TASC 2.4 Streamlit GUI

Show Example Input

Path to pickle files

D:\jeries\output\TASC_pickles\

Raw data pickle filename

rawdata.pickle

Raw data graph pickle filename

rawdatagraph.pickle

Morphological Features

Area × | Ellip_Ax_B_X × | Ellip_Ax_B_Y × | Ellip_Ax_C_X × | Ellip_Ax_C_Y × | EllipsoidAxisLen… × | EllipsoidAxisLen… × | Ellipticity_ob

BPW Features

Velocity_Full_Wi… × | Velocity_Time_o… × | Velocity_Maxim… × | Velocity_Ending… × | Velocity_Ending… × | Velocity_Startin… ×

Sampling

If you want to sample cells to balance well sizes, check this box.

- `expList` : Indices of wells to sample (comma-separated).
- `CellSample` : Sampling divisor (e.g., 2 for half, 3 for a third).

☐ Sample cells?

expList (indices to sample, comma-separated)

16,17,18,19,20,21,22,23

CellSample (sampling divisor)

2

Experiments to analyze (without sampling)

Indices for the wells you wish to analyze *without* sampling.

You can use a comma-separated list (e.g., `0,1,2,3,4,5,6,7,8,9,10,11`) or a Python range (e.g., `range(0,12)`).

expListT (indices to analyze, comma-separated or range)

0,1,2,3,4,5,6,7,8,9,10,11

Experiment title and number of clusters

Choose a unique title for this run. All output files will use this as a prefix.

Set the number of clusters for k-means analysis.

Experiment title

jeries_test

Number of clusters

3

Feature selection

Check to analyze only kinetics (BPW) or only morphology.

If you wish to run on the entire feature list, leave both unchecked.

- [ ] Analyze only kinetics (MorphoOut)
- [ ] Analyze only morphology (MorphoIn)

Treatments Combination

Specify how your treatments can be combined in your experiments.

- Each treatment name should be 4 characters long.
- Treatments that **are not combined with each other** should be placed in the **same list**.
- Treatments that **can be combined** with others should be in separate lists.

Example:
If your treatments are `HGF2`, `HGF7`, `DOX1`, `PHA4`, `PHA3`:

- If `HGF2`, `HGF7`, and `DOX1` are not combined with each other, put them in the same list: `['HGF2', 'HGF7', 'DOX1']`
- If `PHA4` and `PHA3` are not combined with the others, put them in another list: `['PHA4', 'PHA3']`
- The format is: `[['HGF2', 'HGF7', 'DOX1'], ['PHA4', 'PHA3']]`

You will **not** find a well named `'HGF2HGF7'` or `'HGF2DOX1'`, but you **may** find `'HGF7PHA4'`.

Note:
If you have a control well (e.g., `'CON'`), do **not** include it in any list.

Treatments combination (e.g. [[NNIR],[METR],[GABY]])

```
[["NNIR"],["METR"],["GABY"]]
```

Single/multiple treatment/control/cell lines

- `singleTREAT`: True if only one treatment.
- `singleCONTROL`: True if only one control.
- `multipleCL`: True if multiple cell lines.

- [ ] Single treatment?
- [x] Single control?
- [ ] Multiple cell lines?

Graph Properties

These settings control the appearance and layout of your output figures. You may need to adjust them depending on your experiment and preferences.

- **nrows, ncols**:
  Set the number of rows and columns in your experiment figures. For example, if you have 3 cell lines and 8 treatments, use `nrows=3` and `ncols=8`.
  Default: `nrows=0`, `ncols=1`

- **nColor, nShades**:
  Define the number of colors and shades used in the experiment figures.
  Default: `nColor=0`, `nShades=0`

- **nColorTreat, nShadesTreat**:
  Number of colors and shades for treatment-specific figures. Usually, you can leave these at their default values.
  Default: `nColorTreat=0`, `nShadesTreat=0`

- **nColorLay, nShadesLay**:
  Number of colors and shades for y-position (layer) figures.
  Example: `nColorLay=3`, `nShadesLay=3`

- **figsizeEXP, figsizeTREATS, figsizeCL**:
  Set the figure size for experiment, treatment, and cell line figures as `(width, height)` tuples.
  Example:

- `figsizeEXP = (40, 15)`
- `figsizeTREATS = (30, 15)`
- `figsizeCL = (15, 5)`

Tip: You may need to revisit and adjust these settings to get the best visualization for your data.

nrows (rows in experiment figures)

```
1
```

ncols (columns in experiment figures)

```
12
```

nColor (number of colors)

```
12
```

nShades (number of shades)

```
2
```

nColorTreat

```
0
```

nShadesTreat

```
0
```

nColorLay

```
3
```

nShadesLay

```
3
```

figsizeEXP (tuple)

```
(25,5)
```

figsizeTREATS (tuple)

```
(15,5)
```

figsizeCL (tuple)

```
(15,15)
```

Chi-Squared Test Variables

- **CON**:
  List of control names (comma-separated).
  Example: `CON = ['CON']` or `CON = ['CON1', 'CON2']`
- **CL**:
  List of cell lines (comma-separated).
  Example: `CL = ['BT54', 'MDA2', 'MCF7']` or CL = ['293T']
- **wellCON**:
  List of well names for controls (one per line, without the 'NNN0' part).
  Example:

```
HA033080917CHR1C02BT54CON0WH00
HA033080917CHR1D02MDA2CON0WH00
```

```
HA033080917CHR1F02MCF7CON0WH00
```

- **controls**:
  List of specific experiment names to use as controls (one per line).
  Example:

  ```
  BT54HGF7
  ```

  Leave blank if not used.

CON (control names, comma-separated)

NOCO

CL (cell lines, comma-separated)

293T

wellCON (well names, one per line)

```
'AM001100425CHR2B02293TNNIRNOCOWH00'
'AM001100425CHR2B03293TNNIRNOCOWH00'
'AM001100425CHR2B04293TNNIRNOCOWH00'
'AM001100425CHR2C02293TMETRNNIRNOCOWH00'
```

controls (leave blank for none)

Run Analysis Stop Analysis

Analysis is running...

Experiment Names in Order (Unique)

These are the unique experiment names found in your data:

value
AM001100425CHR2B02293TNNIRNOCONNN0NNN0NNN0WH00
AM001100425CHR2B03293TNNIRNOCONNN0NNN0NNN0WH00
AM001100425CHR2B04293TNNIRNOCONNN0NNN0NNN0WH00
AM001100425CHR2C02293TMETRNNIRNOCONNN0NNN0WH00
AM001100425CHR2C03293TMETRNNIRNOCONNN0NNN0WH00
AM001100425CHR2C04293TMETRNNIRNOCONNN0NNN0WH00
AM001100425CHR2D02293TGABYNNIRNOCONNN0NNN0WH00
AM001100425CHR2D03293TGABYNNIRNOCONNN0NNN0WH00
AM001100425CHR2D04293TGABYNNIRNOCONNN0NNN0WH00
AM001100425CHR2E02293TNNIRMETRGABYNOCONNN0WH00

Number of Cells per Experiment

Index #	Experiment	Number of Cells
0	AM001100425CHR2B02293TNNIRNOCONNN0NNN0NNN0WH00	9,228
1	AM001100425CHR2B03293TNNIRNOCONNN0NNN0NNN0WH00	16,861
2	AM001100425CHR2B04293TNNIRNOCONNN0NNN0NNN0WH00	23,874
3	AM001100425CHR2C02293TMETRNNIRNOCONNN0NNN0WH00	5,791
4	AM001100425CHR2C03293TMETRNNIRNOCONNN0NNN0WH00	5,362
5	AM001100425CHR2C04293TMETRNNIRNOCONNN0NNN0WH00	5,362
6	AM001100425CHR2D02293TGABYNNIRNOCONNN0NNN0WH00	5,672
7	AM001100425CHR2D03293TGABYNNIRNOCONNN0NNN0WH00	8,852
8	AM001100425CHR2D04293TGABYNNIRNOCONNN0NNN0WH00	5,446
9	AM001100425CHR2E02293TNNIRMETRGABYNOCONNN0WH00	8,205

Sampling Cells

If sampling is enabled, only a subset of cells from selected wells will be used. For example, CellSample=2 means every second cell track is sampled.

Sampling is disabled. All cells from selected wells will be used.

Experiments to Analyze

The following experiments will be analyzed (excluding sampled experiments if sampling is enabled):

expListT:

```
[
  0 : 0
  1 : 1
  2 : 2
  3 : 3
  4 : 4
  5 : 5
  6 : 6
  7 : 7
  8 : 8
  9 : 9
  10 : 10
  11 : 11
]
```

The experiment(s) you chose:

AM001100425CHR2B02293TNNIRNOCOWH00

AM001100425CHR2B03293TNNIRNOCOWH00

AM001100425CHR2B04293TNNIRNOCOWH00

AM001100425CHR2C02293TMETRNNIRNOCOWH00

AM001100425CHR2C03293TMETRNNIRNOCOWH00

AM001100425CHR2C04293TMETRNNIRNOCOWH00

AM001100425CHR2D02293TGABYNNIRNOCOWH00

AM001100425CHR2D03293TGABYNNIRNOCOWH00

AM001100425CHR2D04293TGABYNNIRNOCOWH00

AM001100425CHR2E02293TNNIRMETRGABYNOCOWH00

AM001100425CHR2E03293TNNIRMETRGABYNOCOWH00

AM001100425CHR2E04293TNNIRMETRGABYNOCOWH00

The cell line(s):

293T

293T

293T

293T

293T

293T

293T

293T

293T

293T

293T

293T

The treatments are:

Number of features: 49

The Features are:

1. Area
2. Acceleration
3. Acceleration_OLD
4. Acceleration_X
5. Acceleration_Y
6. Coll
7. Coll_CUBE
8. Confinement_Ratio
9. Directional_Change
10. Overall_Displacement
11. Displacement_From_Last_Id
12. Displacement2

13. Ellip_Ax_B_X
14. Ellip_Ax_B_Y
15. Ellip_Ax_C_X
16. Ellip_Ax_C_Y
17. EllipsoidAxisLengthB
18. EllipsoidAxisLengthC
19. Ellipticity_oblate
20. Ellipticity_prolate
21. Instantaneous_Angle
22. Instantaneous_Speed
23. Instantaneous_Speed_OLD
24. Linearity_of_Forward_Progression
25. Mean_Curvilinear_Speed
26. Mean_Straight_Line_Speed
27. Current_MSD_1
28. Final_MSD_1
29. MSD_Linearity_R2_Score
30. MSD_Brownian_Motion_BIC_Score
31. MSD_Brownian_D
32. MSD_Directed_Motion_BIC_Score
33. MSD_Directed_D
34. MSD_Directed_v2
35. Sphericity
36. Total_Track_Displacement
37. Track_Displacement_X
38. Track_Displacement_Y
39. Velocity_X
40. Velocity_Y
41. Eccentricity
42. Min_Distance
43. Velocity_Full_Width_Half_Maximum
44. Velocity_Time_of_Maximum_Height
45. Velocity_Maximum_Height

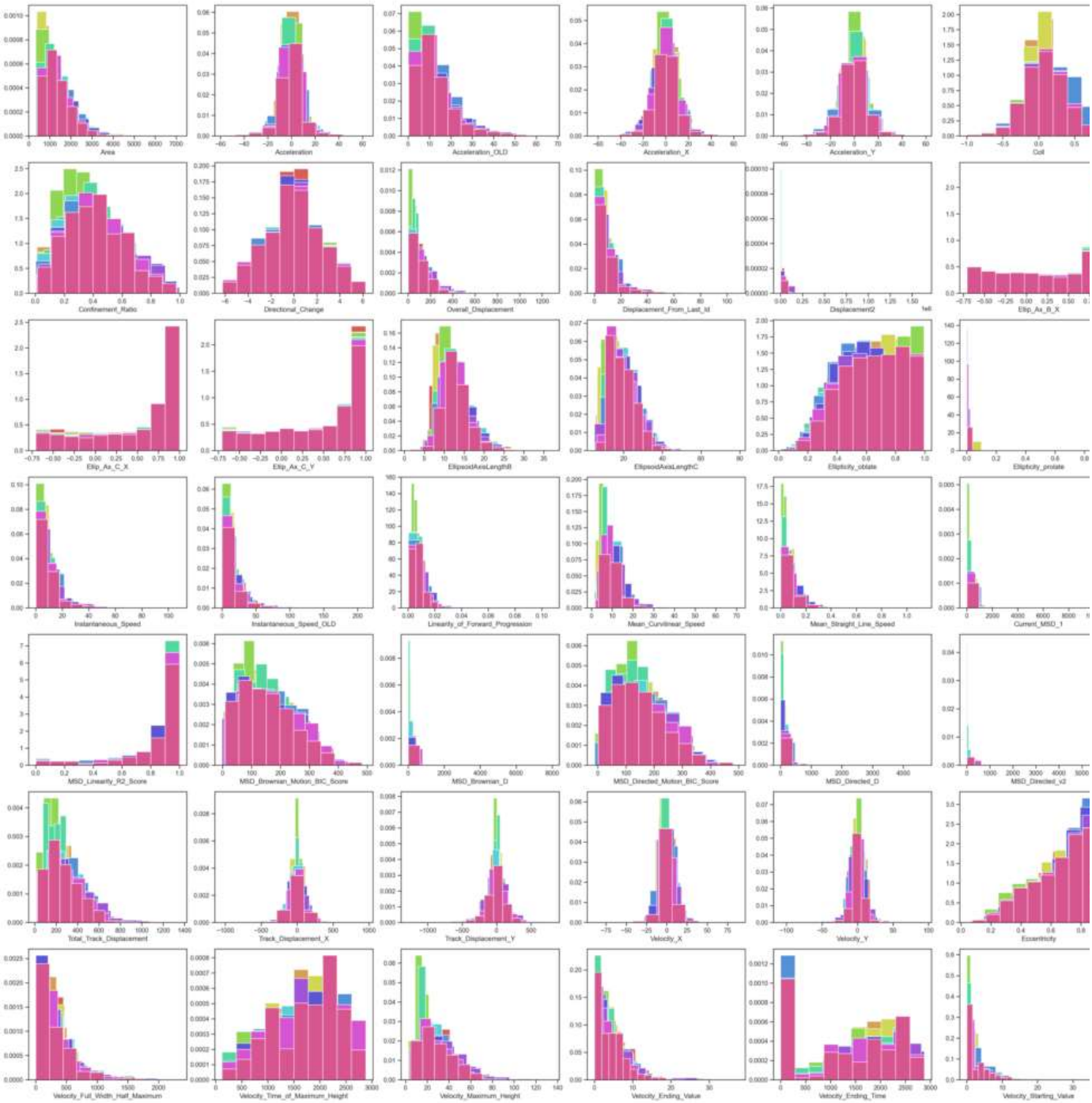
46. Velocity_Ending_Value
47. Velocity_Ending_Time
48. Velocity_Starting_Value
49. Velocity_Starting_Time

Features Used for Analysis

0
Area
Acceleration
Acceleration_OLD
Acceleration_X
Acceleration_Y
Coll
Coll_CUBE
Confinement_Ratio
Directional_Change
Overall_Displacement

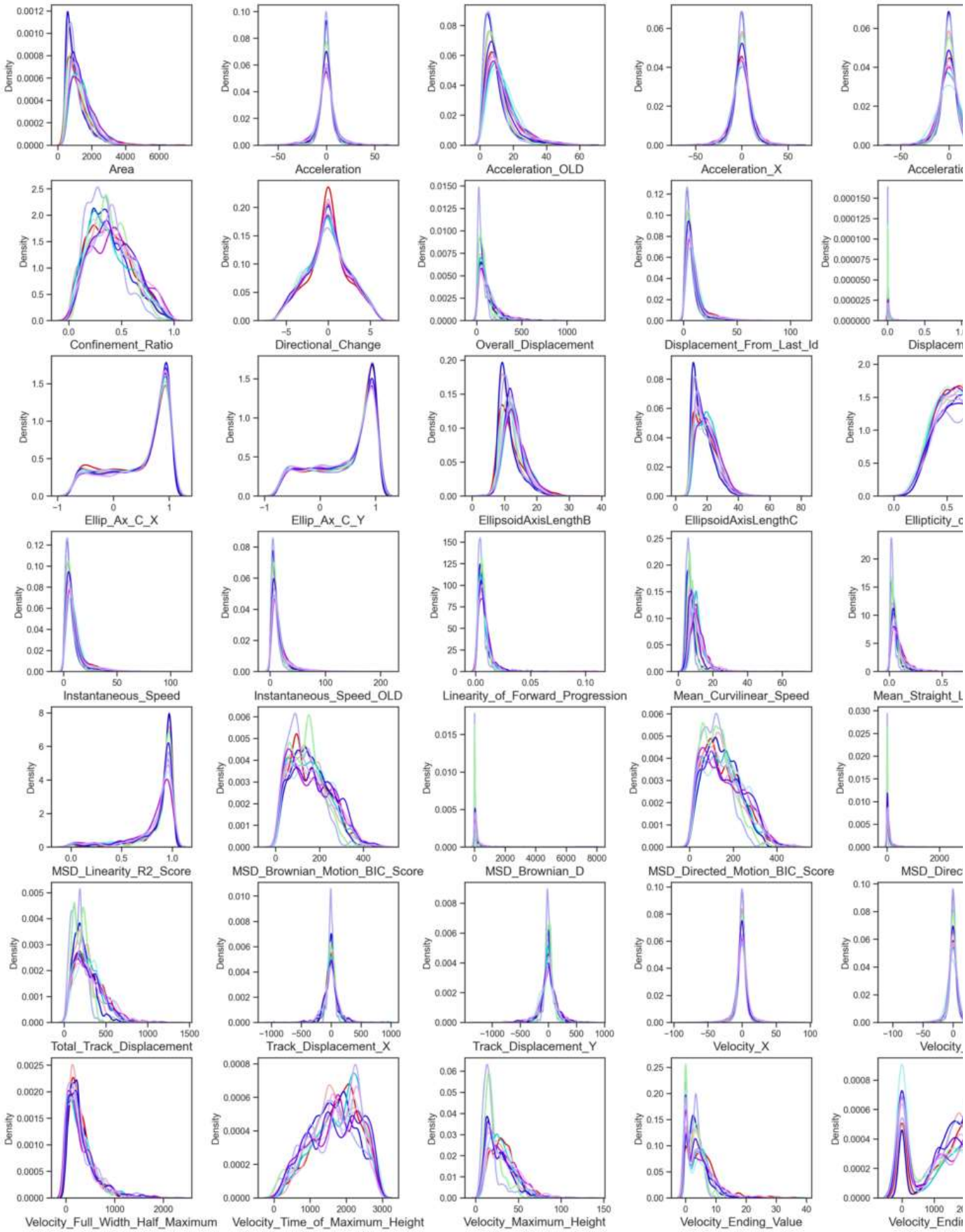
Histogram of Features

$Figure\ 1$



KDE Histogram of Features

Figure 2


Density
Area
Acceleration
Acceleration_OLD
Acceleration_X
Confinement_Ratio
Directional_Change
Overall_Displacement
Displacement_From_Last_Id
Ellip_Ax_C_X
Ellip_Ax_C_Y
EllipsoidAxisLengthB
EllipsoidAxisLengthC
Instantaneous_Speed
Instantaneous_Speed_OLD
Linearity_of_Forward_Progression
Mean_Curvilinear_Speed
MSD_Linearity_R2_Score
MSD_Brownian_Motion_BIC_Score
MSD_Brownian_D
MSD_Directed_Motion_BIC_Score
Total_Track_Displacement
Track_Displacement_X
Track_Displacement_Y
Velocity_X
Velocity_Full_Width_Half_Maximum
Velocity_Time_of_Maximum_Height
Velocity_Maximum_Height
Velocity_Ending_Value

