1. HDBSCAN SUMMARY: Scnp1: (Normalised np1 scaled by 2)

```
HDBSCAN clustering for 10000 objects.
Parameters: minPts = 40
The clustering contains 9 cluster(s) and 2712 noise points.

   0     1     2     3     4     5     6     7     8     9
2712    83   171    55    79    60    69  4459    45  2267
```

```
Cluster 1
 0  1  2  3  4  5  6  7  8  9
 0  0  1  0  0  0  0  0 82  0

Cluster 2
   0    1    2    3    4    5    6    7    8    9
   4    0    1    0    0    0    1    0  164    1

Cluster 3
 0  1  2  3  4  5  6  7  8  9
 1  5  1 13  4 21  4  3  0  3

Cluster 4
 0  1  2  3  4  5  6  7  8  9
 0  6  4 18 16 20  1 10  0  4

Cluster 5
 0  1  2  3  4  5  6  7  8  9
 1  5  2 14 11 16  1 10  0  0

Cluster 6
 0  1  2  3  4  5  6  7  8  9
 3  8  5 22  5 18  1  6  0  1

Cluster 7
   0     1     2     3     4     5     6     7     8     9
  39  1084   428   674   686   533    96   854     4    61

Cluster 8
 0  1  2  3  4  5  6  7  8  9
10  1  9  3  1  0  3  1  4 13

Cluster 9
   0    1    2    3    4    5    6    7    8    9
 707    0  236   16   51    8  500    3  184  562
```

```
Membership probabilities cluster 7:

Membership probability for 0
     Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
 0.001993 0.489099 0.840214 0.704072 0.978213 1.000000

Membership probability for 6
     Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
 0.008917 0.740805 0.986760 0.836332 1.000000 1.000000
```

```
Membership probability for 8
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
 0.9154  0.9776  0.9992  0.9784  1.0000  1.0000

Membership probability for 9
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
0.01061 0.55299 0.82275 0.73798 0.99087 1.00000
```

