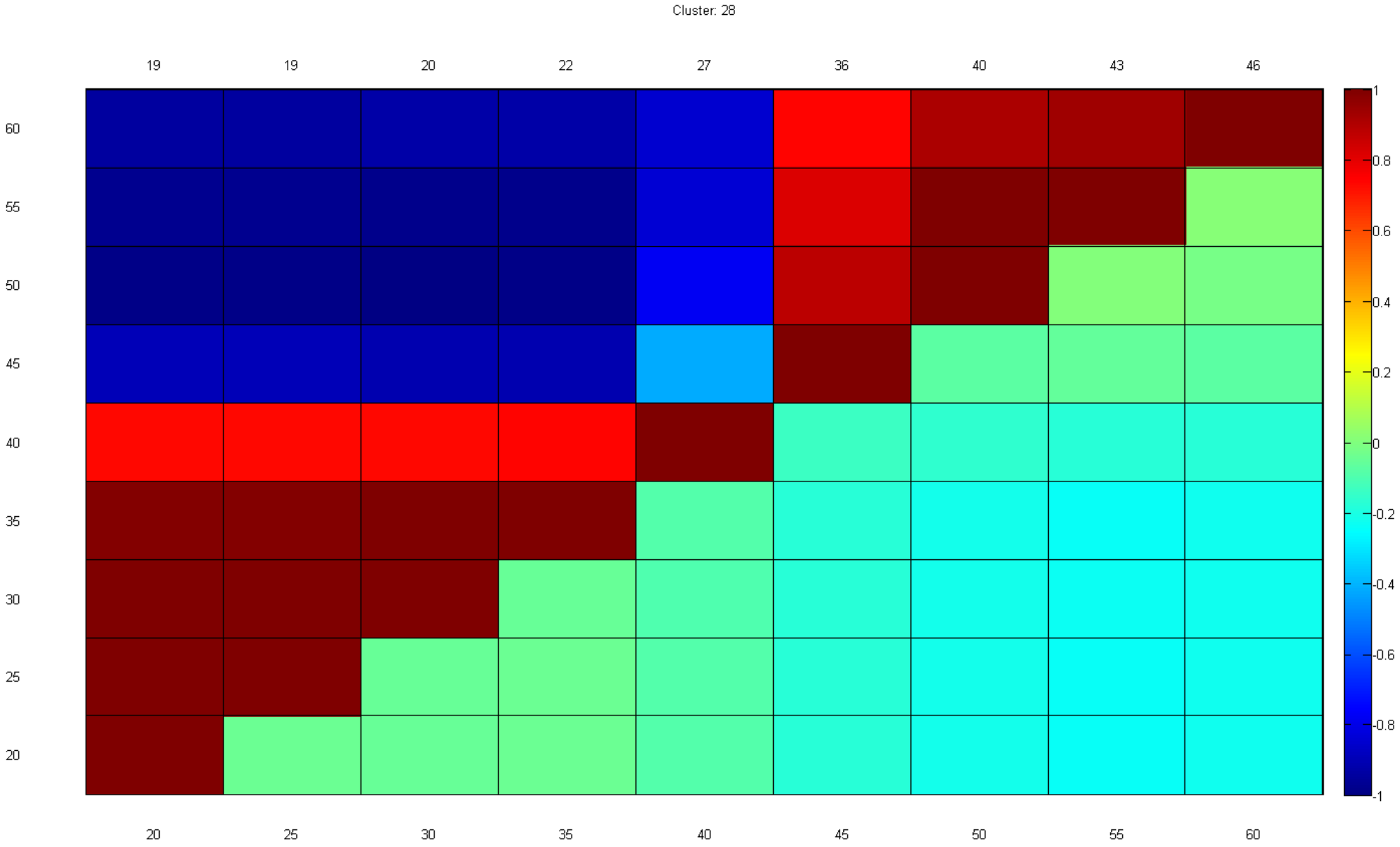


Figure 6: Różne wartości średniego artefaktu w zależności od progu kwantyzacji.


Neuron: 227 Recording ele: 16
Cluster: 50
44 44 46 46 46 46 46 46 46
Cluster: 46
44 44 44 44 44 44 44 44 44
Cluster: 40
33 34 37 38 38 38 38 38 38
Cluster: 38
35 35 36 36 36 36 36 36 36
Cluster: 28
24 25 26 26 26 26 26 26 26
Cluster: 23
18 20 21 21 21 21 21 21 21
Cluster: 8
5 5 6 6 6 6 6 6 6
Cluster: 3
27 33 41 45 47 47 47 48 48
Cluster: 0
37 41 42 47 47 47 48 48 48
Cluster: 2
24 28 30 35 40 45 47 47 48
Cluster: 2
8 13 16 24 34 46 47 48 48
Cluster: 0
11 28 43 47 47 48 48 48 48
Cluster: 0
16 20 25 27 34 38 38 38 38
Cluster: 0
8 9 13 18 31 37 42 43 46
Cluster: 0
21 28 32 37 42 43 46 47 48
Cluster: 0
15 19 26 33 40 42 47 48 48
Cluster: 0
5 8 14 22 31 37 41 44 45
Cluster: 0
6 7 10 12 23 31 35 37 44
Cluster: 0
5 10 14 23 31 38 41 46 46
Cluster: 0
5 9 21 28 39 42 46 47 48
Cluster: 0
8 15 22 25 32 38 44 48 48
Cluster: 0
13 25 37 42 47 47 48 48 48
Cluster: 0
10 22 33 41 48 48 48 48 48
Cluster: 0
23 34 41 44 47 47 48 48 48
60 55 50 45 40 35 30 25 20
20 25 30 35 40 45 50 55 60


Cluster: 28
19
19
20
22
27
36
40
43
46
60
55
50
45
40
35
30
25
20
20
25
30
35
40
45
50
55
60
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1