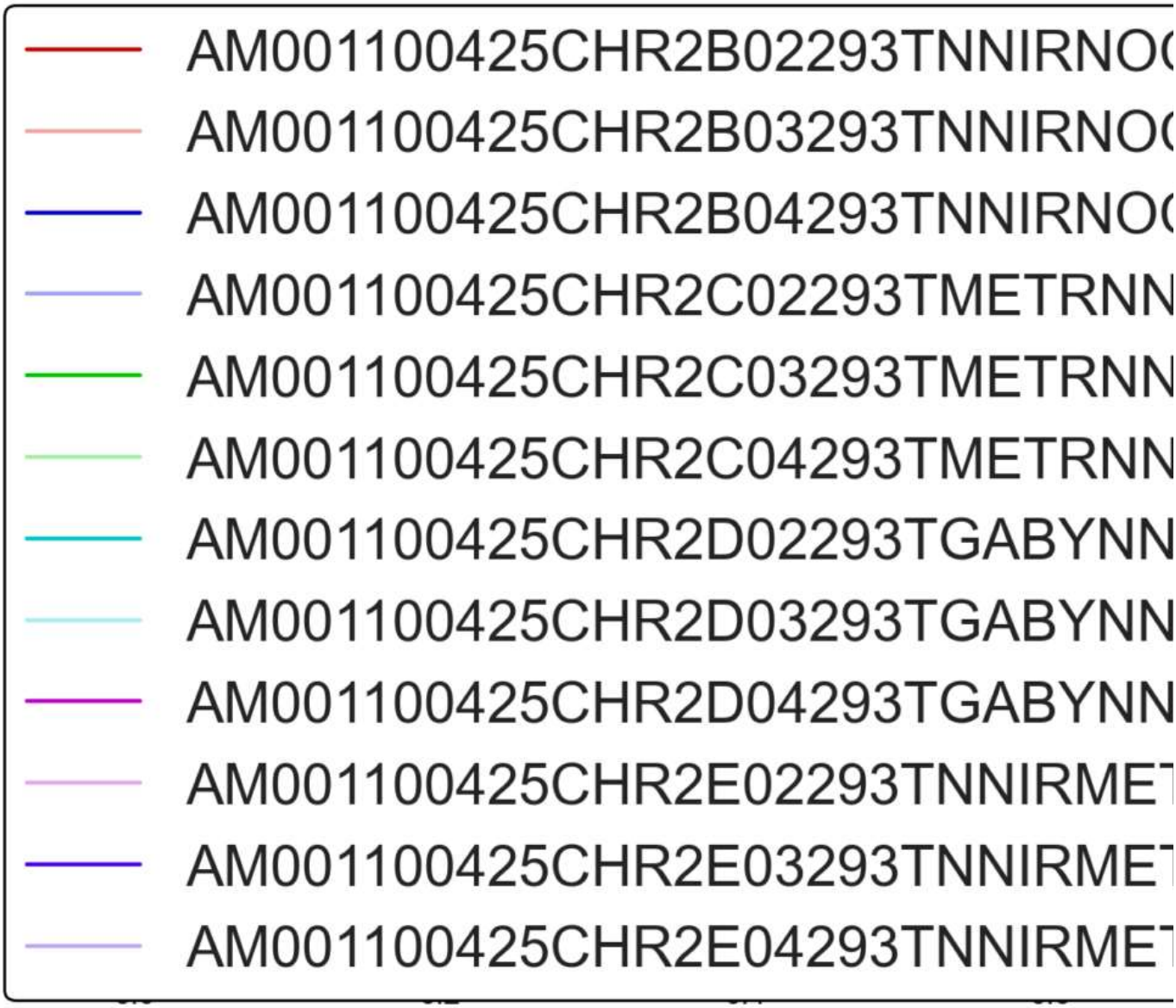

AM001100425CHR2B02293TNNIRNO(
AM001100425CHR2B03293TNNIRNO(
AM001100425CHR2B04293TNNIRNO(
AM001100425CHR2C02293TMETRNN
AM001100425CHR2C03293TMETRNN
AM001100425CHR2C04293TMETRNN
AM001100425CHR2D02293TGABYNN
AM001100425CHR2D03293TGABYNN
AM001100425CHR2D04293TGABYNN
AM001100425CHR2E02293TNNIRME
AM001100425CHR2E03293TNNIRME
AM001100425CHR2E04293TNNIRME

Figure 3

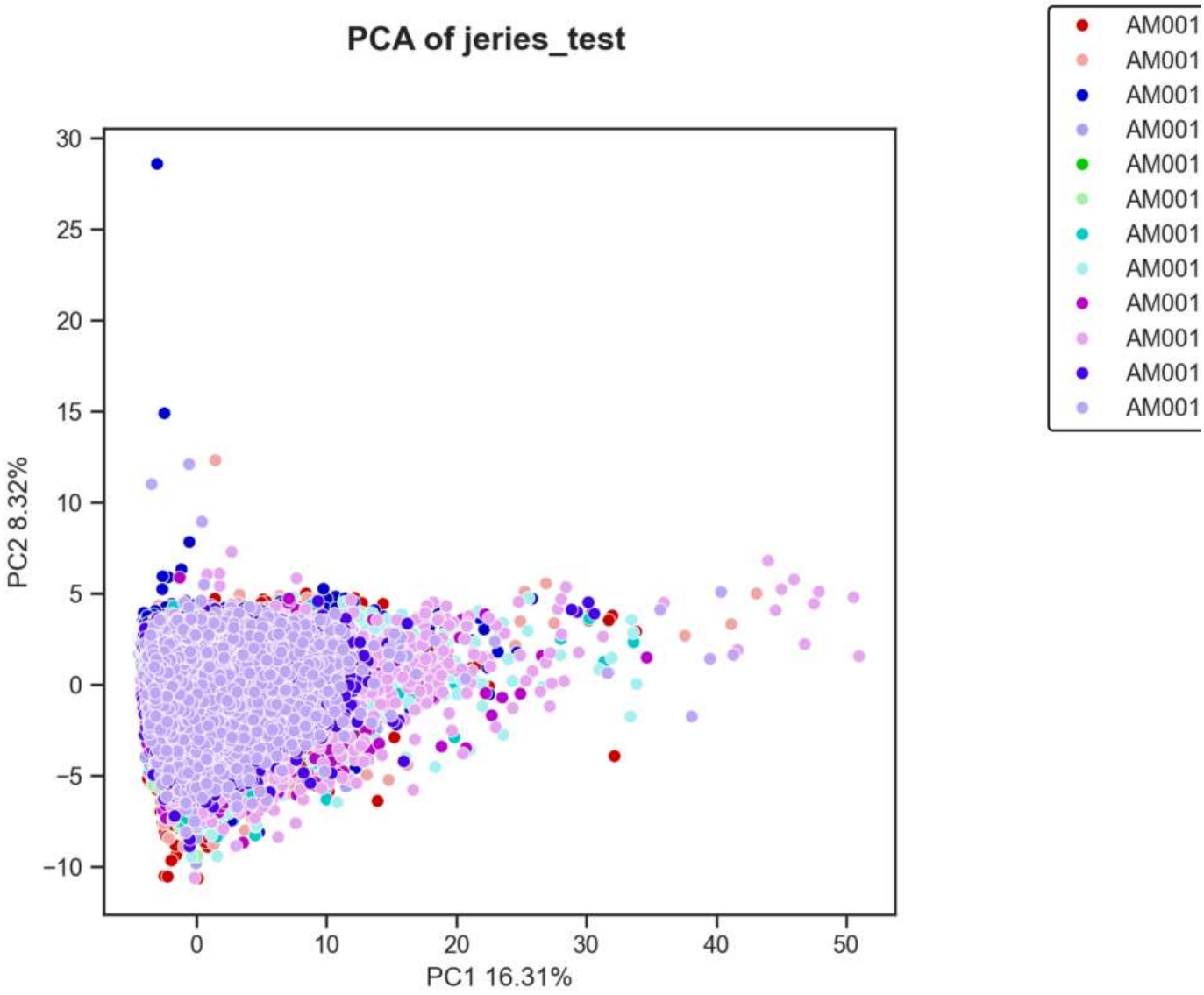
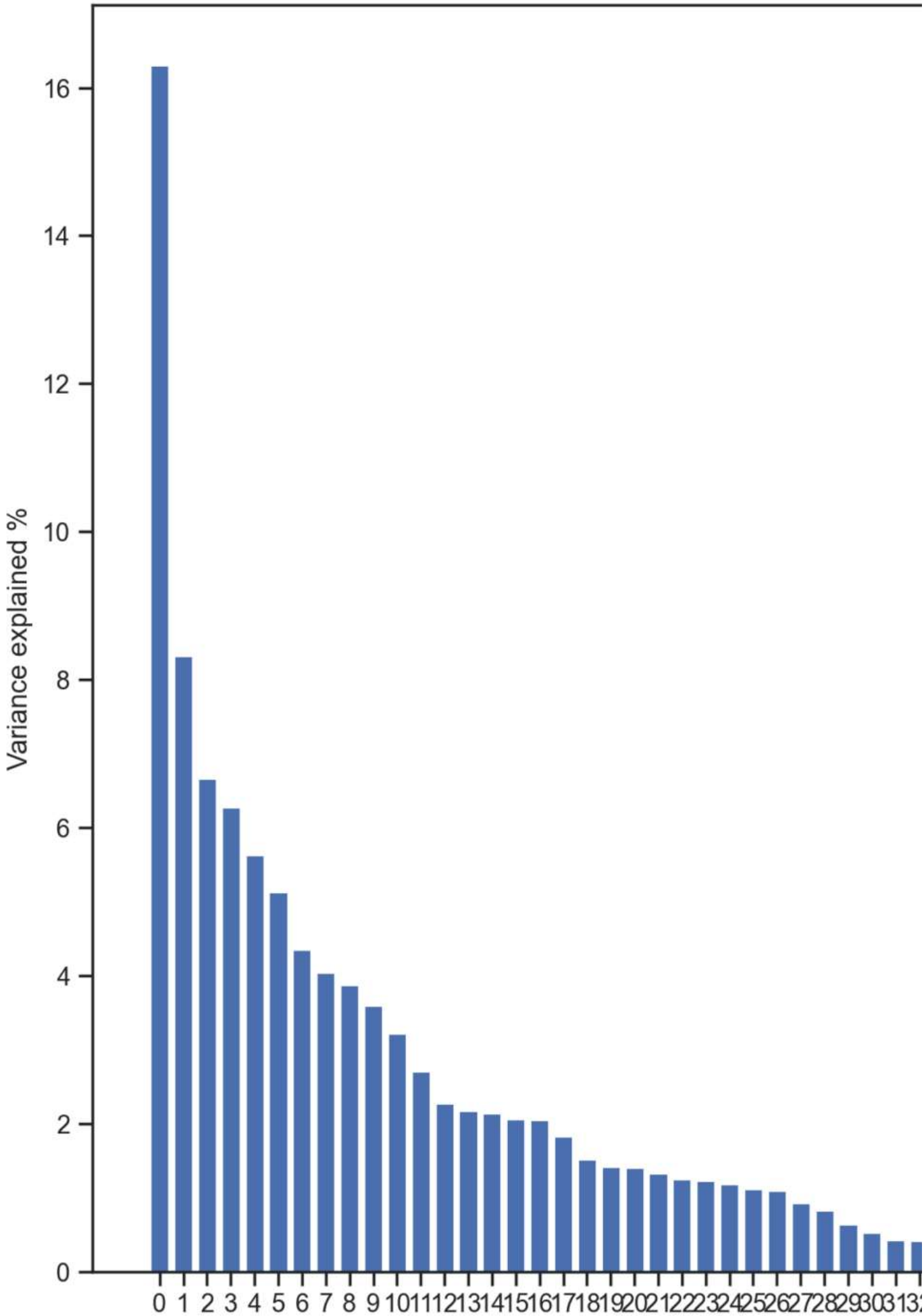


Figure 4

There are 1 significant components


Variance explained %
0
2
4
6
8
10
12
14
16
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