2. HDBSCAN SUMMARY: Scnp2: (Normalised np2 scaled by 3.25)

```
HDBSCAN clustering for 10000 objects.
Parameters: minPts = 35
The clustering contains 18 cluster(s) and 3552 noise points.

    0     1     2     3     4     5     6     7     8     9    10    11
 3552   113    41   103    63   528    77    40    84    79   103    42

   12    13    14    15    16    17    18
  123   103    56    48    37    84  4724
```

```
Cluster 0
   0    1    2    3    4    5    6    7    8    9
 507   37  385  201  185  251  623  104  632  627

Cluster 1
   0    1    2    3    4    5    6    7    8    9
   0    0    0    1    0    0    0    0  111    1

Cluster 2
 0  1  2  3  4  5  6  7  8  9
 4  0  0  0  0  0  0  0 37  0

Cluster 3
 0  1  2  3  4  5  6  7  8  9
 5  0  0  0  2  0  3  0 93  0

Cluster 4
 0  1  2  3  4  5  6  7  8  9
32  0  6  0  1  0 15  0  5  4

Cluster 5
   0    1    2    3    4    5    6    7    8    9
 249    0   38    1   10    3   98    0   34   95

Cluster 6
 0  1  2  3  4  5  6  7  8  9
46  0  2  0  1  0 14  0  3 11

Cluster 7
 0  1  2  3  4  5  6  7  8  9
 7  0  5  0  1  1 12  0  4 10

Cluster 8
 0  1  2  3  4  5  6  7  8  9
20  0 12  0  0  1 25  0  8 18
```
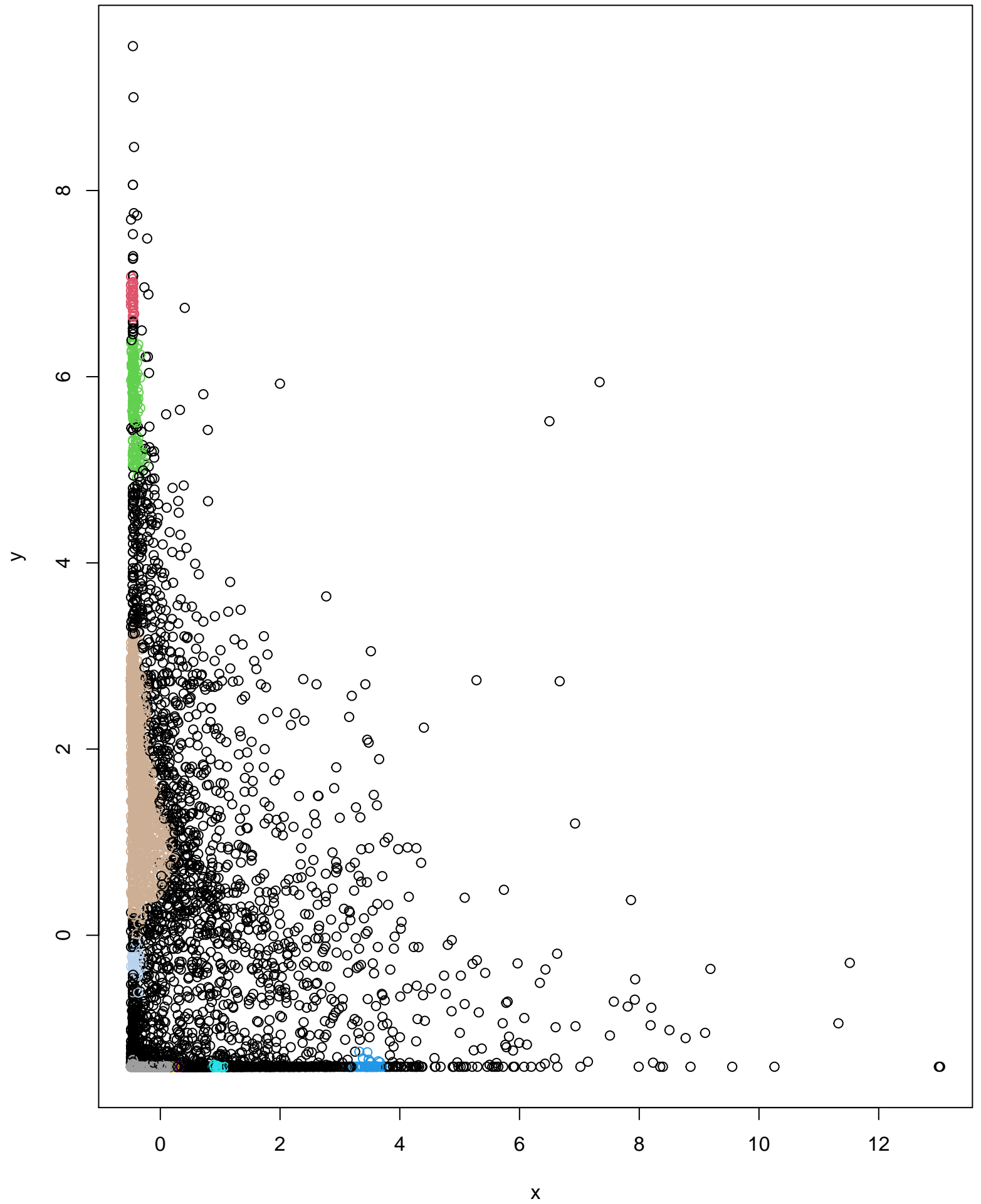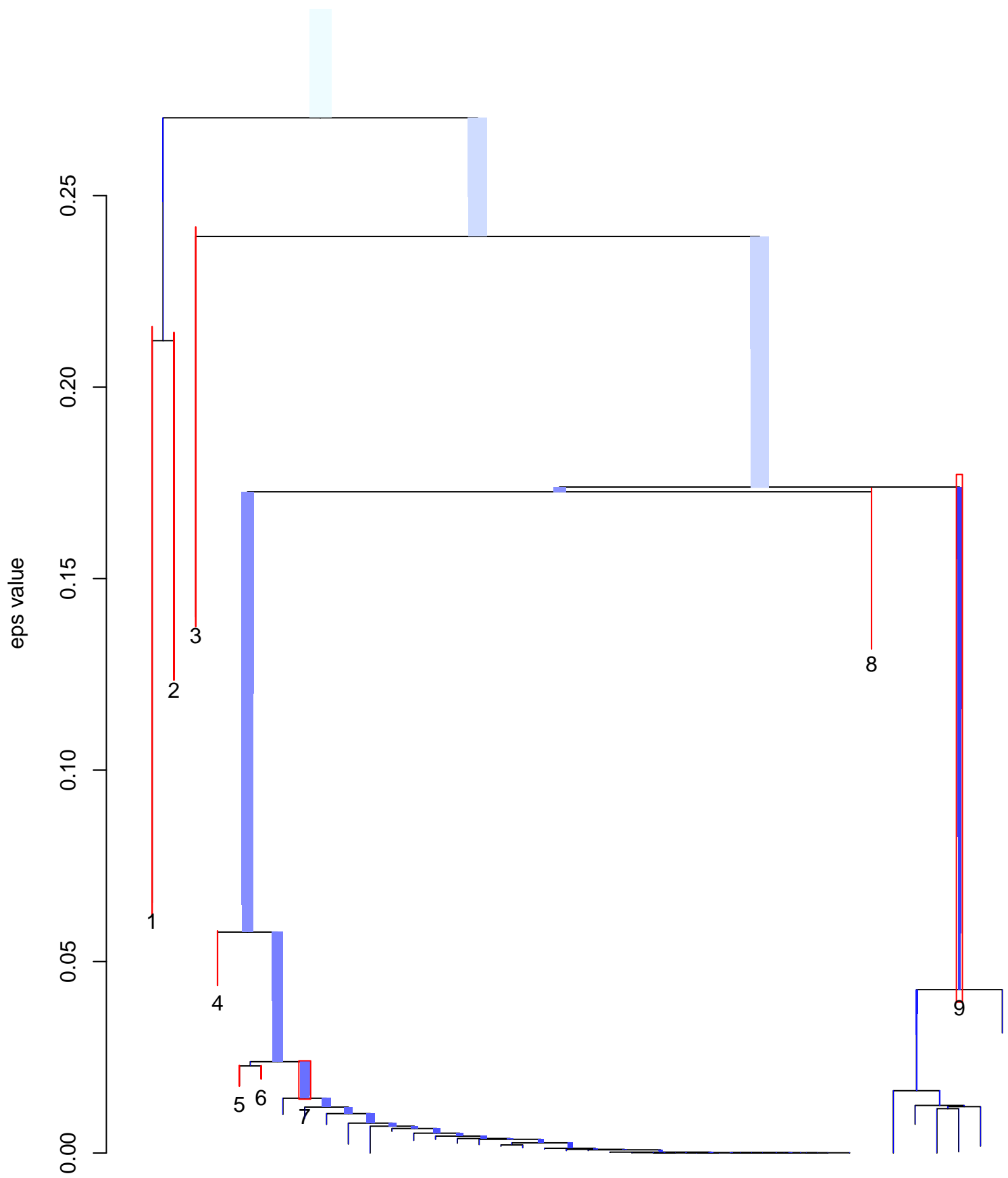
```
Cluster 9
 0  1  2  3  4  5  6  7  8  9
13  0 10  2  3  0 23  0  8 20

Cluster 10