PCA features

Figure 5

K-means clustering

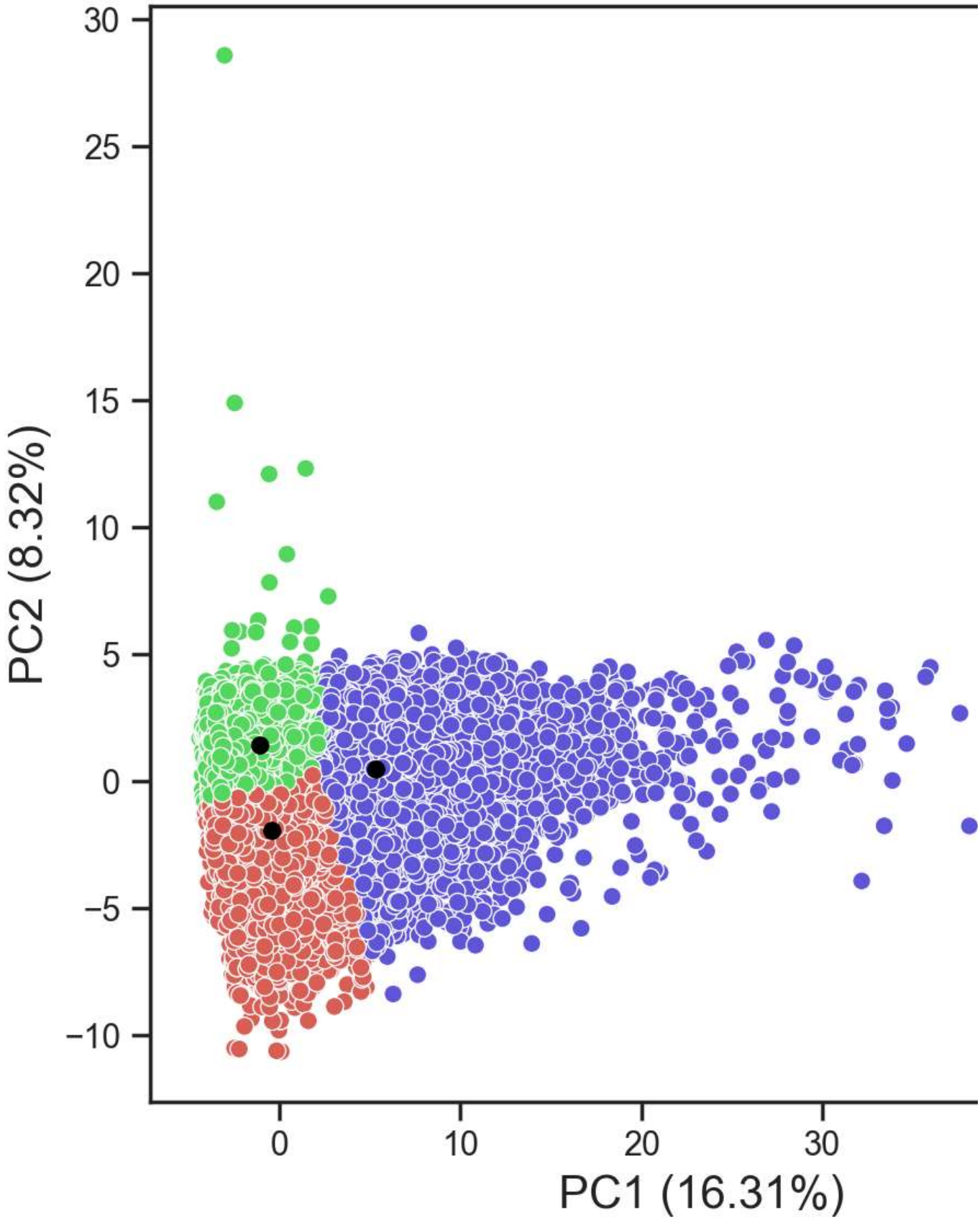


Figure 6

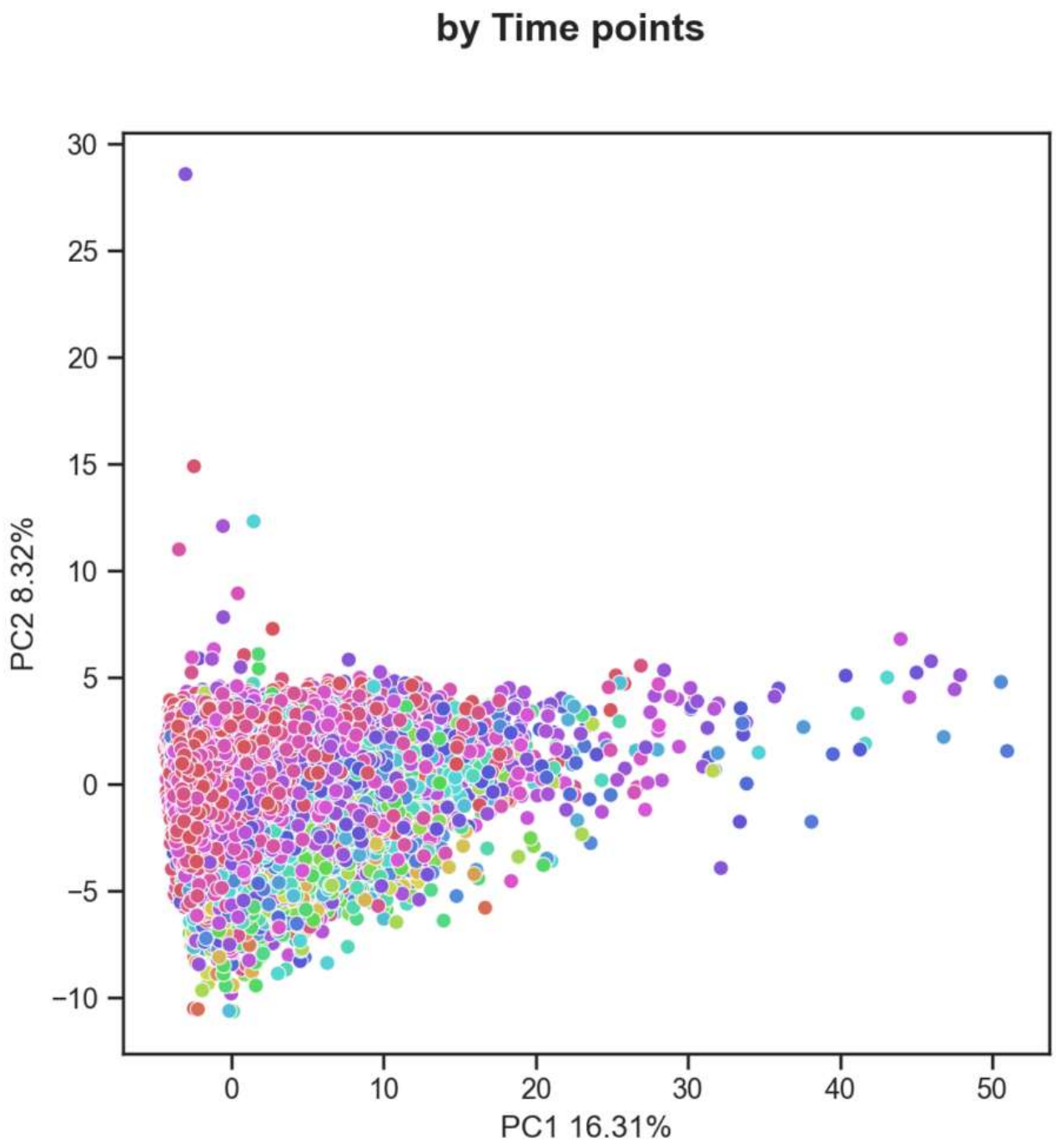


Figure 7

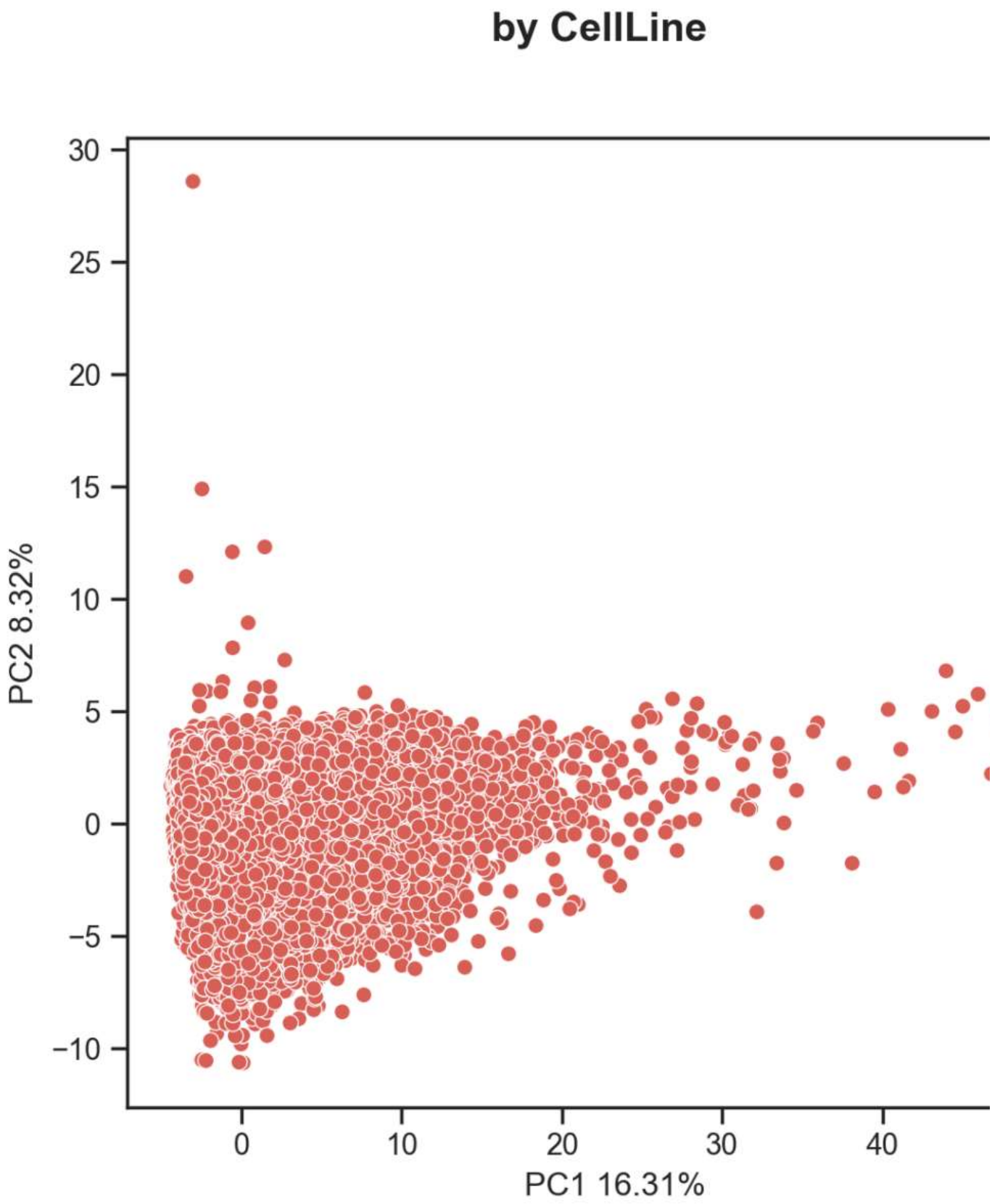


Figure 8

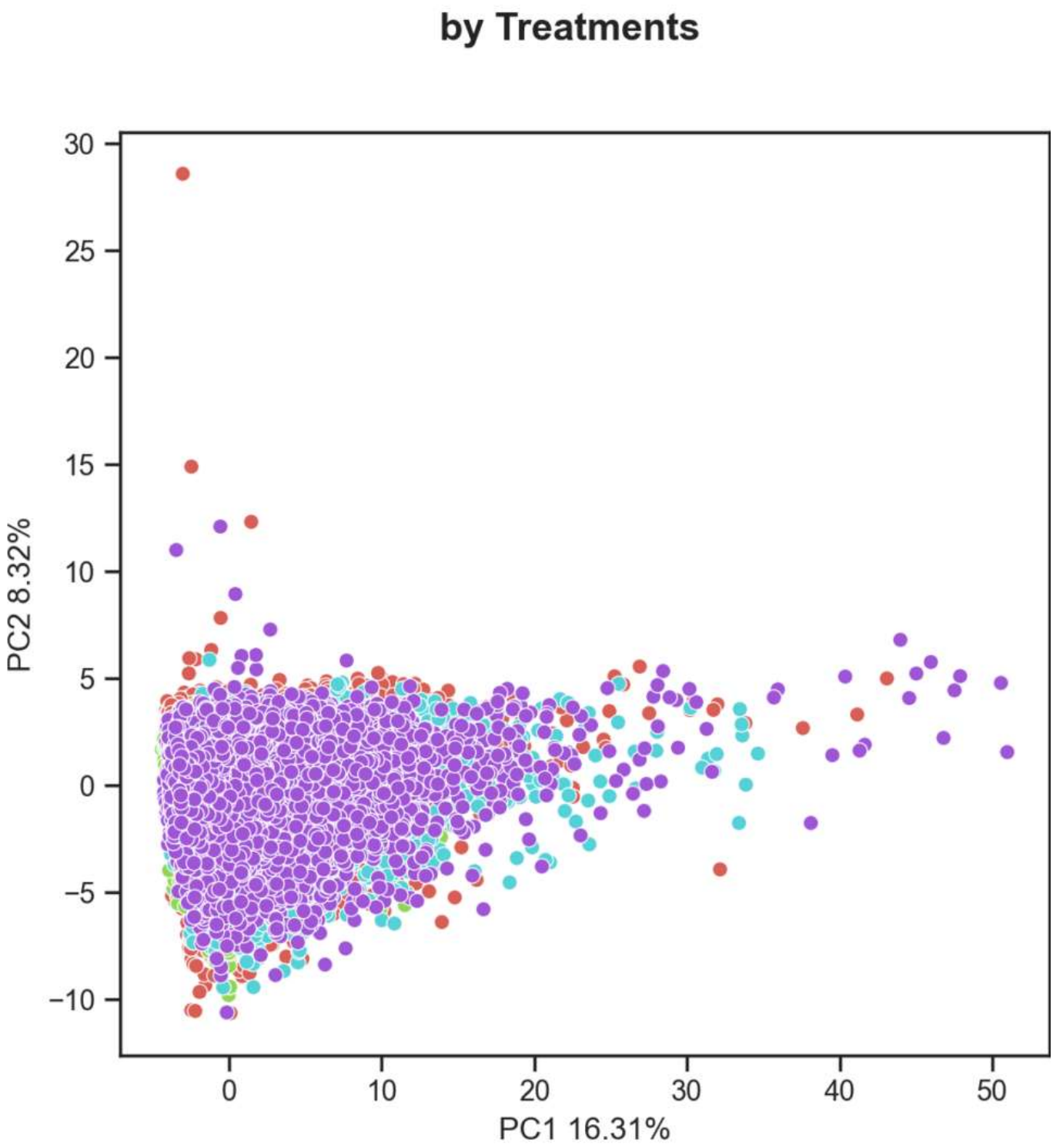

by Treatments
30
25
20
15
10
5
0
−5
−10
PC2 8.32%
0
10
20
30
40
50
PC1 16.31%

Figure 9

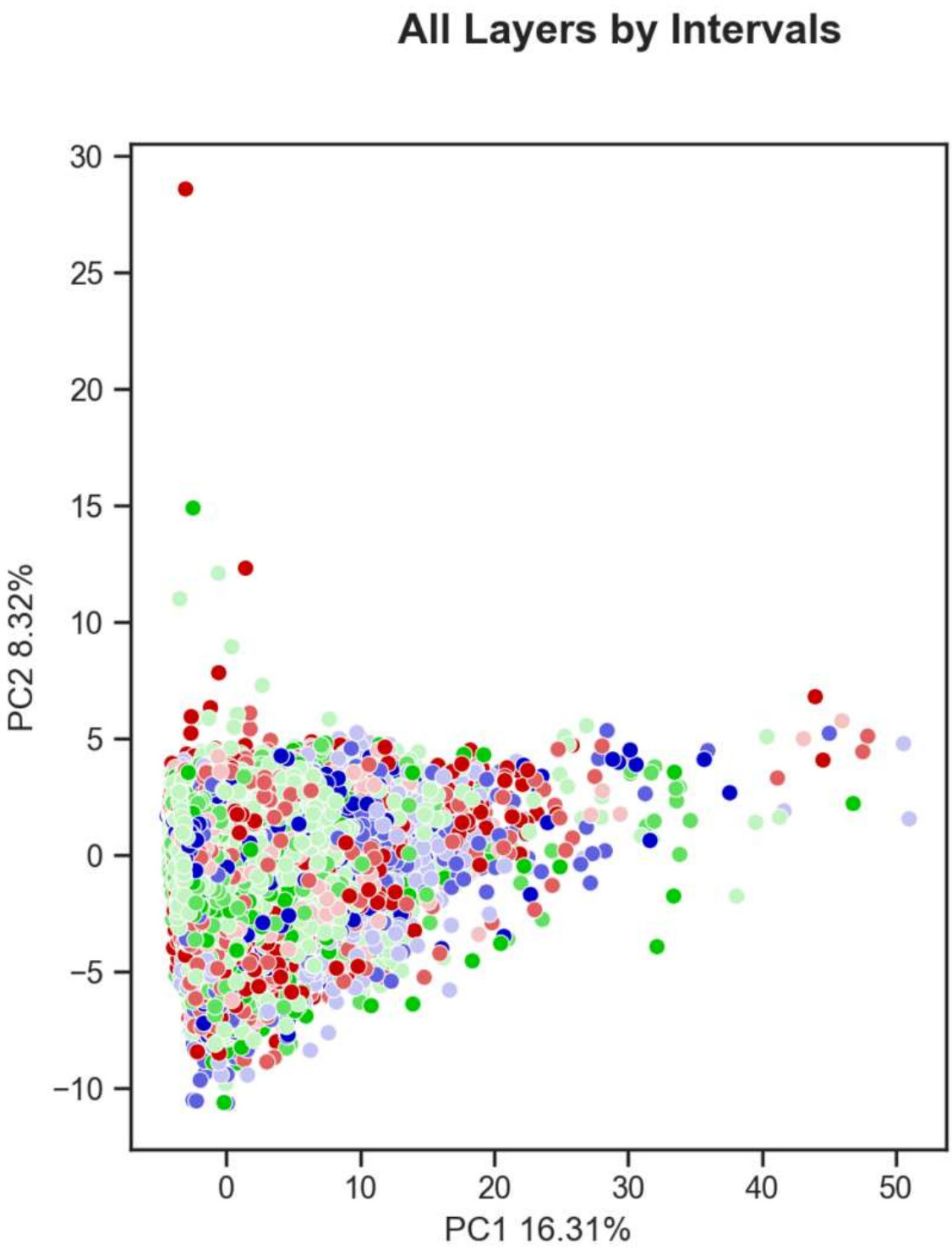

All Layers by Intervals
30
25
20
15
10
5
0
−5
−10
PC2 8.32%
0
10
20
30
40
50
PC1 16.31%

Figure 10

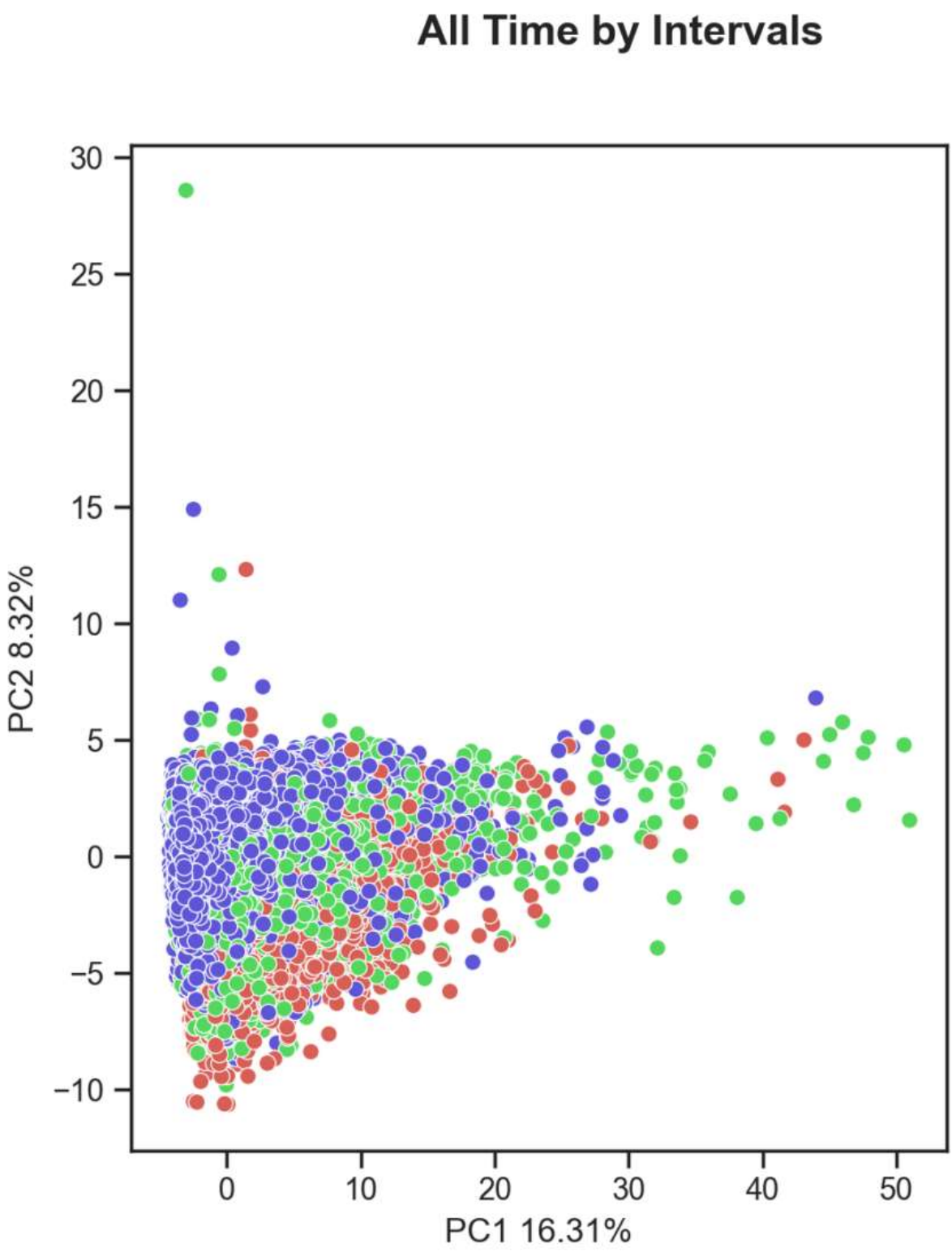
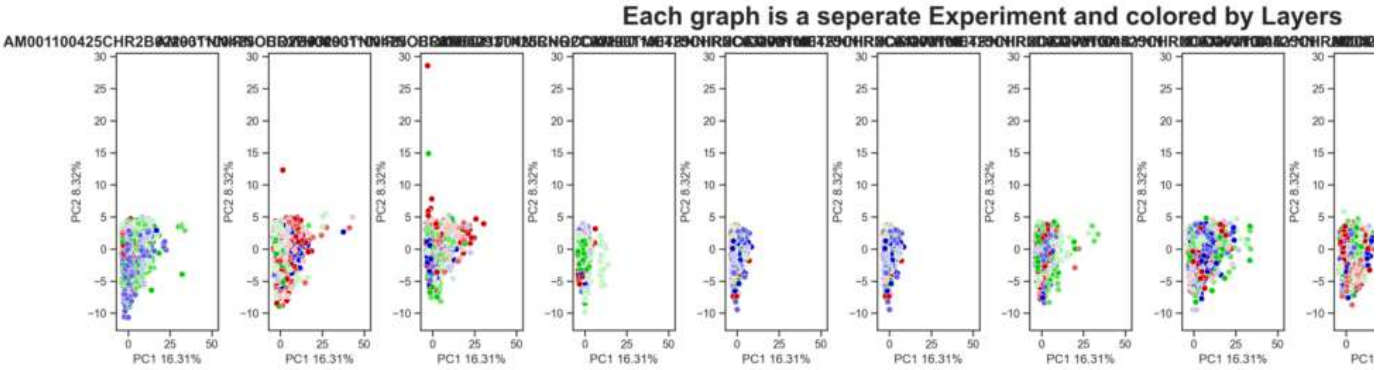
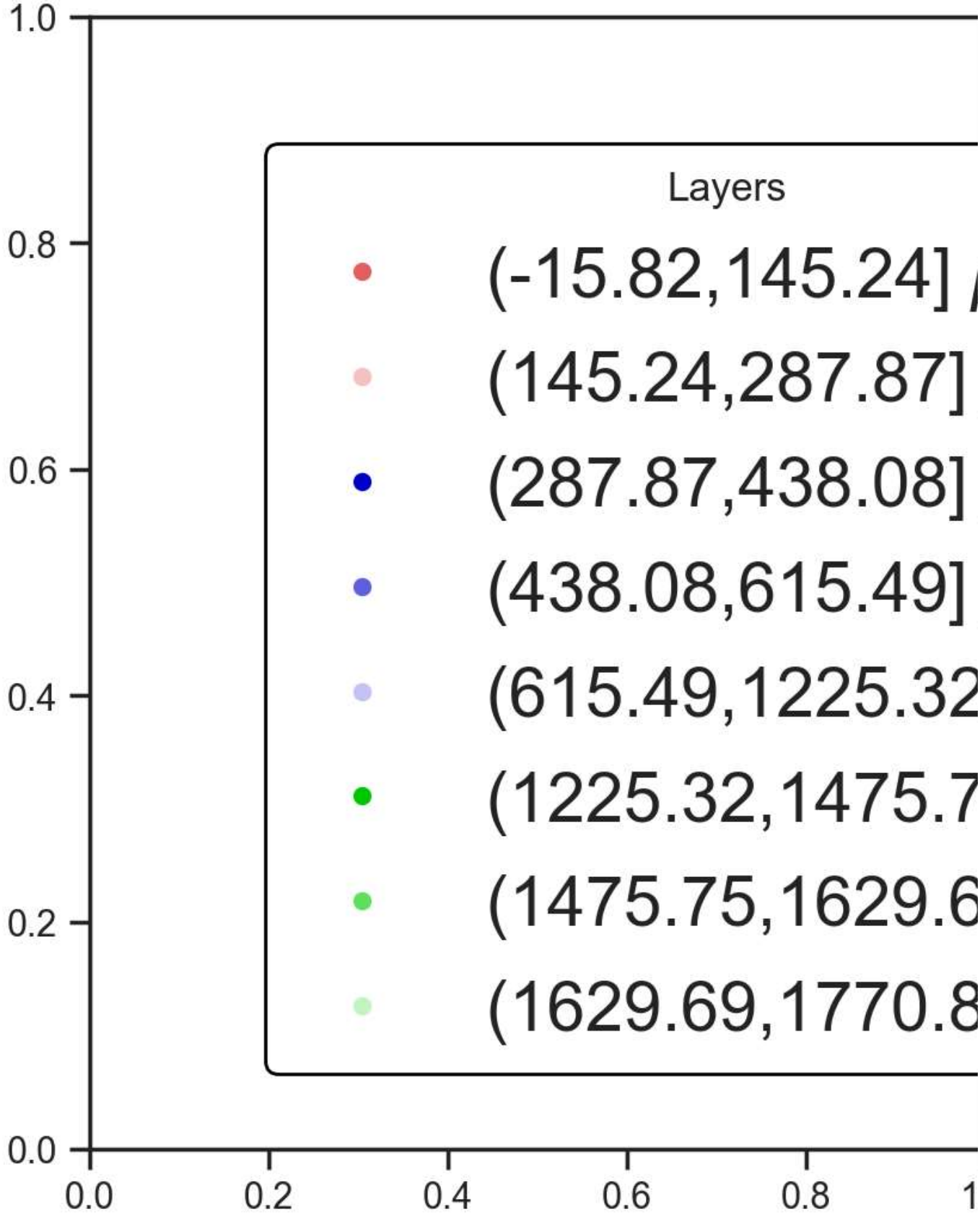
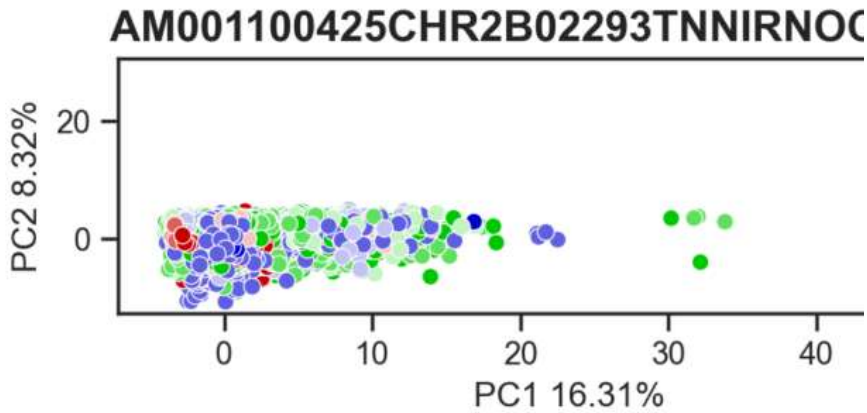

All Time by Intervals
30
25
20
15
10
5
0
−5
−10
PC2 8.32%
0
10
20
30
40
50
PC1 16.31%

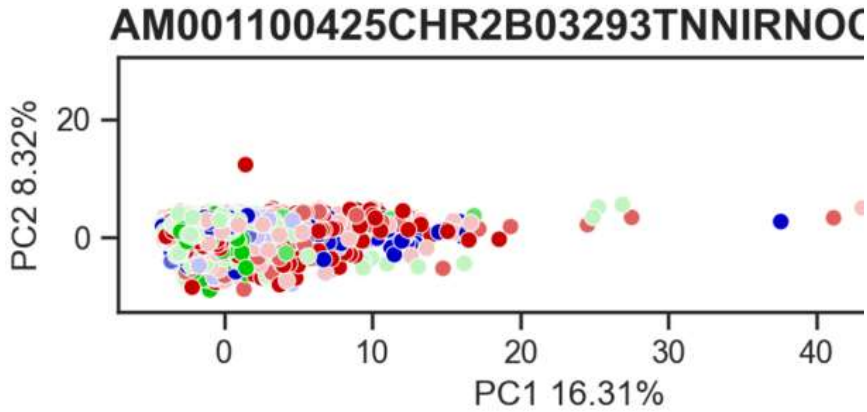
Figure 11

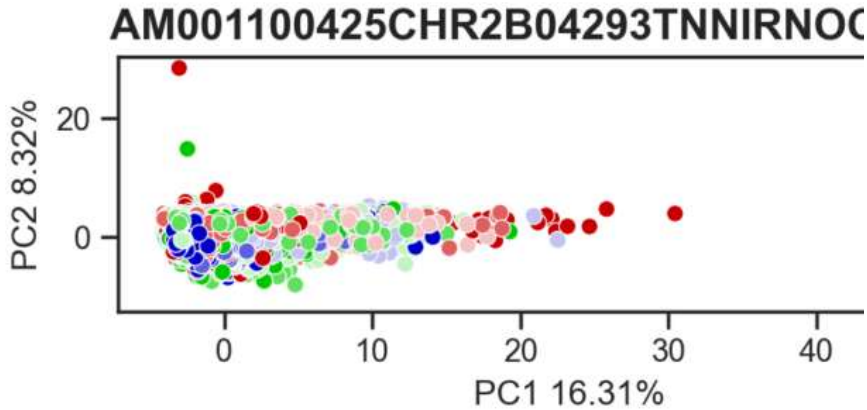

Each graph is a seperate Experiment and colored by Layers
AM001100425CHR2B
PC2 8.32%
PC1 16.31%

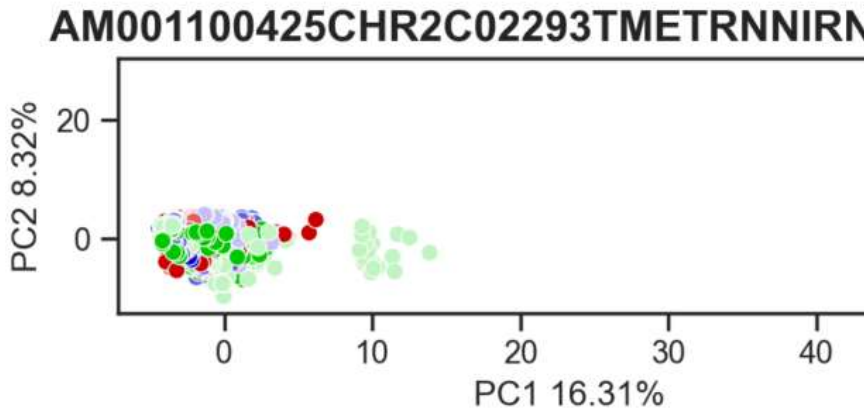

1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1
Layers
(-15.82,145.24]
(145.24,287.87]
(287.87,438.08]
(438.08,615.49]
(615.49,1225.32
(1225.32,1475.7
(1475.75,1629.6
(1629.69,1770.8

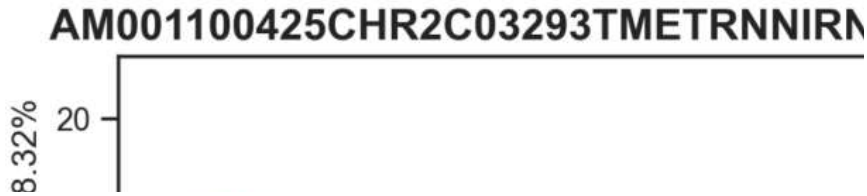
Each graph is a seperate Experiment an

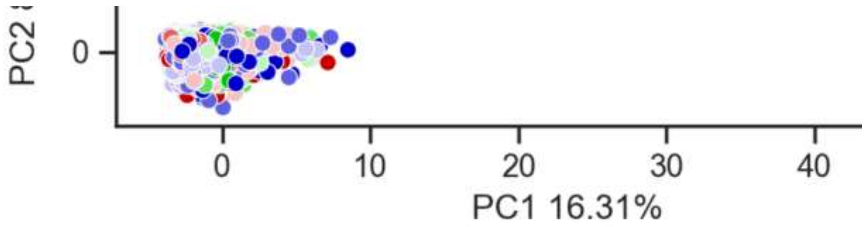




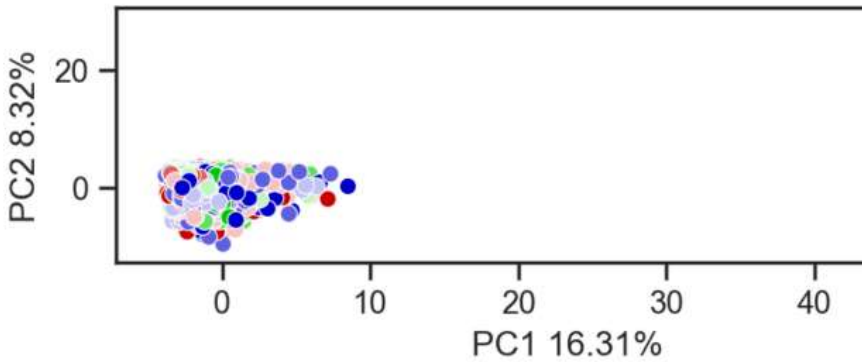




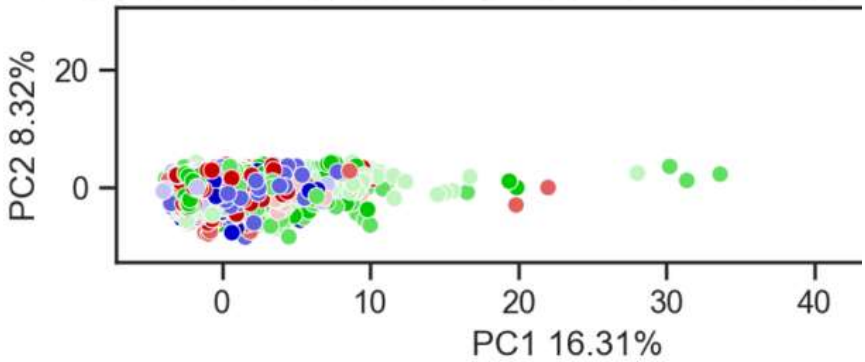




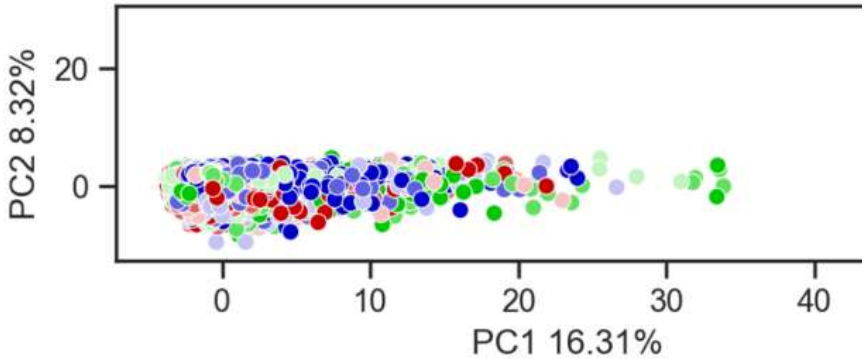
AM001100425CHR2C04293TMETRNNIRN



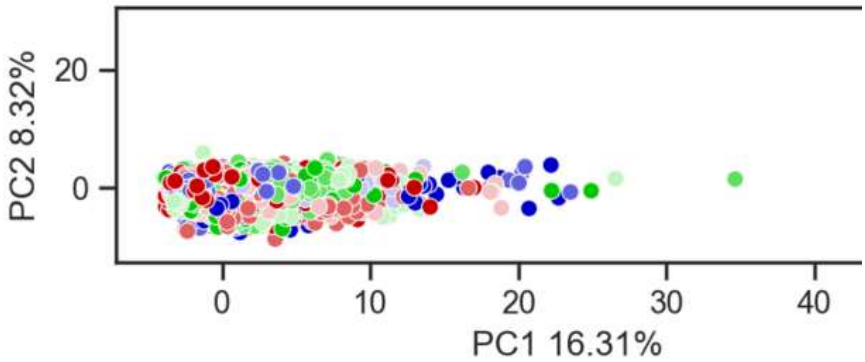
AM001100425CHR2D02293TGABYNNIRN



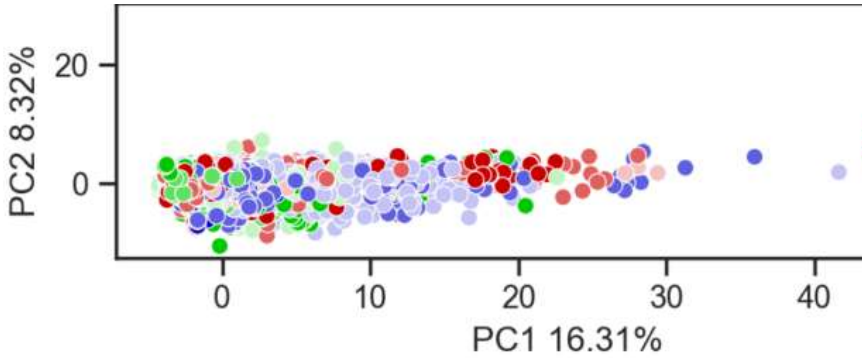
AM001100425CHR2D03293TGABYNNIRN



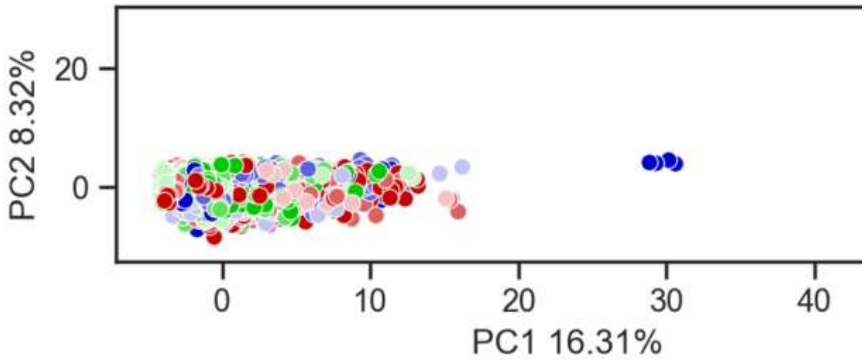
AM001100425CHR2D04293TGABYNNIRN



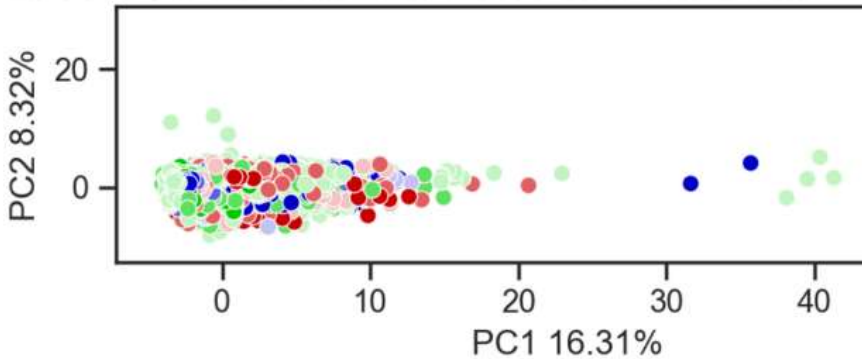
AM001100425CHR2E02293TNNIRMETRGAE



AM001100425CHR2E03293TNNIRMETRGAE



AM001100425CHR2E04293TNNIRMETRGAE



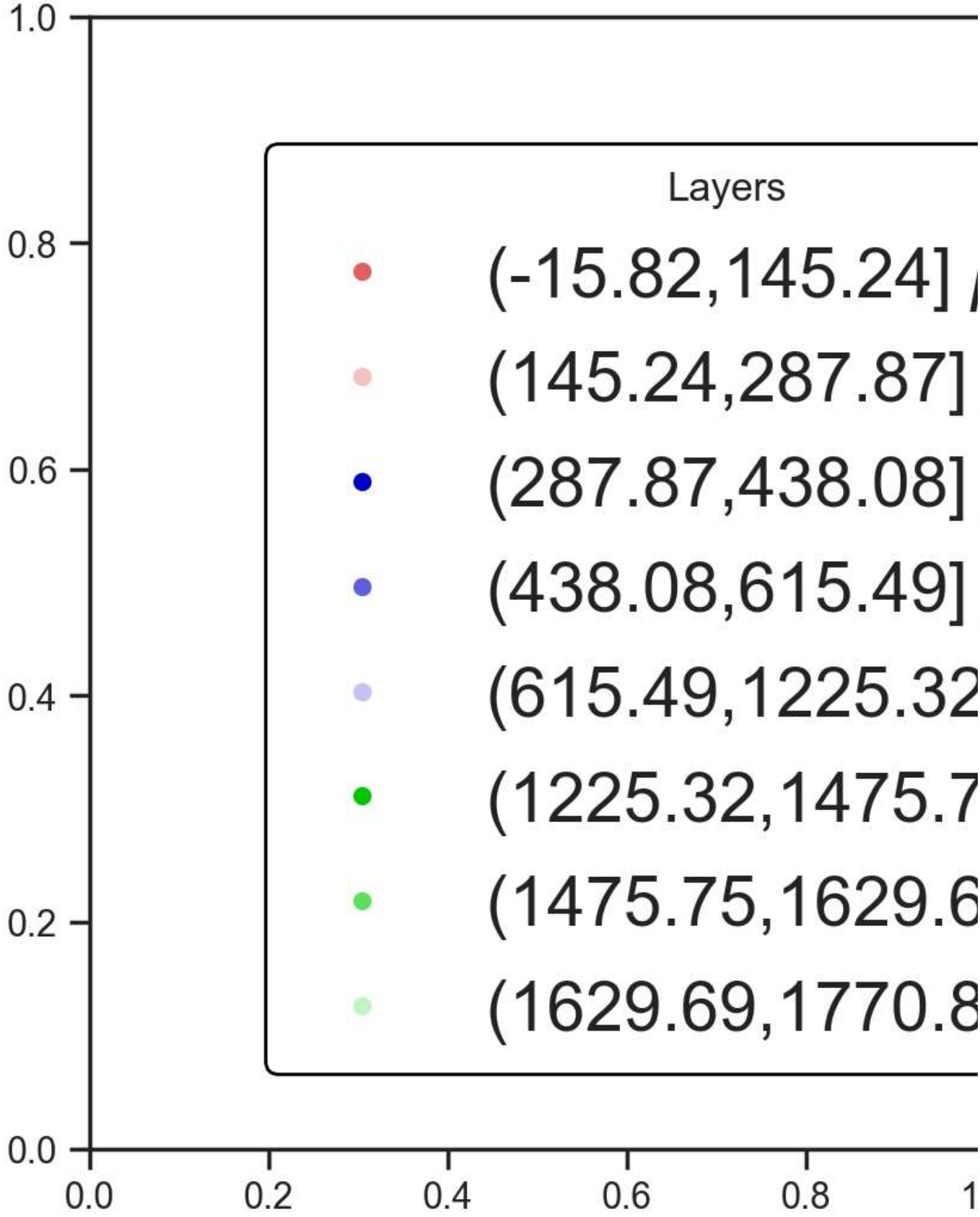
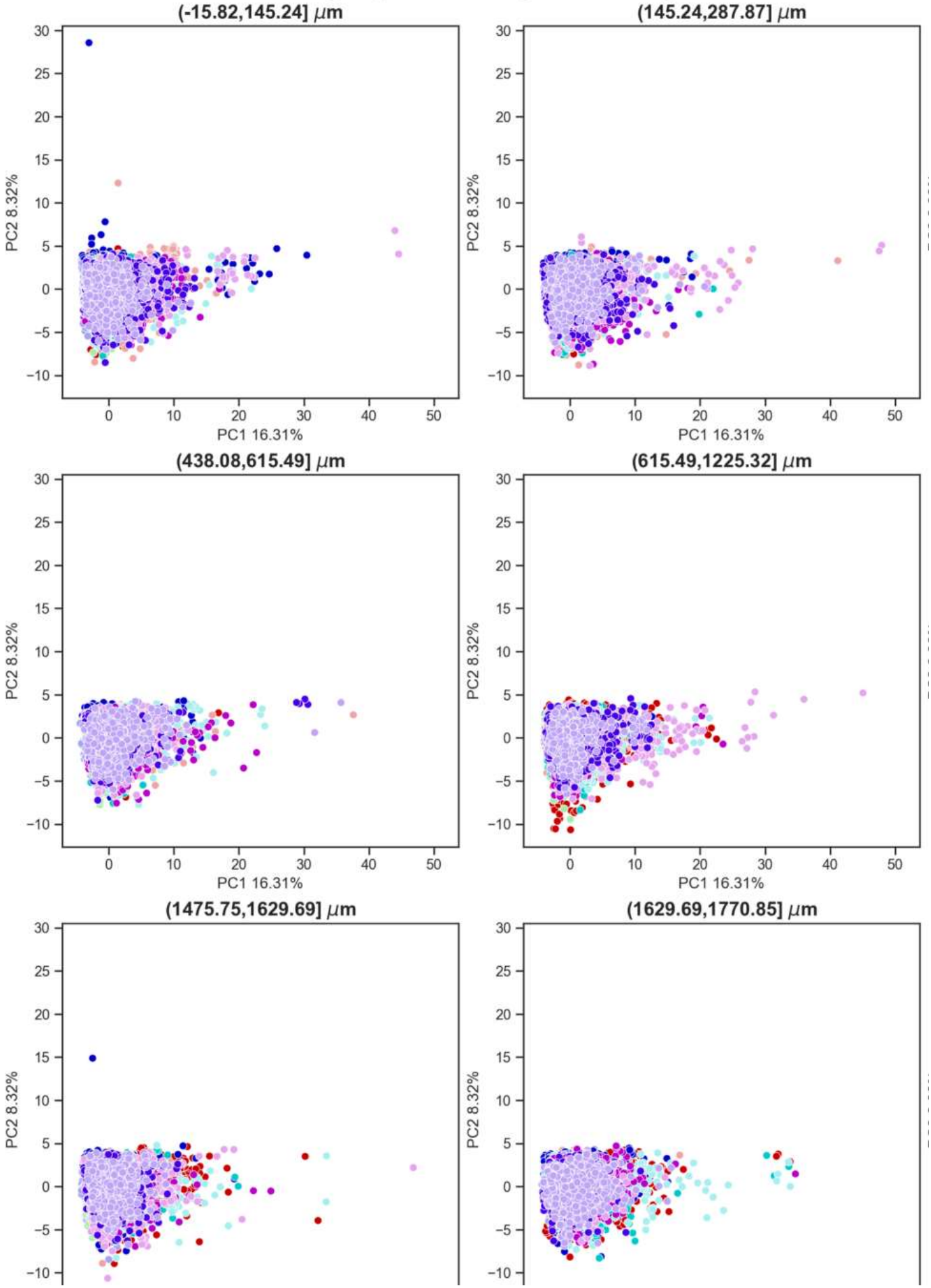

1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1
Layers
(-15.82,145.24]
(145.24,287.87]
(287.87,438.08]
(438.08,615.49]
(615.49,1225.32
(1225.32,1475.7
(1475.75,1629.6
(1629.69,1770.8

Figure 12

Each graph is a seperate Layers and colored



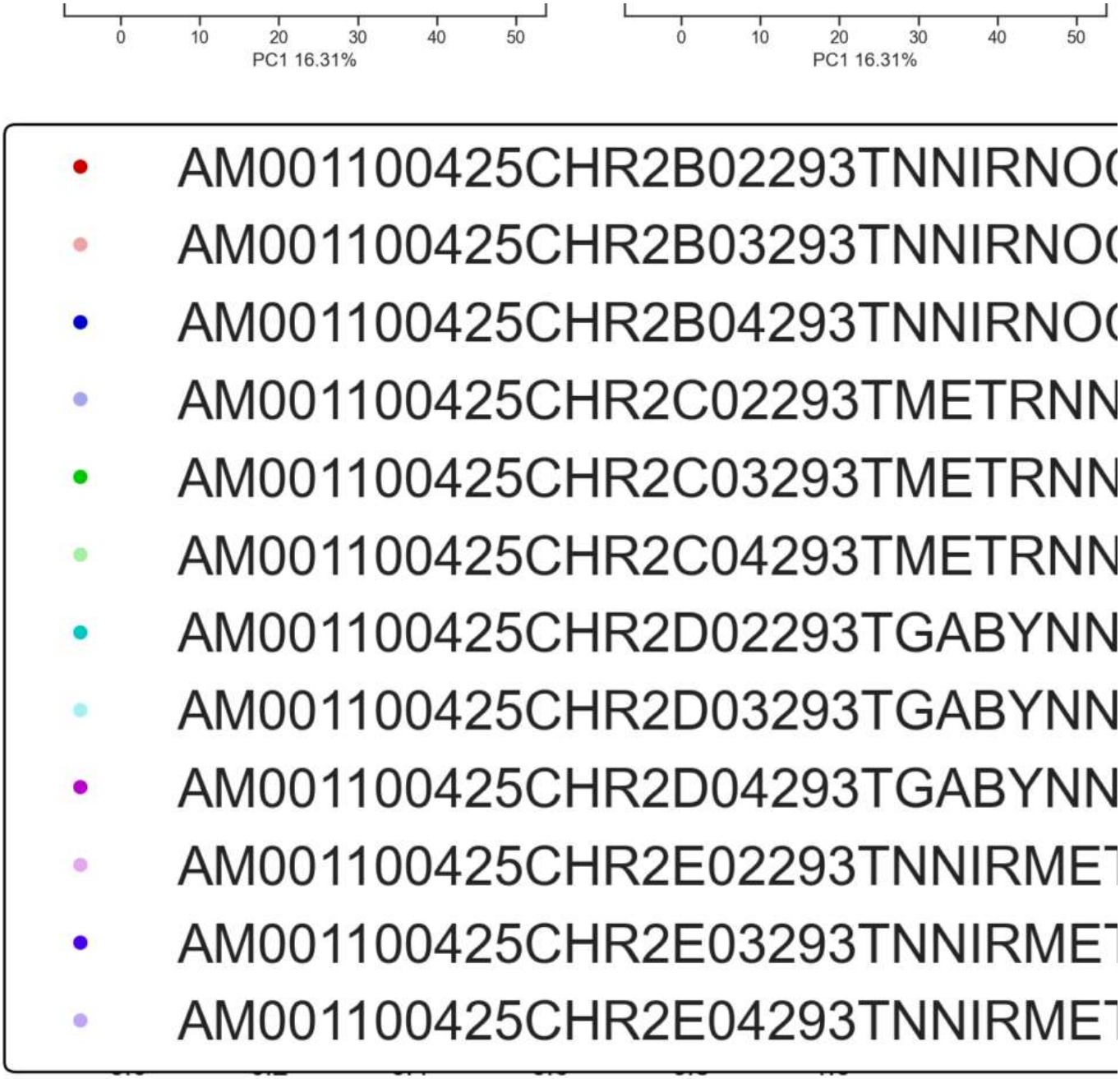

0 10 20 30 40 50
PC1 16.31%
0 10 20 30 40 50
PC1 16.31%
AM001100425CHR2B02293TNNIRNO
AM001100425CHR2B03293TNNIRNO
AM001100425CHR2B04293TNNIRNO
AM001100425CHR2C02293TMETRNN
AM001100425CHR2C03293TMETRNN
AM001100425CHR2C04293TMETRNN
AM001100425CHR2D02293TGABYNN
AM001100425CHR2D03293TGABYNN
AM001100425CHR2D04293TGABYNN
AM001100425CHR2E02293TNNIRME
AM001100425CHR2E03293TNNIRME
AM001100425CHR2E04293TNNIRME