 0  1  2  3  4  5  6  7  8  9
24  0 11  0  1  1 20  0 17 29

Cluster 11
 0  1  2  3  4  5  6  7  8  9
16  0  6  0  0  0  8  0  3  9

Cluster 12
 0  1  2  3  4  5  6  7  8  9
37  0  8  2  1  0 28  0 11 36

Cluster 13
 0  1  2  3  4  5  6  7  8  9
26  0 14  3  2  1 23  2  7 25

Cluster 14
 0  1  2  3  4  5  6  7  8  9
 8  0  7  7  3  4  8  3  2 14

Cluster 15
 0  1  2  3  4  5  6  7  8  9
 0  3  3  7  6 17  2  8  0  2

Cluster 16
 0  1  2  3  4  5  6  7  8  9
 4  1  5 12  0  3  4  2  1  5

Cluster 17
 0  1  2  3  4  5  6  7  8  9
 0  5 10 13 15 19  4 16  0  2

Cluster 18
    0     1     2     3     4     5     6     7     8     9
   36  1113   472   752   730   565    82   908     5    61
```

Membership probability: Cluster 18

```
Membership probability for 0
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
 0.1749  0.7193  0.9590  0.8277  0.9951  1.0000

Membership probability for 6
     Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
0.007342 0.832191 0.999814 0.848753 1.000000 1.000000

Membership probability for 8
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
 0.8441  0.9459  0.9939  0.9565  0.9984  0.9999

Membership probability for 9
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
0.01443 0.64223 0.90071 0.73668 0.99533 1.00000
```

Np1 plots

HDBSCAN*   Np1 Plots

eps value

Np2 plots

HDBSCAN*   Np2 plots