Figure 13

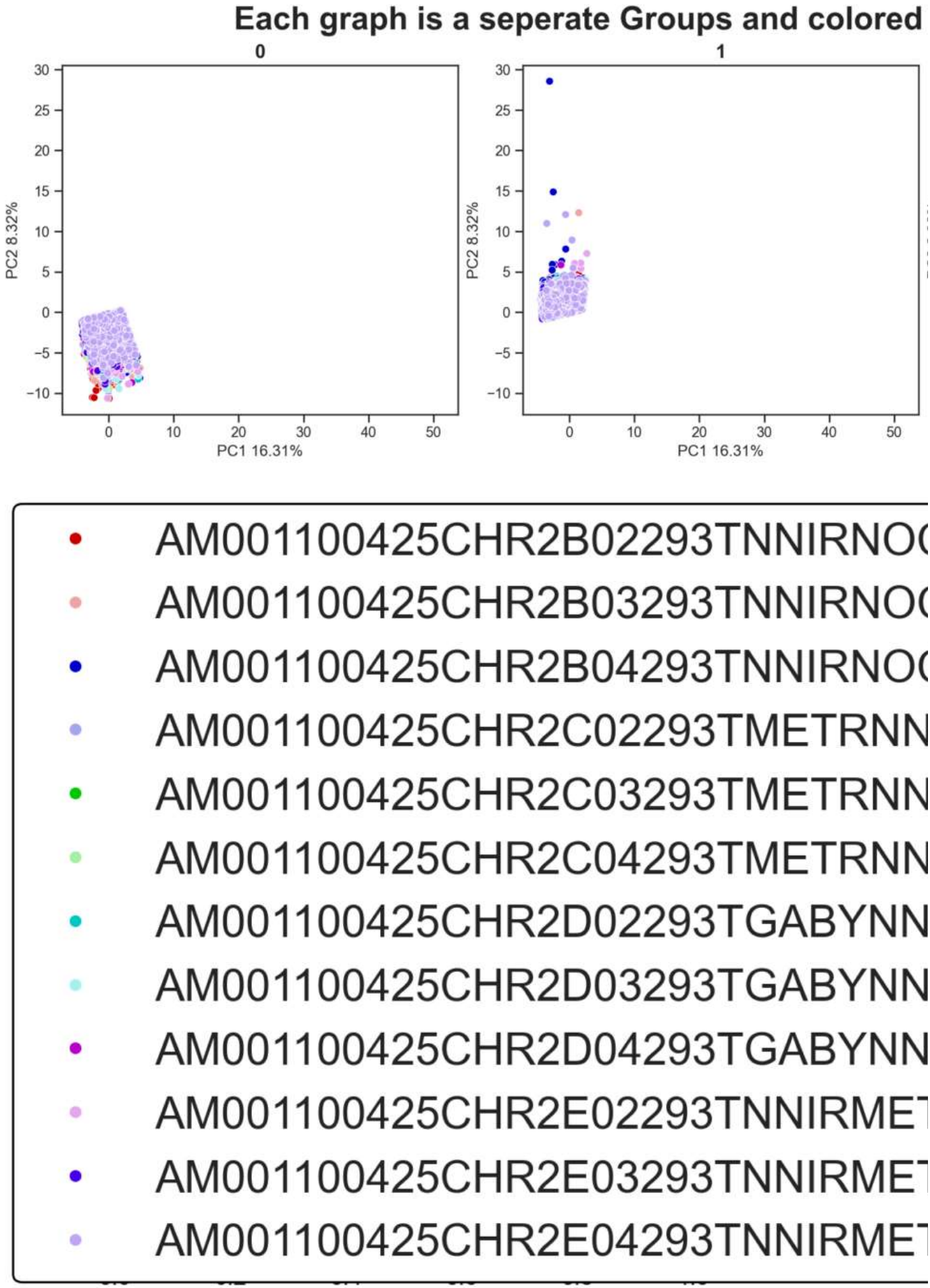
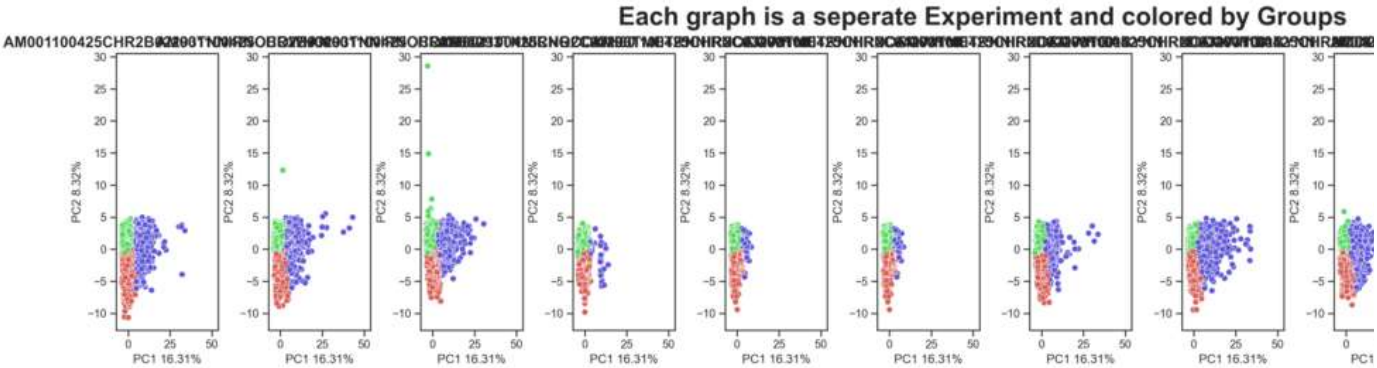
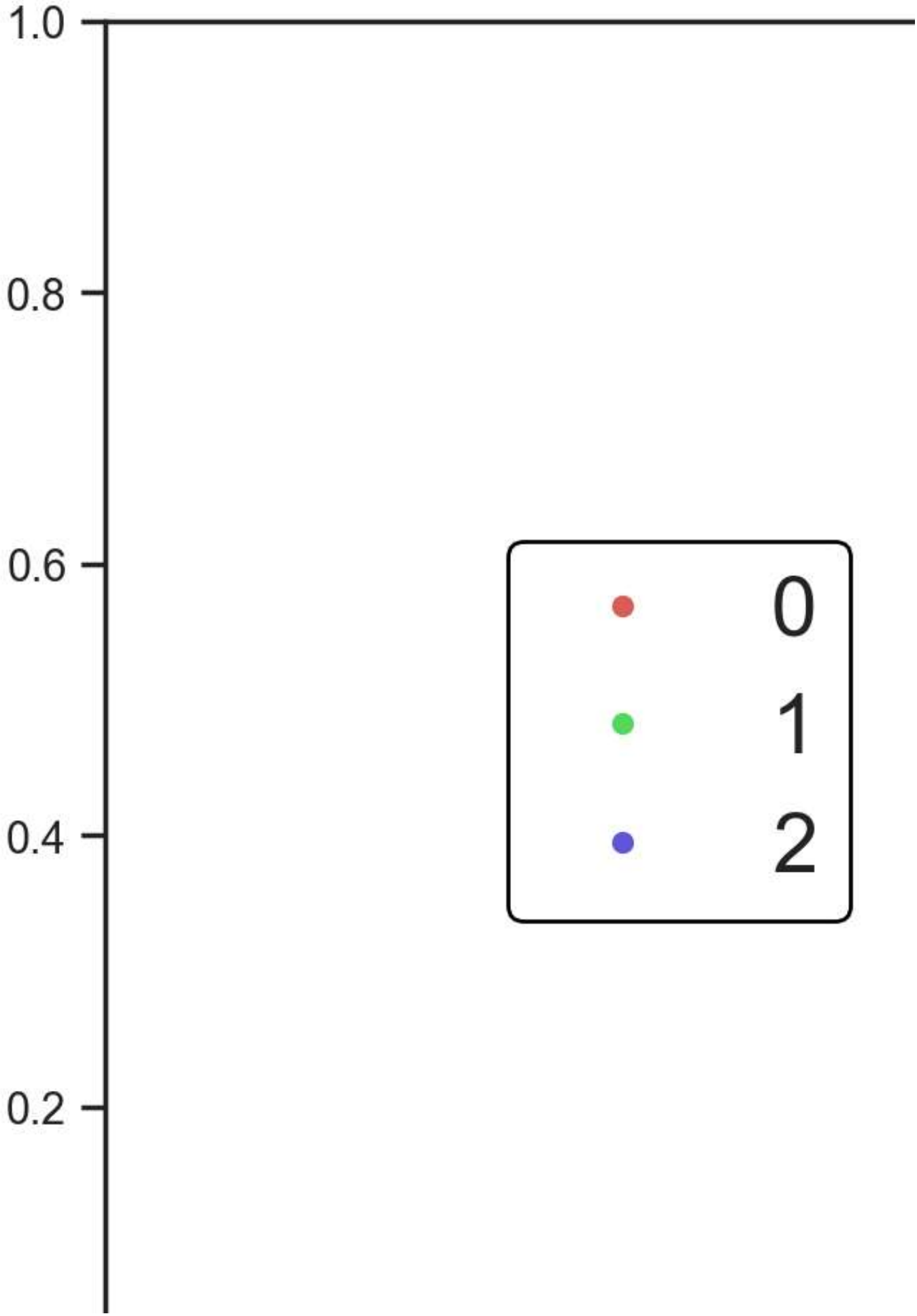
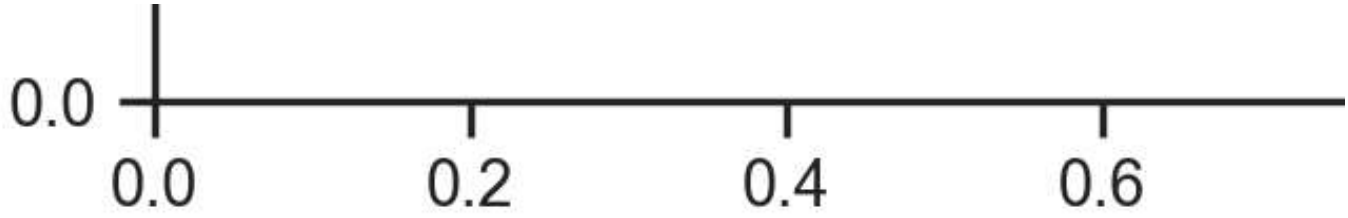

Each graph is a seperate Groups and colored
0
1
PC2 8.32%
PC1 16.31%
AM001100425CHR2B02293TNNIRNO
AM001100425CHR2B03293TNNIRNO
AM001100425CHR2B04293TNNIRNO
AM001100425CHR2C02293TMETRNN
AM001100425CHR2C03293TMETRNN
AM001100425CHR2C04293TMETRNN
AM001100425CHR2D02293TGABYNN
AM001100425CHR2D03293TGABYNN
AM001100425CHR2D04293TGABYNN
AM001100425CHR2E02293TNNIRME
AM001100425CHR2E03293TNNIRME
AM001100425CHR2E04293TNNIRME

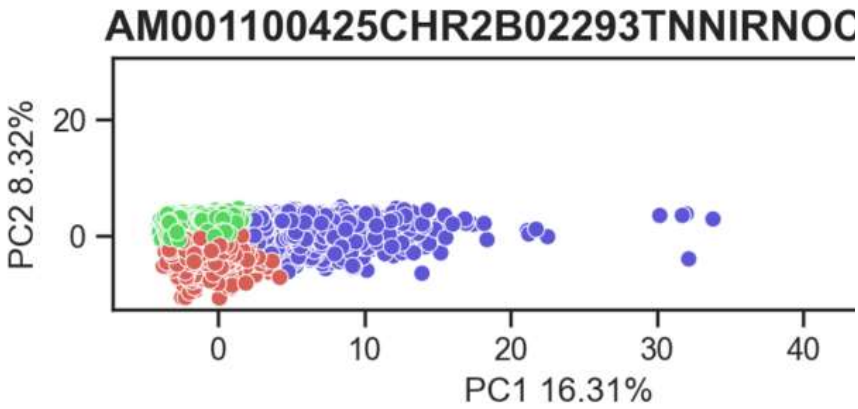
Figure 14

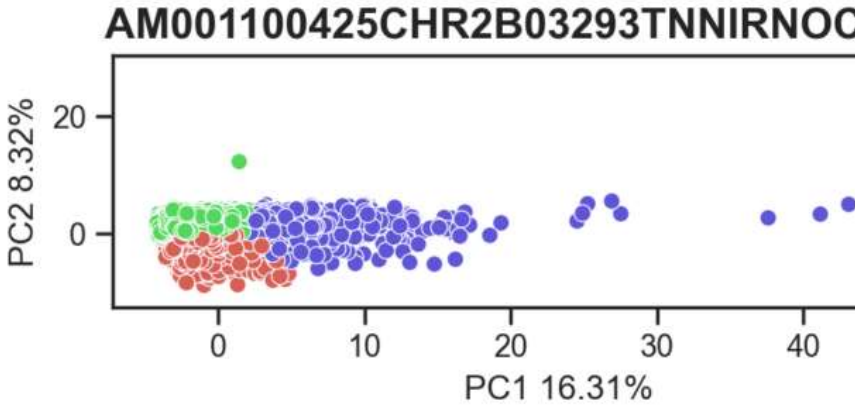

Each graph is a seperate Experiment and colored by Groups
AM001100425CHR2B
PC2 8.32%
PC1 16.31%

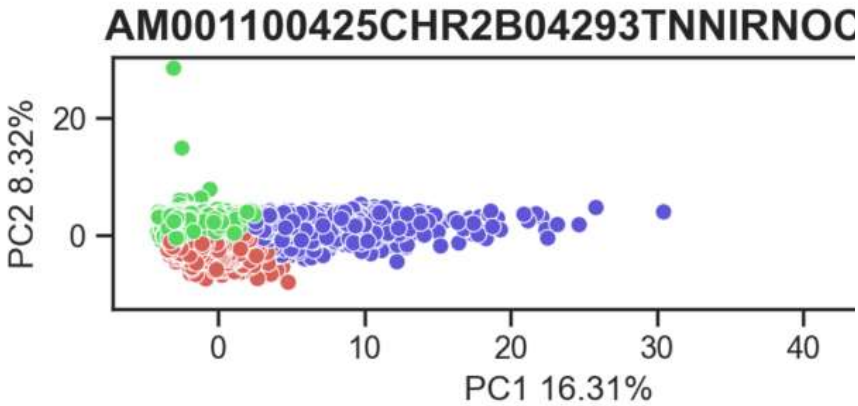

1.0
0.8
0.6
0.4
0.2
0
1
2

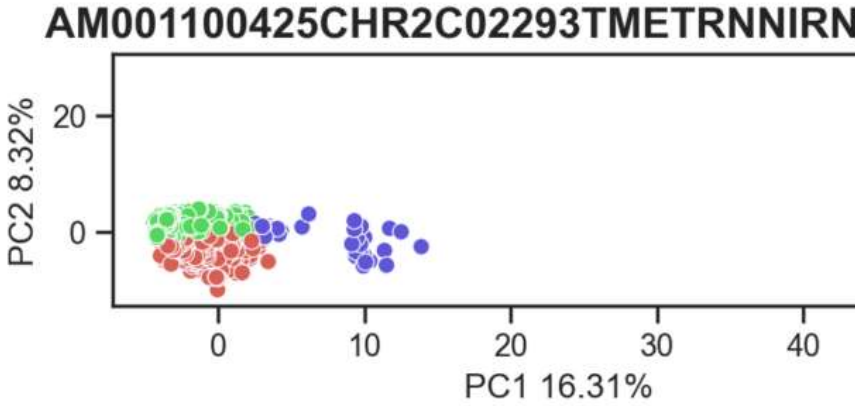

0.0
0.0
0.2
0.4
0.6

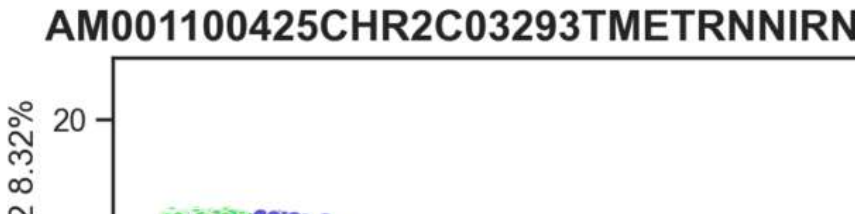
Each graph is a seperate Experiment anc

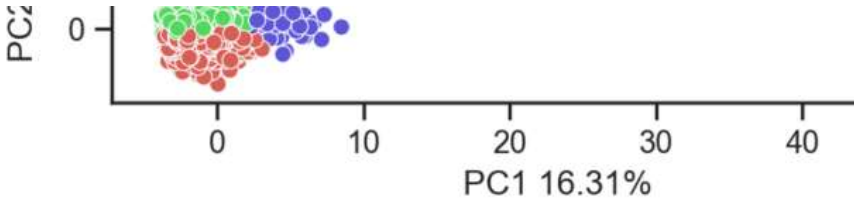




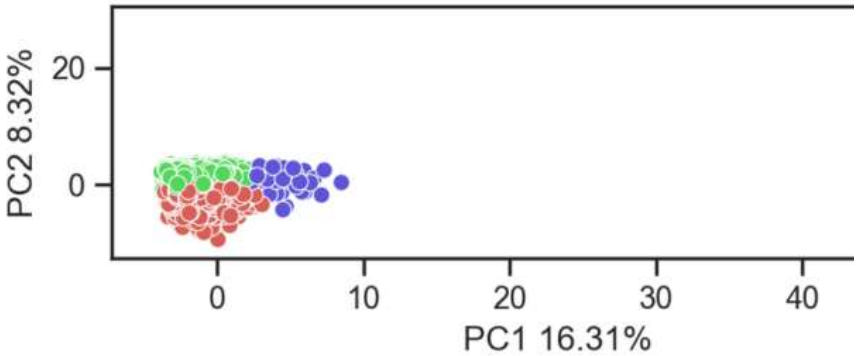




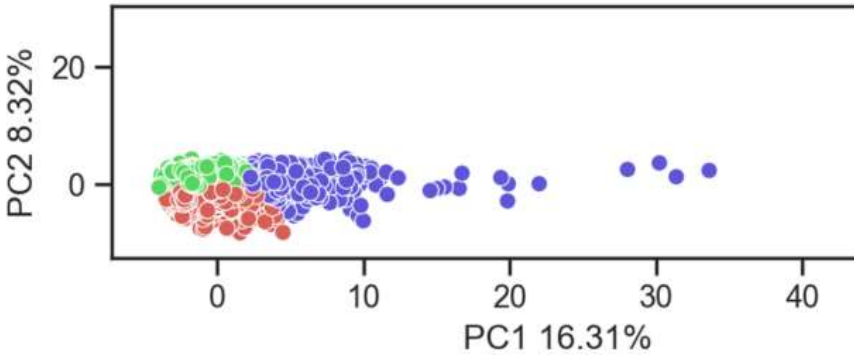




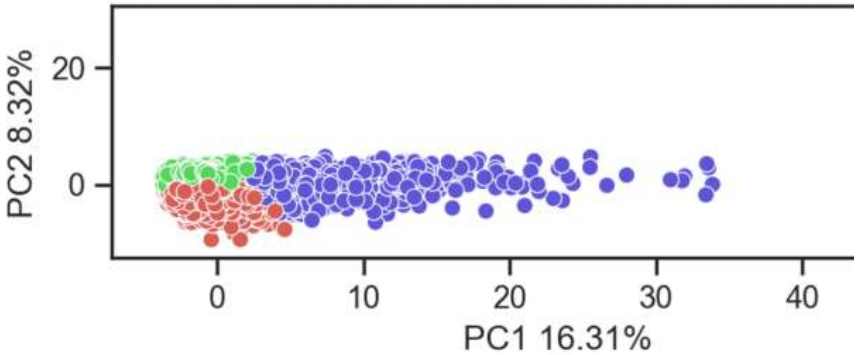
AM001100425CHR2C04293TMETRNNIRN



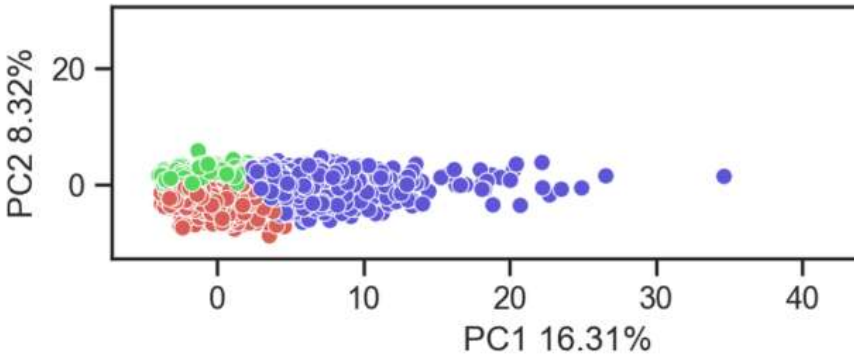
AM001100425CHR2D02293TGABYNNIRN



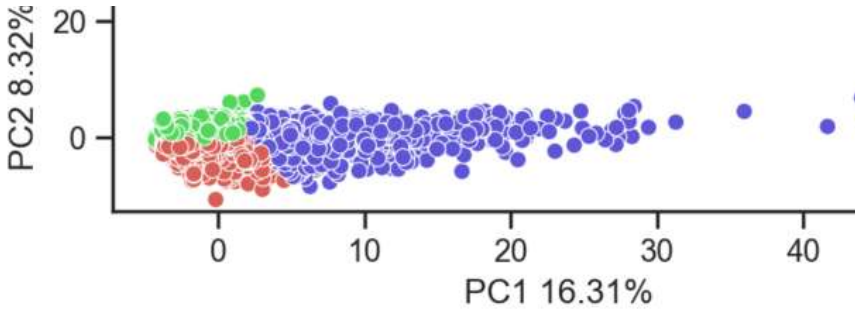
AM001100425CHR2D03293TGABYNNIRN



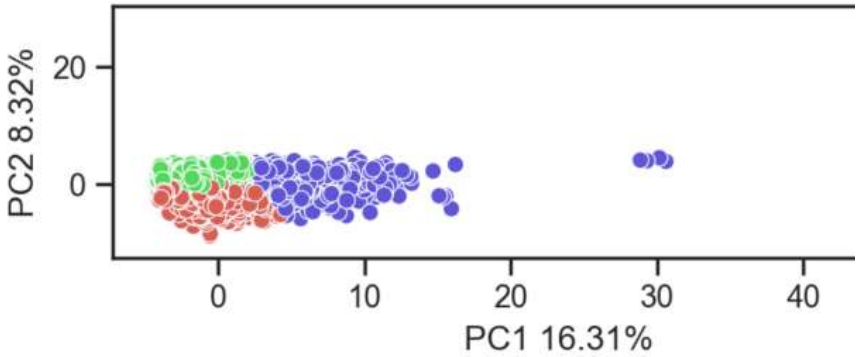
AM001100425CHR2D04293TGABYNNIRN



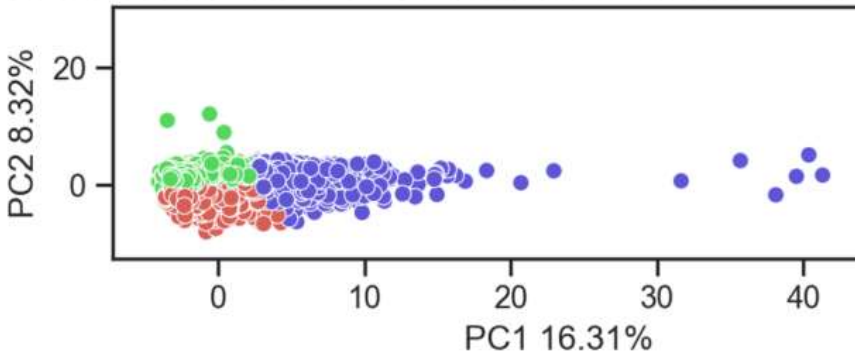
AM001100425CHR2E02293TNNIRMETRGAB

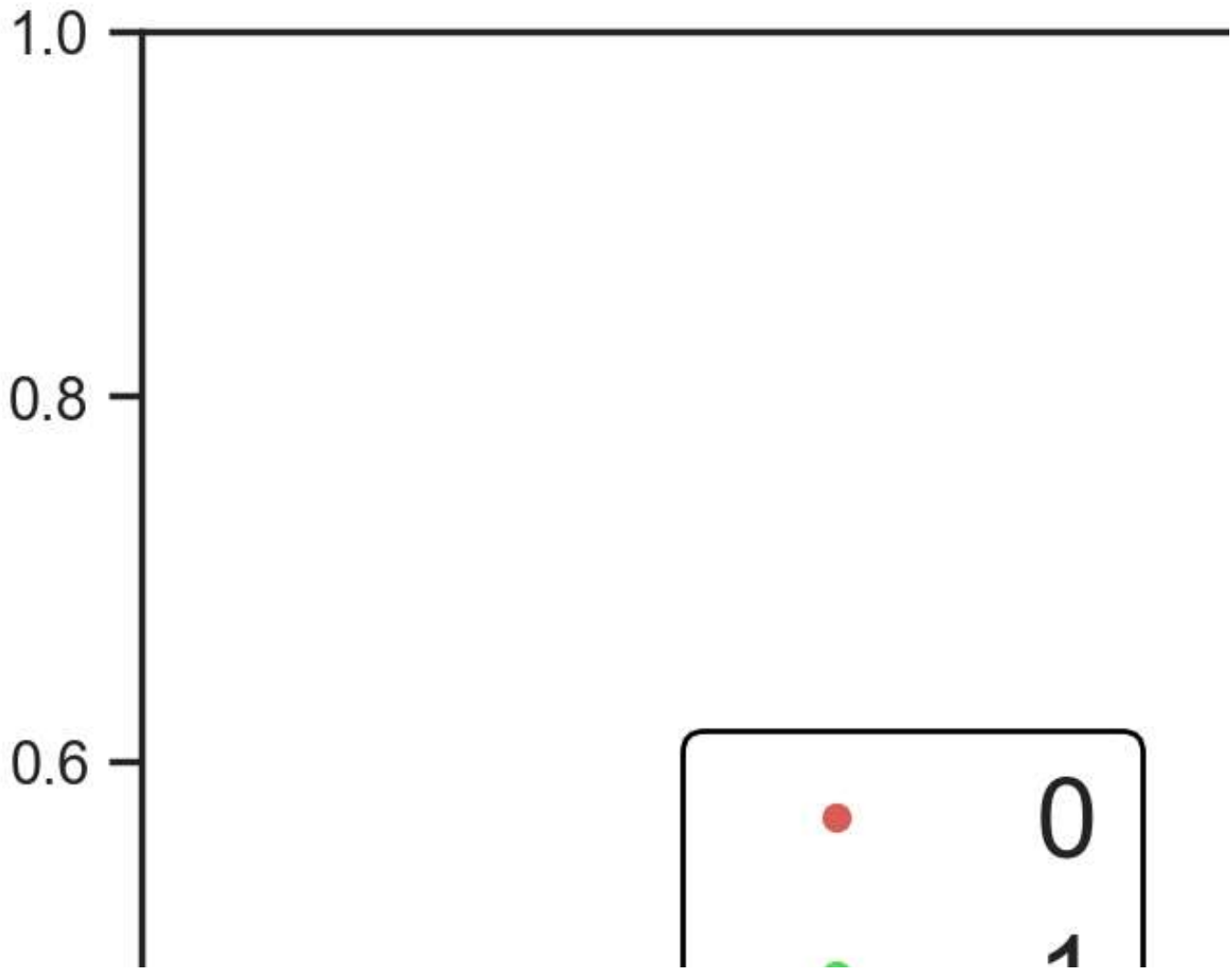


AM001100425CHR2E03293TNNIRMETRGAB



AM001100425CHR2E04293TNNIRMETRGAB




1.0
0.8
0.6
0

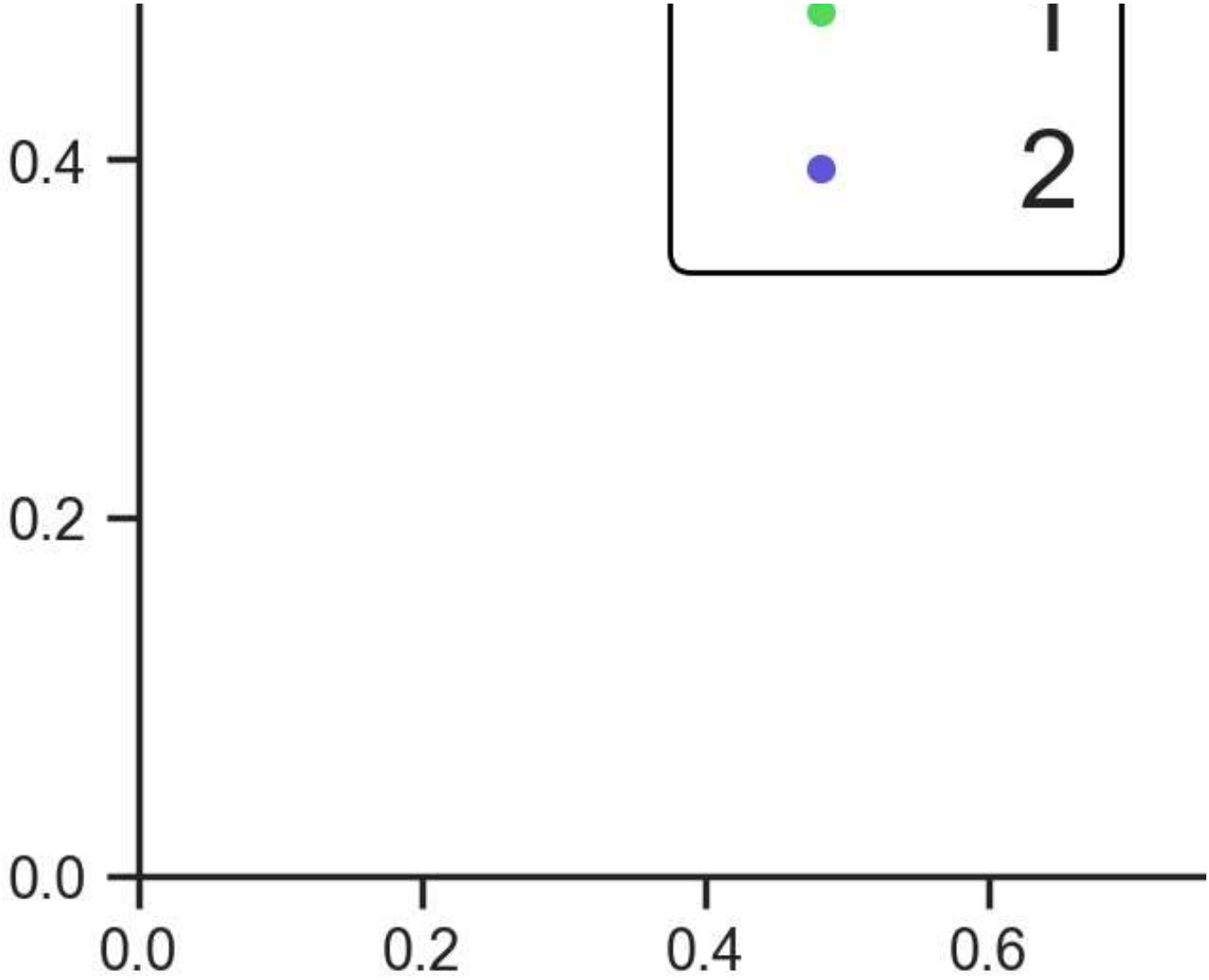
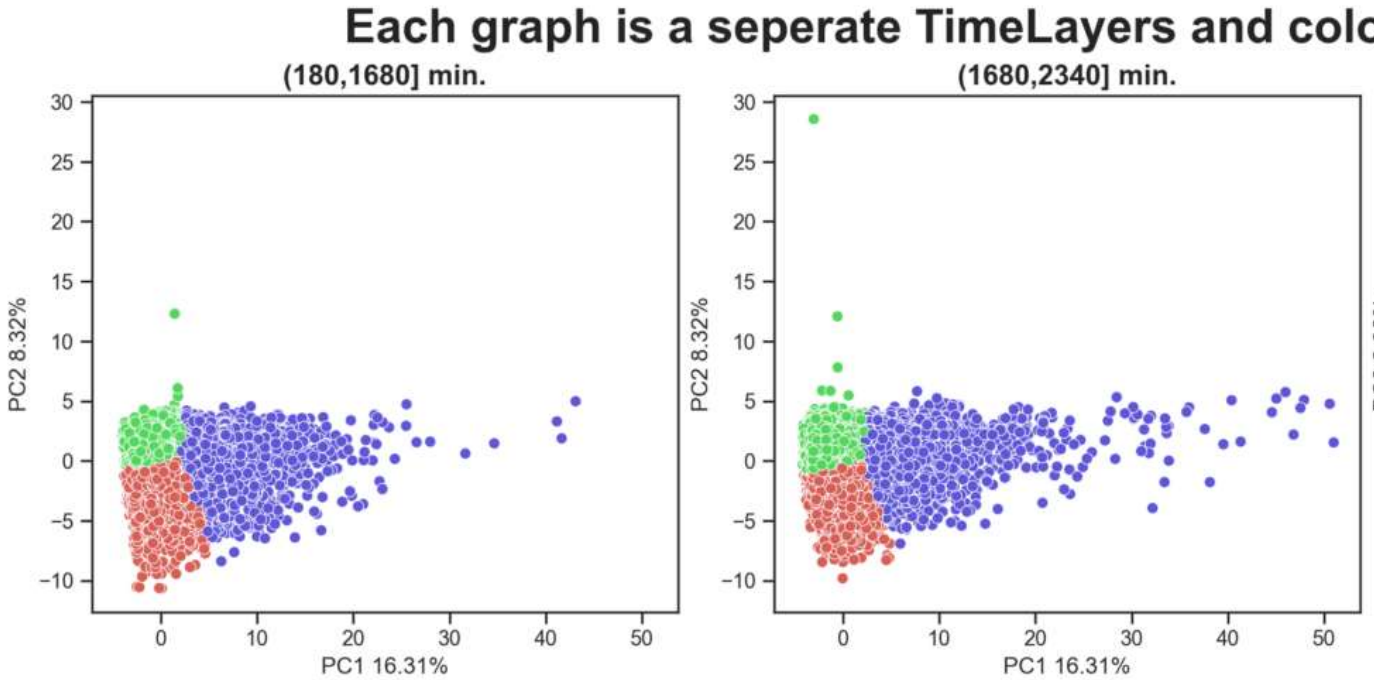
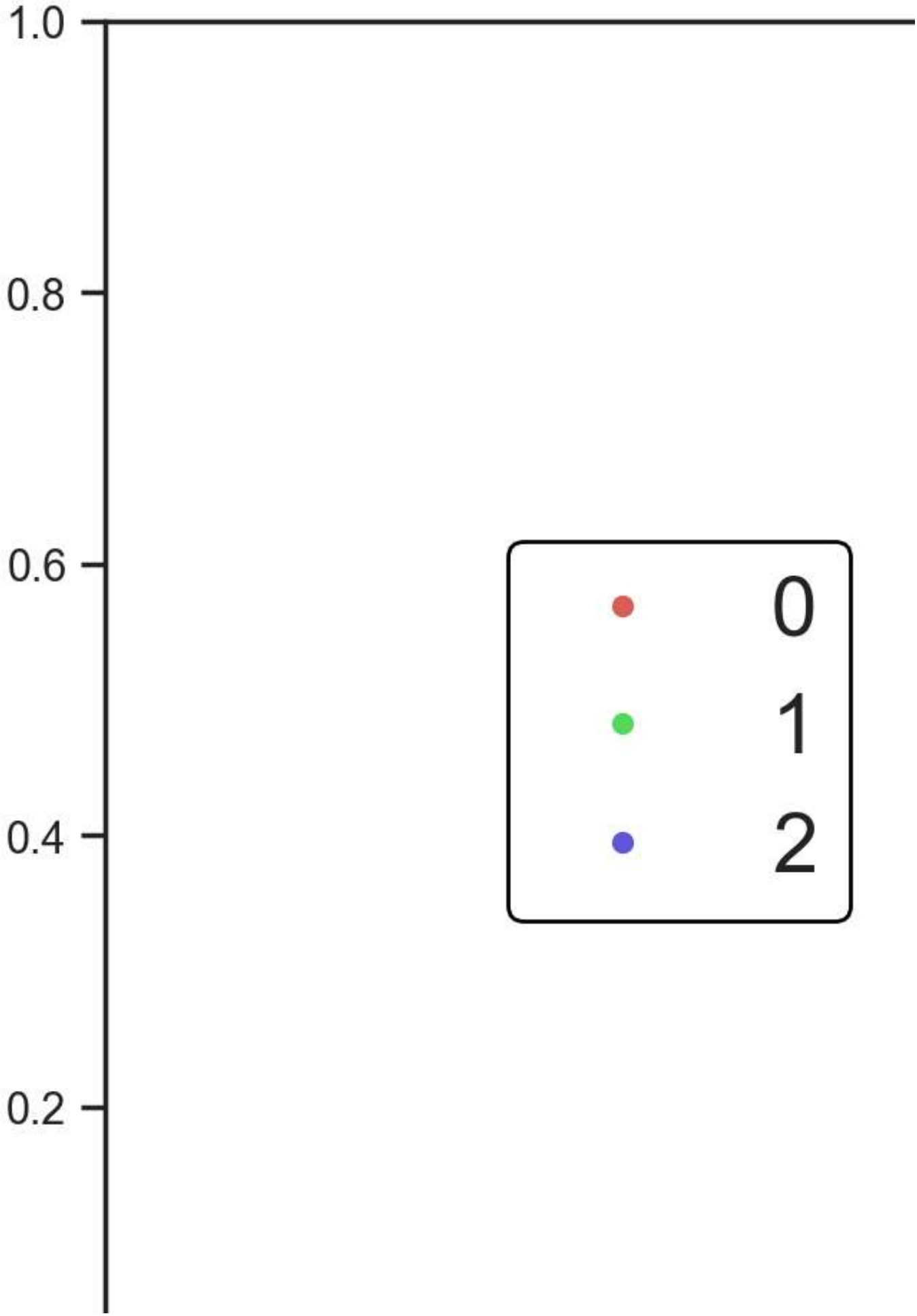

1
2
0.4
0.2
0.0
0.0
0.2
0.4
0.6

Figure 15


Each graph is a seperate TimeLayers and colo
(180,1680] min.
(1680,2340] min.
PC2 8.32%
PC1 16.31%
30
25
20
15
10
5
0
−5
−10
0
10
20
30
40
50


1.0
0.8
0.6
0.4
0.2
0
1
2

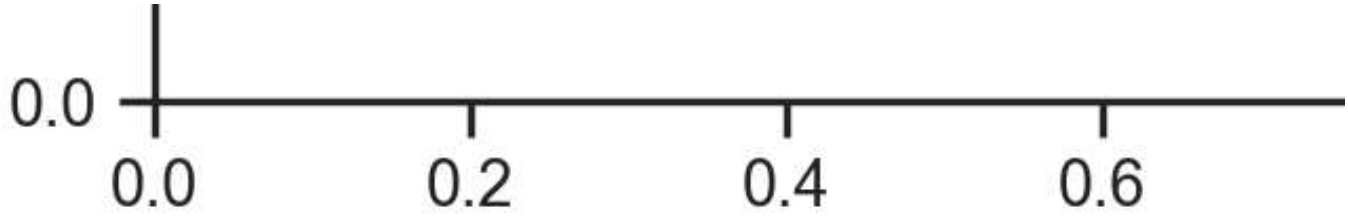
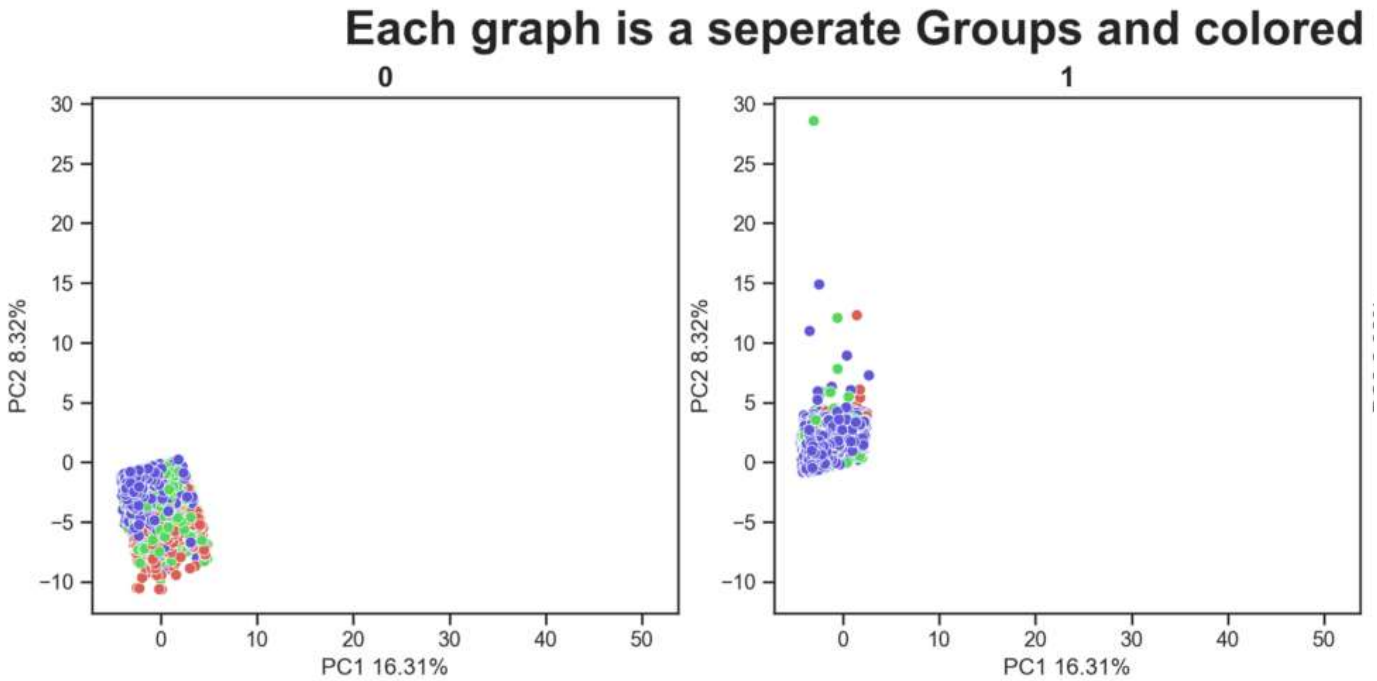

0.0
0.0
0.2
0.4
0.6

Figure 16


Each graph is a seperate Groups and colored
0
1
PC2 8.32%
PC1 16.31%
30
25
20
15
10
5
0
−5
−10
0
10
20
30
40
50

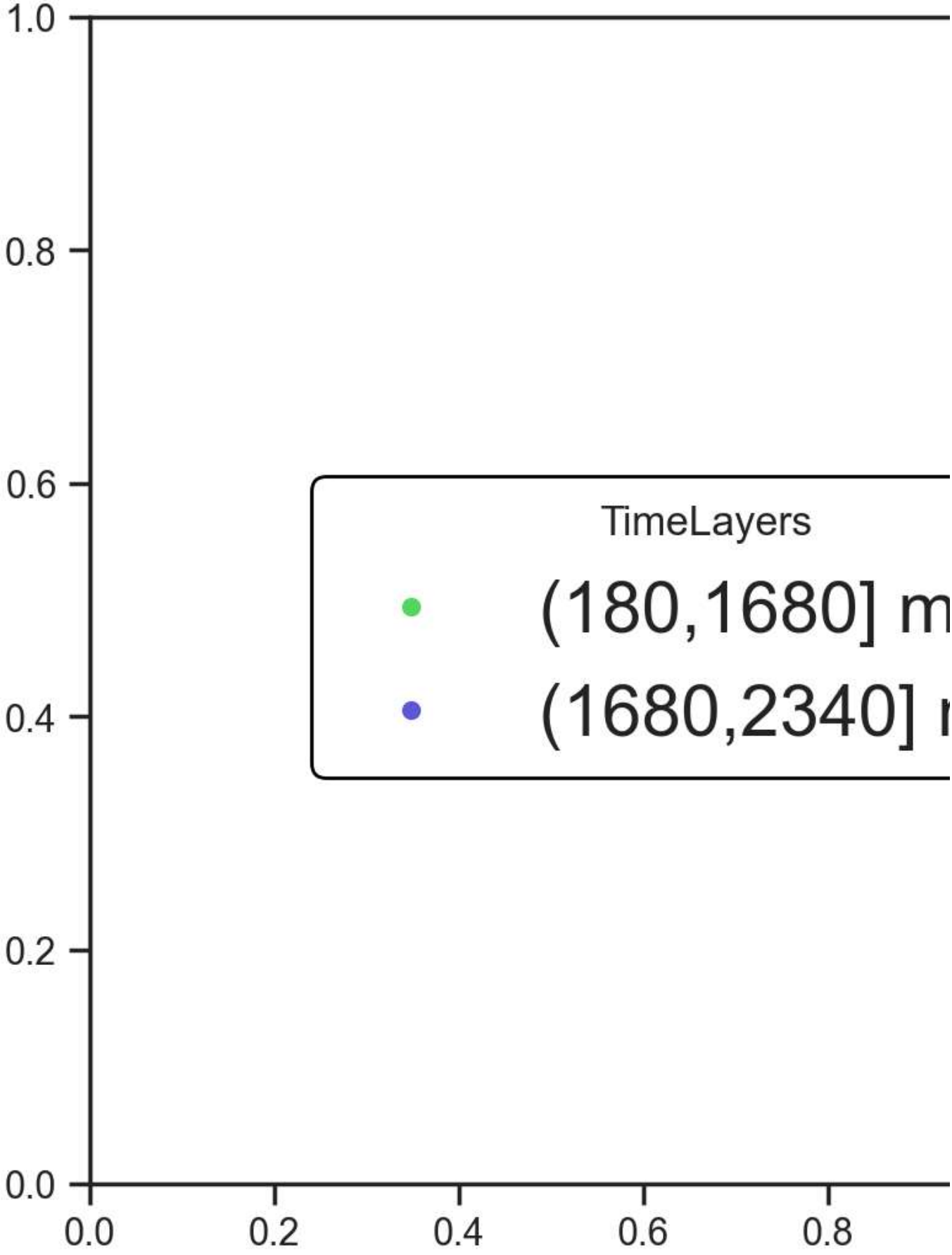
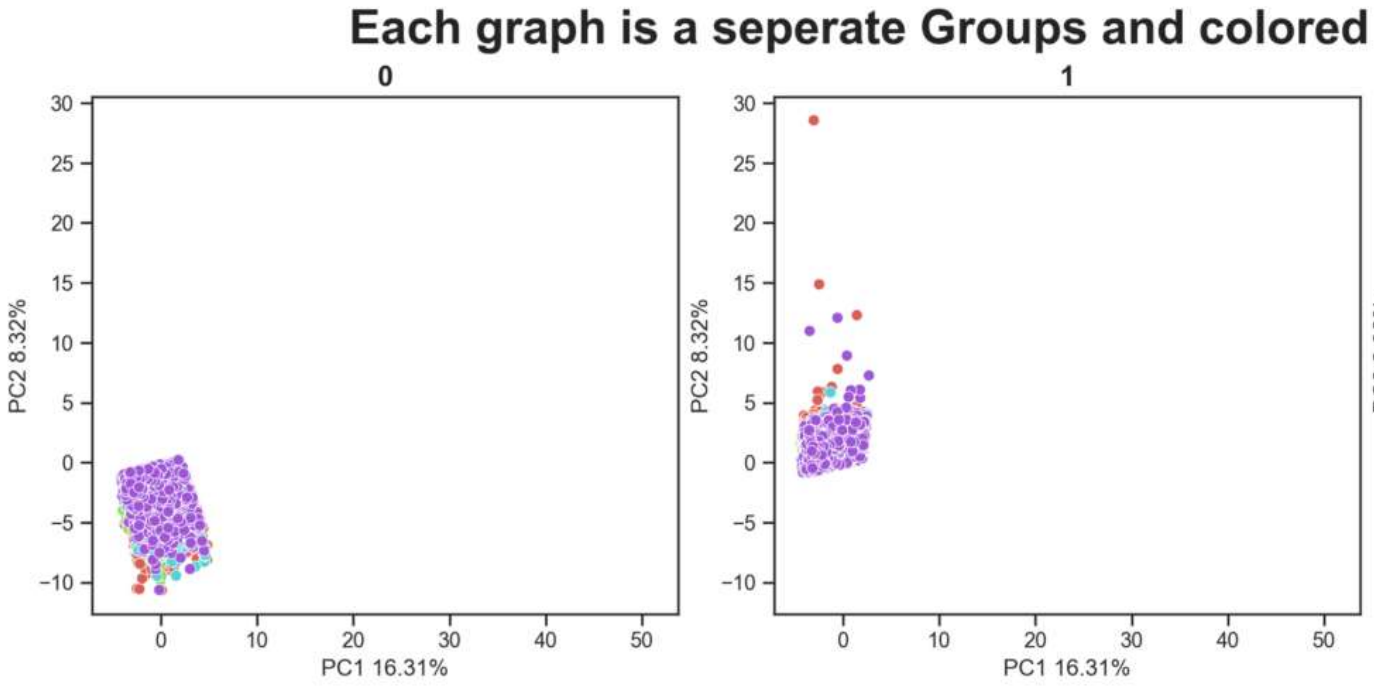


Figure 17


Each graph is a seperate Groups and colored
0
1
PC2 8.32%
PC1 16.31%
30
25
20
15
10
5
0
−5
−10
0
10
20
30
40
50

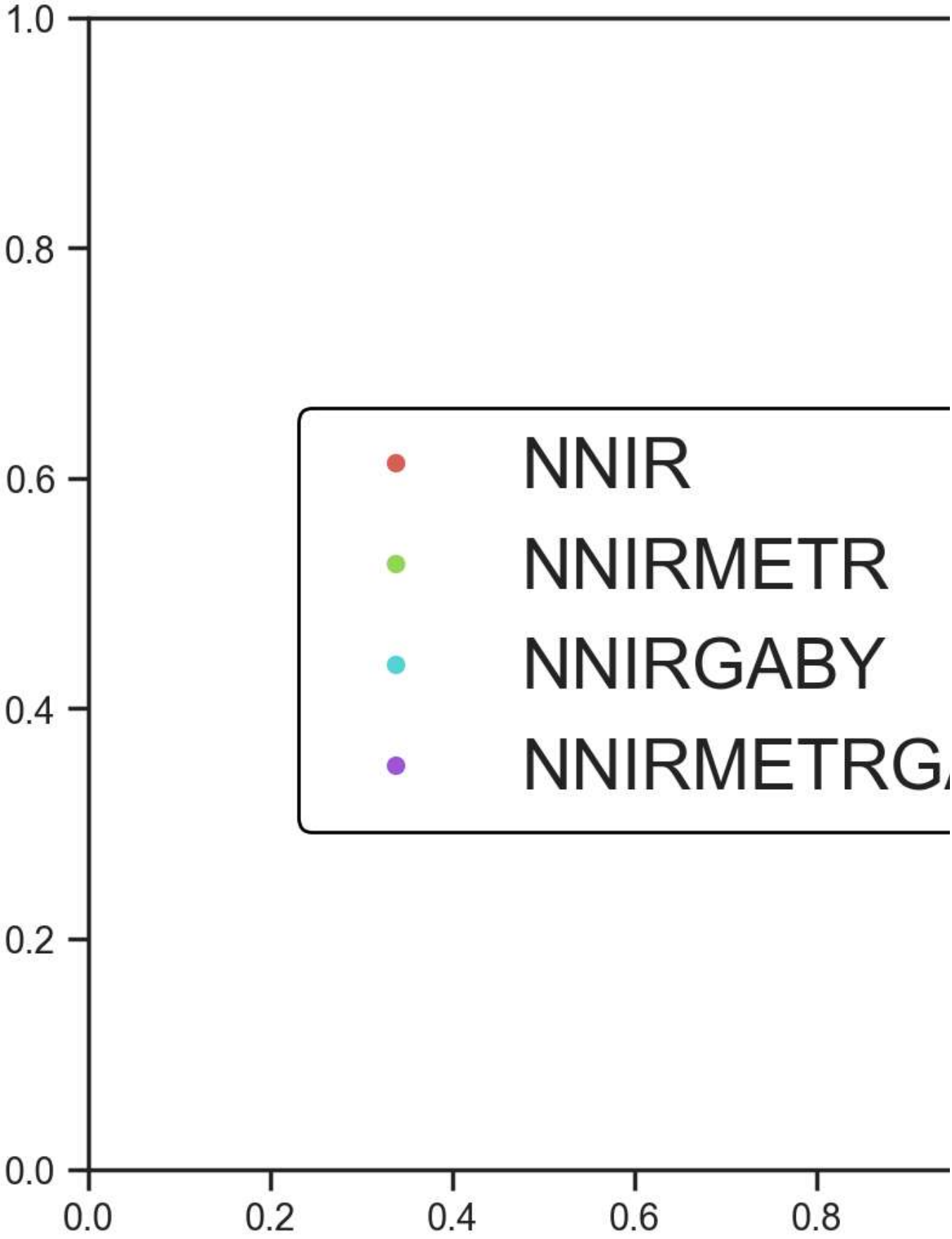
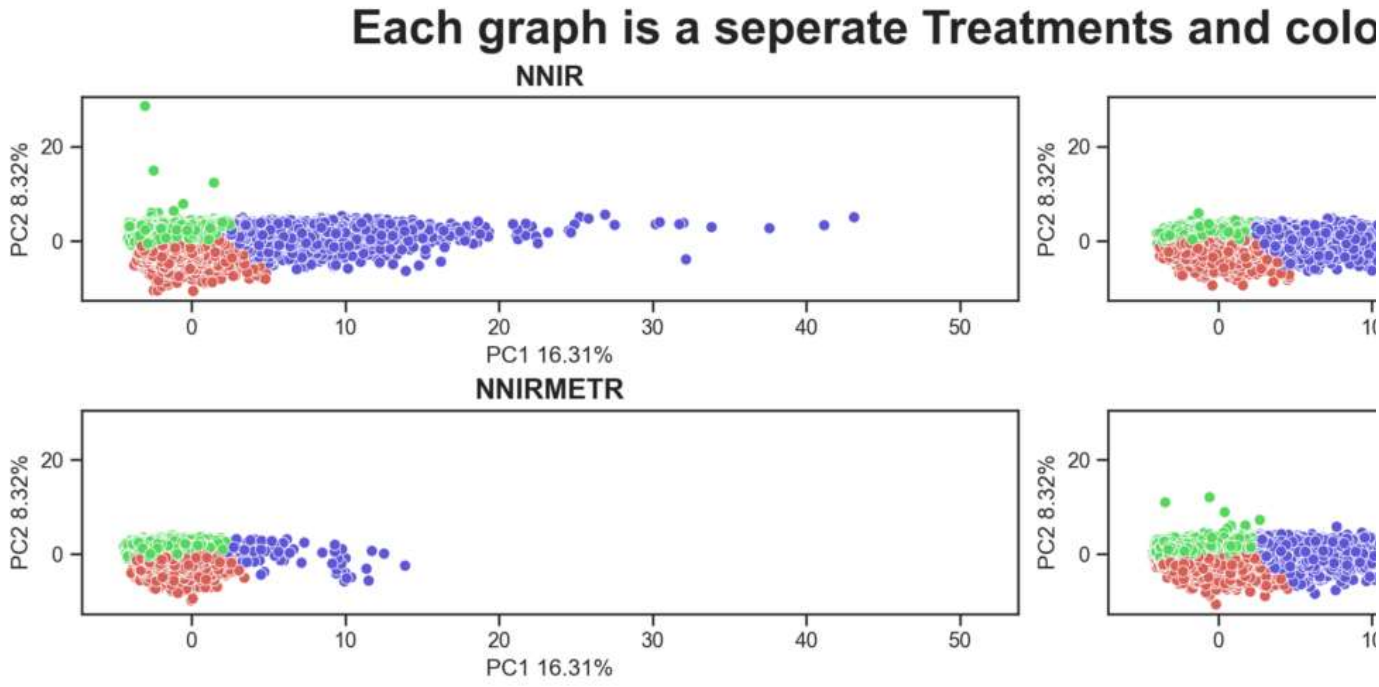
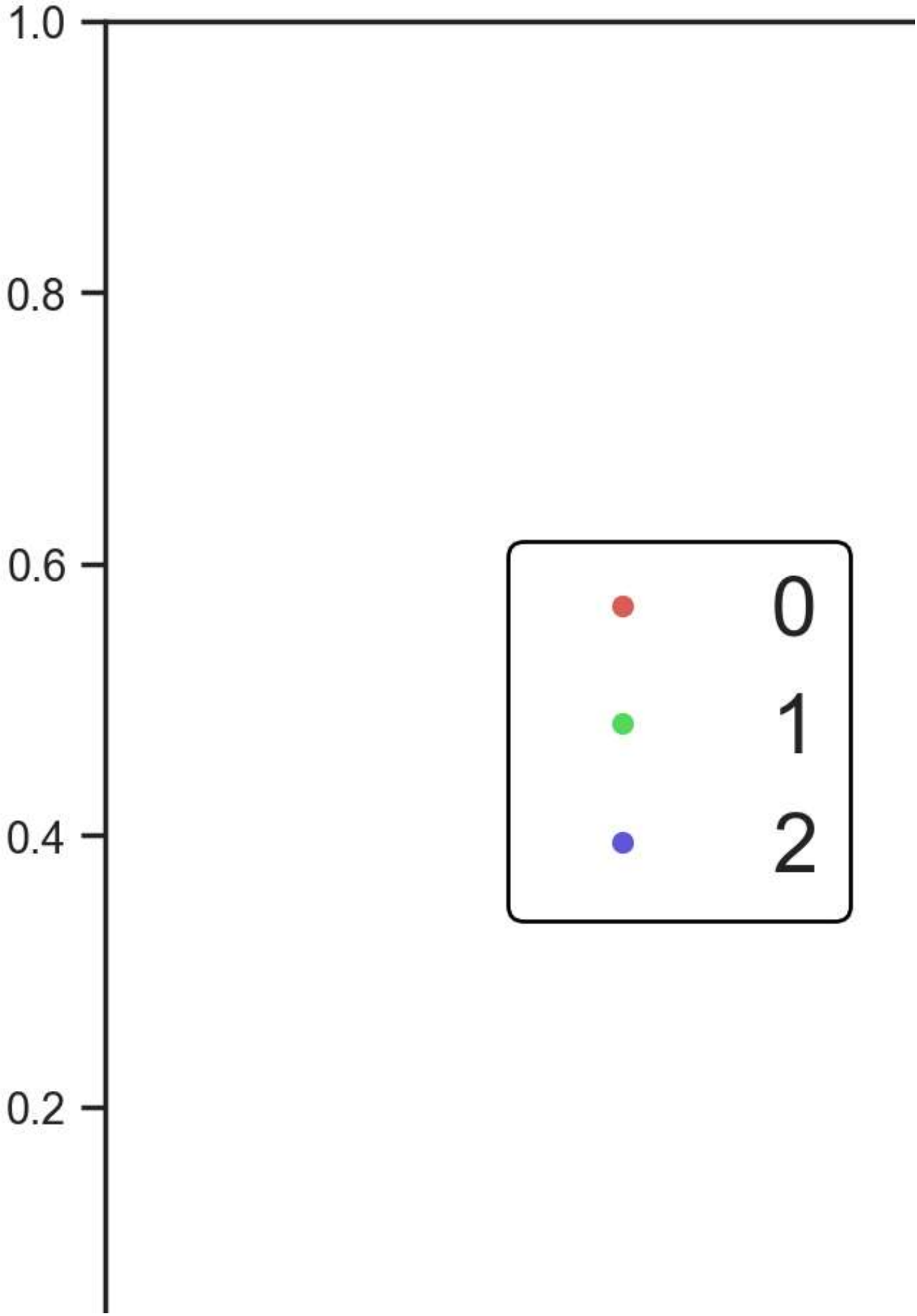

1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
NNIR
NNIRMETR
NNIRGABY
NNIRMETRG

Figure 18


Each graph is a seperate Treatments and colo
NNIR
NNIRMETR
PC2 8.32%
PC1 16.31%
20
0
0
10
20
30
40
50


1.0
0.8
0.6
0.4
0.2
0
1
2

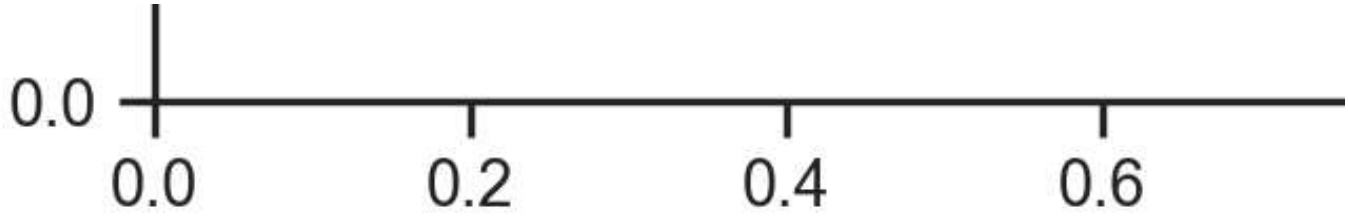


Figure 19

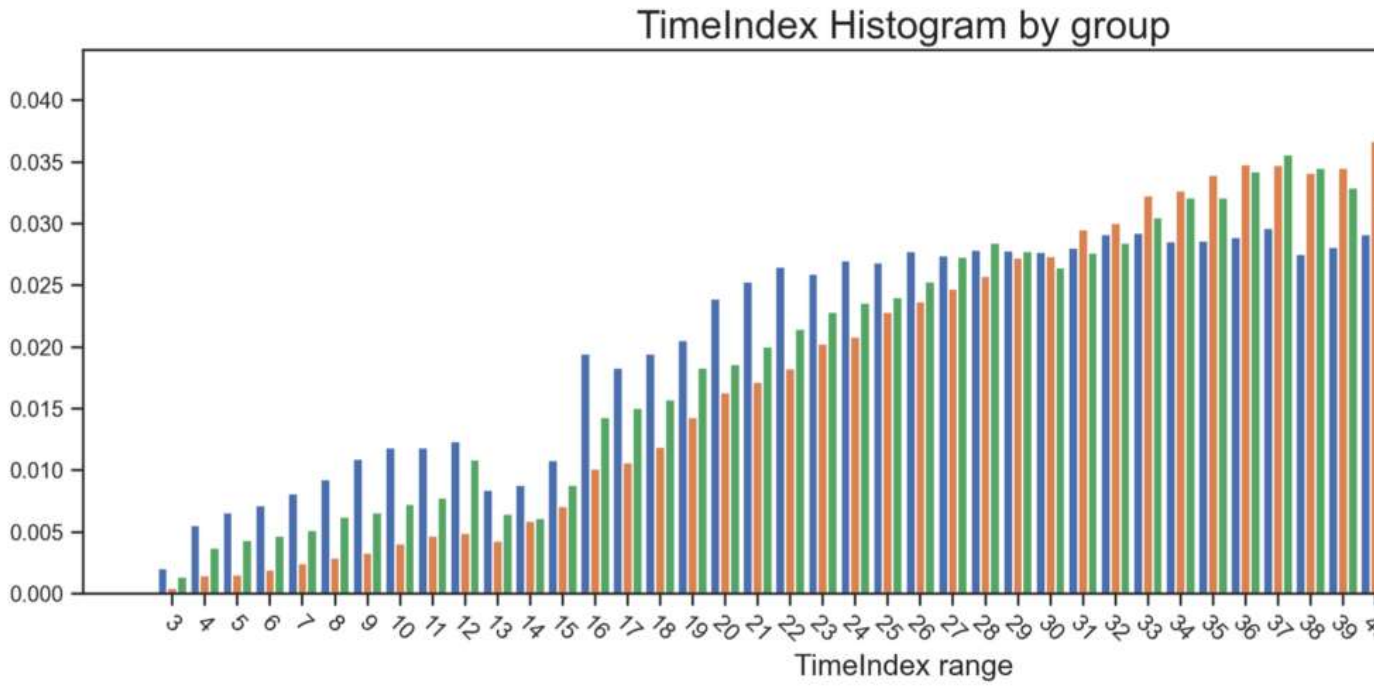
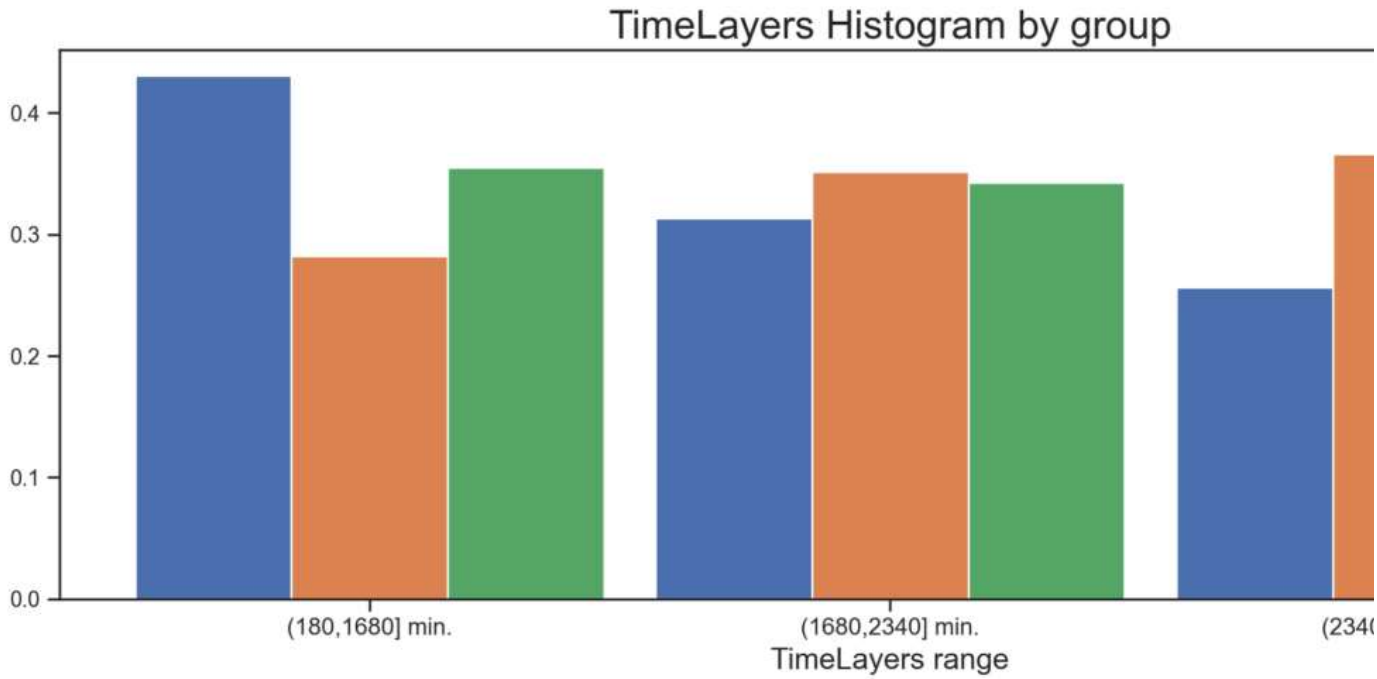
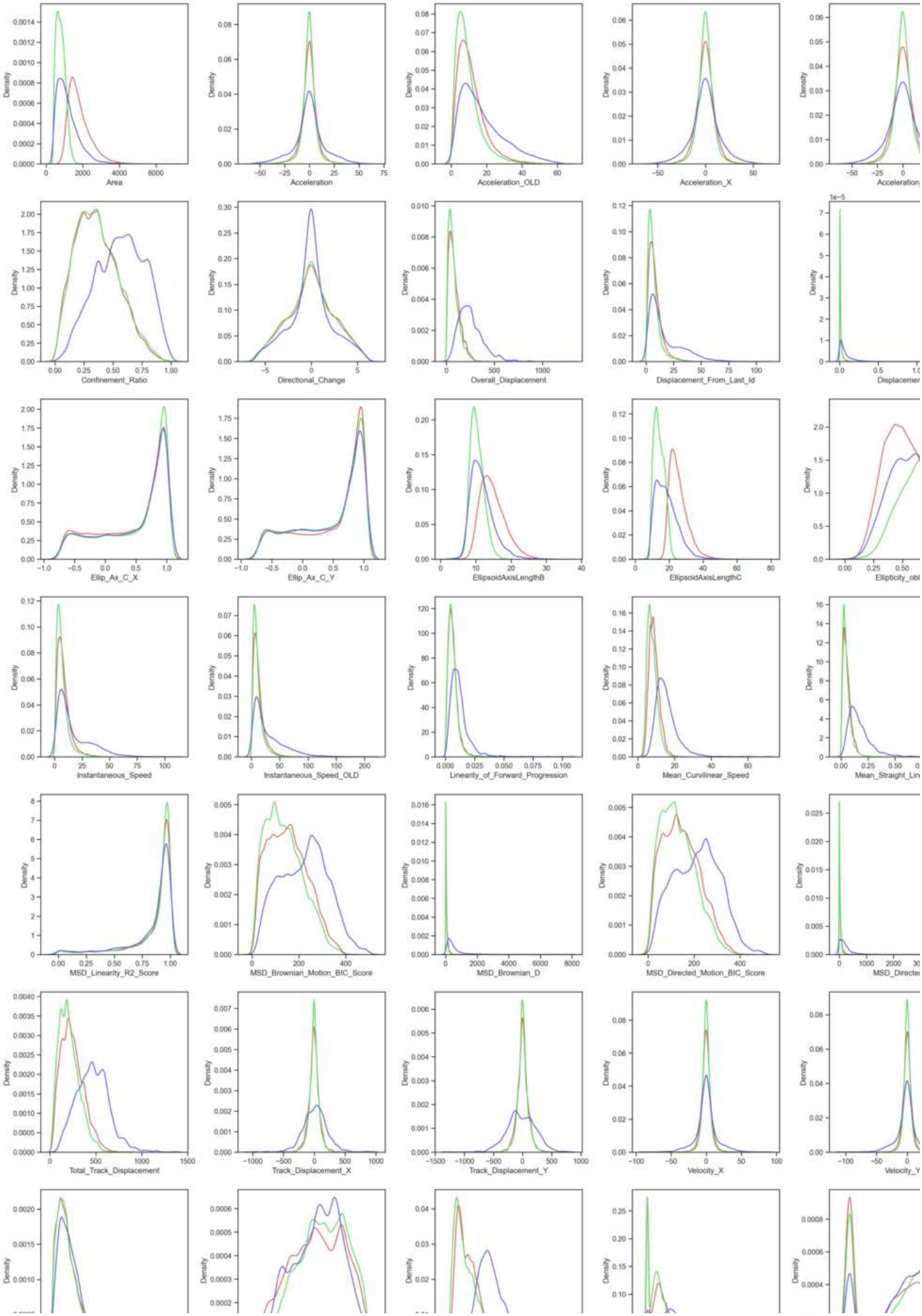


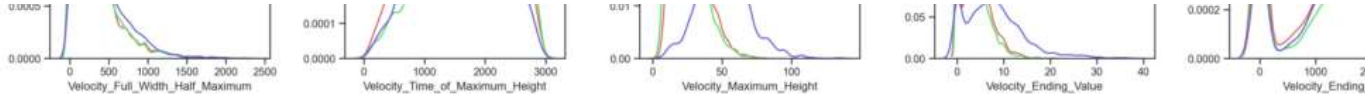
Figure 20

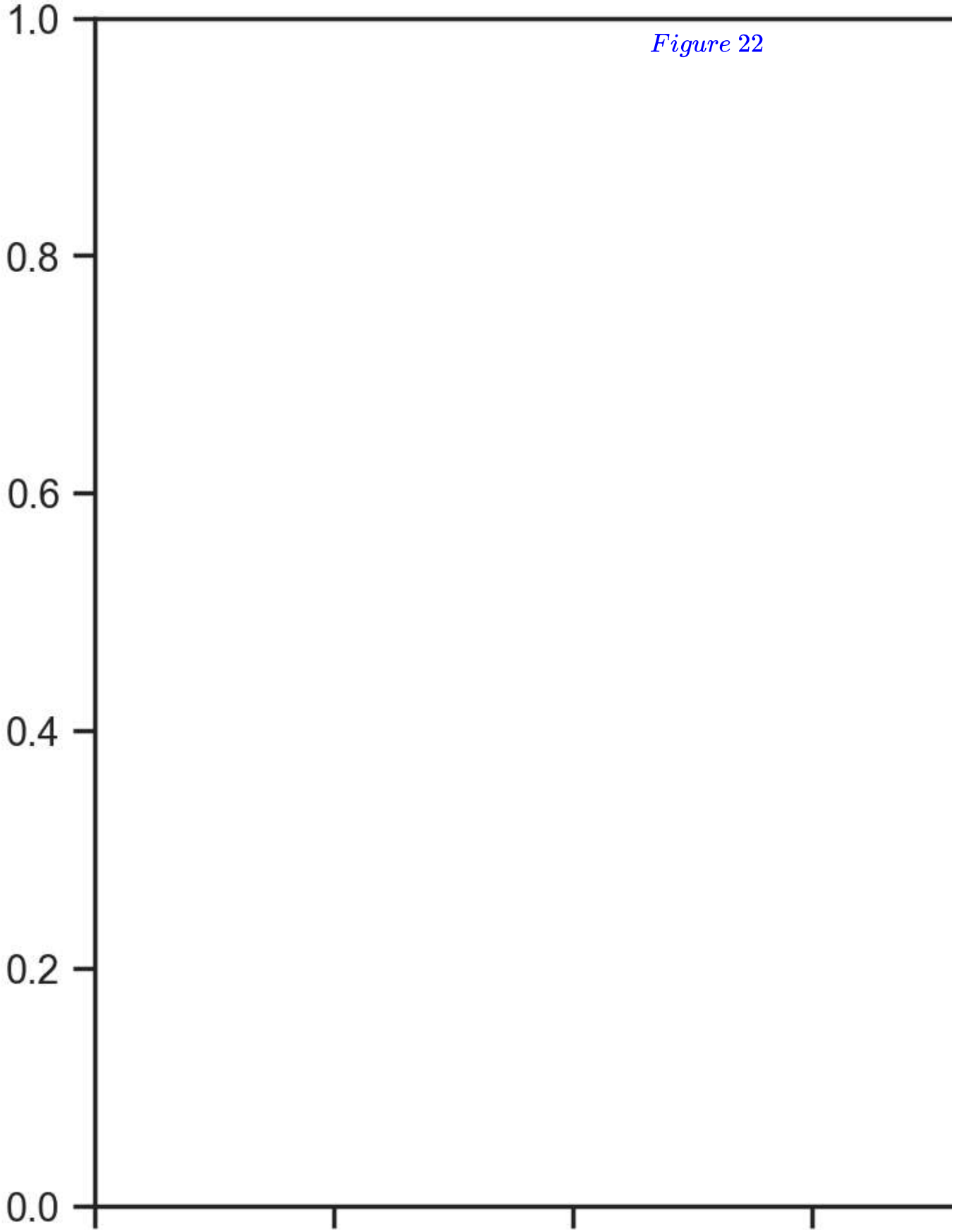


Distribution all features by groups

$Figure\ 21$


Density
Area
Acceleration
Acceleration_OLD
Acceleration_X
Acceleration
Confinement_Ratio
Directional_Change
Overall_Displacement
Displacement_From_Last_Id
Displacemer
Ellip_Ax_C_X
Ellip_Ax_C_Y
EllipsoidAxisLengthB
EllipsoidAxisLengthC
Ellipticity_obl
Instantaneous_Speed
Instantaneous_Speed_OLD
Linearity_of_Forward_Progression
Mean_Curvilinear_Speed
Mean_Straight_Lin
MSD_Linearity_R2_Score
MSD_Brownian_Motion_BIC_Score
MSD_Brownian_D
MSD_Directed_Motion_BIC_Score
MSD_Directe
Total_Track_Displacement
Track_Displacement_X
Track_Displacement_Y
Velocity_X
Velocity_Y


0.0000
0 500 1000 1500 2000 2500
Velocity_Full_Width_Half_Maximum
0.0001
0.0000
0 1000 2000 3000
Velocity_Time_of_Maximum_Height
0.00
0 50 100
Velocity_Maximum_Height
0.05
0.00
0 10 20 30 40
Velocity_Ending_Value
0.0002
0.0000
0 1000
Velocity_Ending


1.0
0.8
0.6
0.4
0.2
0.0
Figure 22

0.0 0.2 0.4 0.6

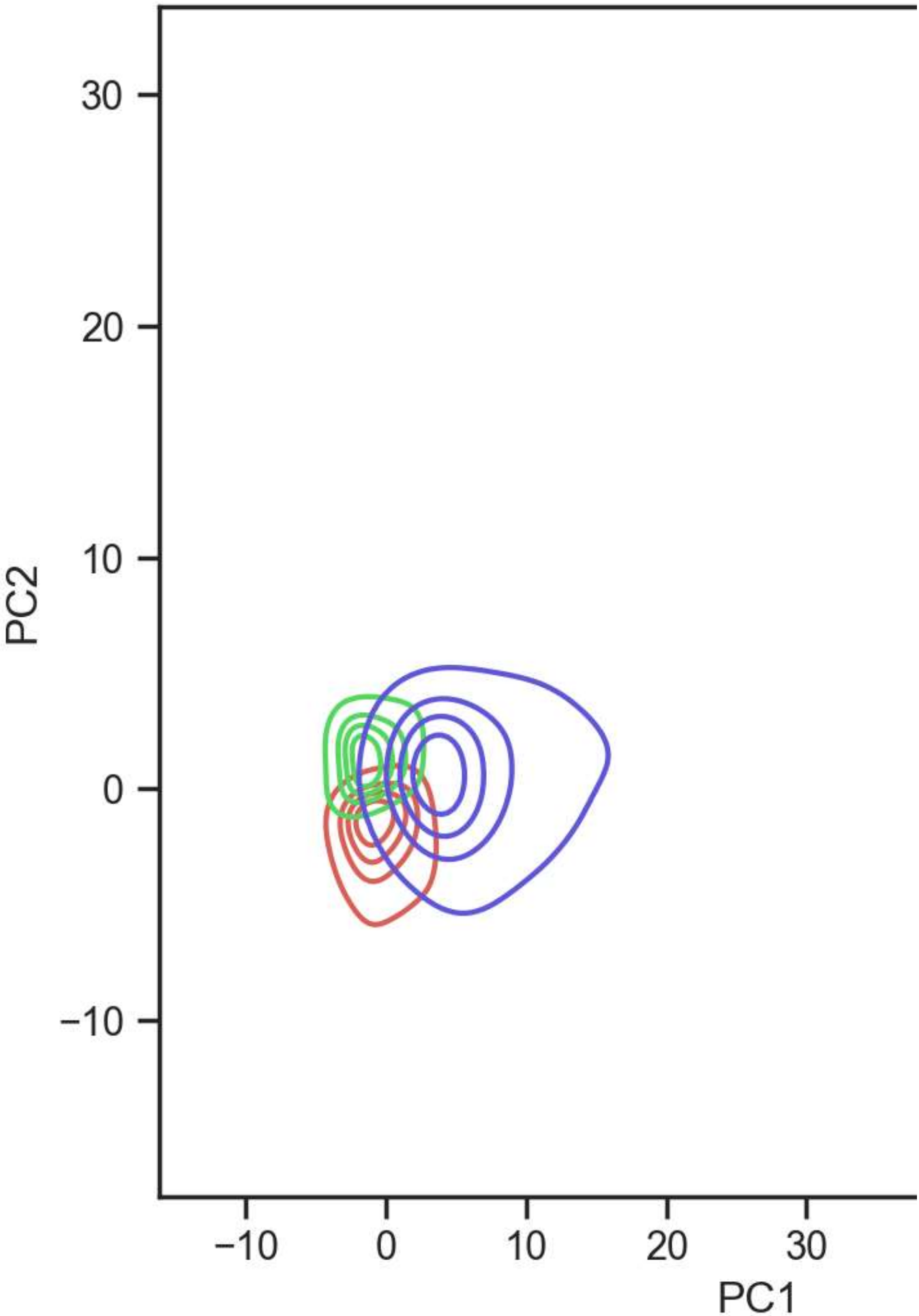
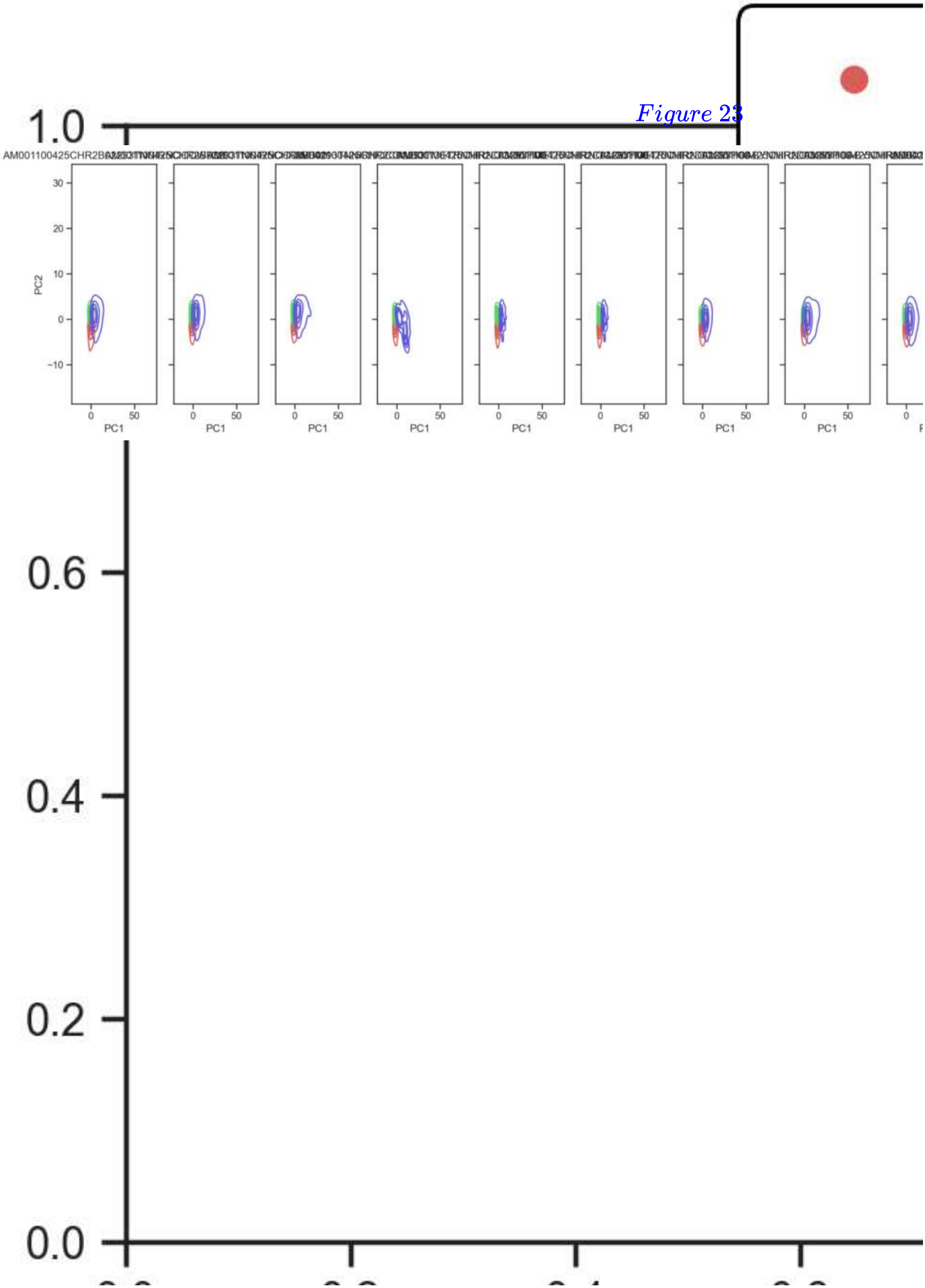

30
20
10
0
−10
PC2
−10
0
10
20
30
PC1

Figure 23



0.0 0.2 0.4 0.6

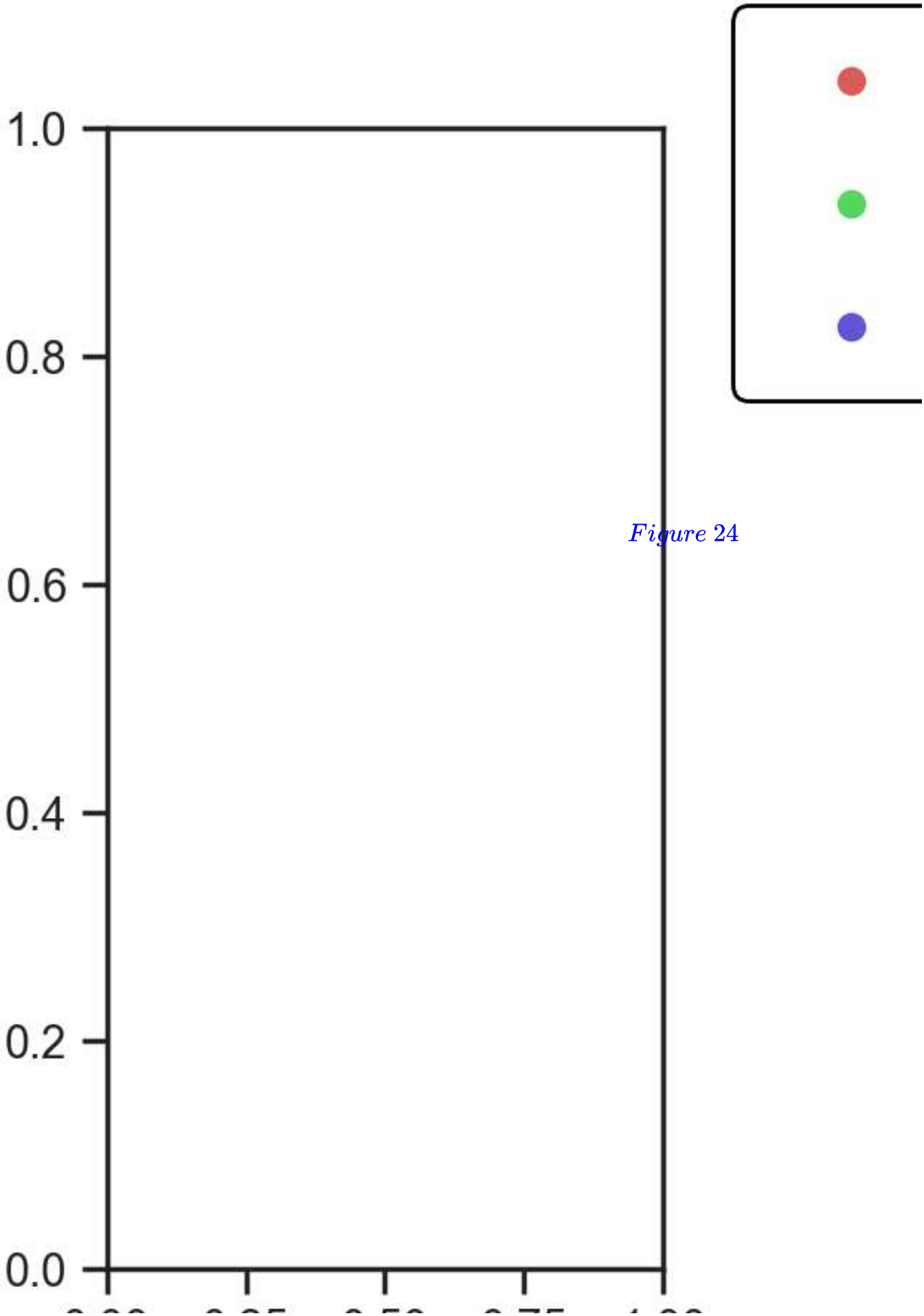
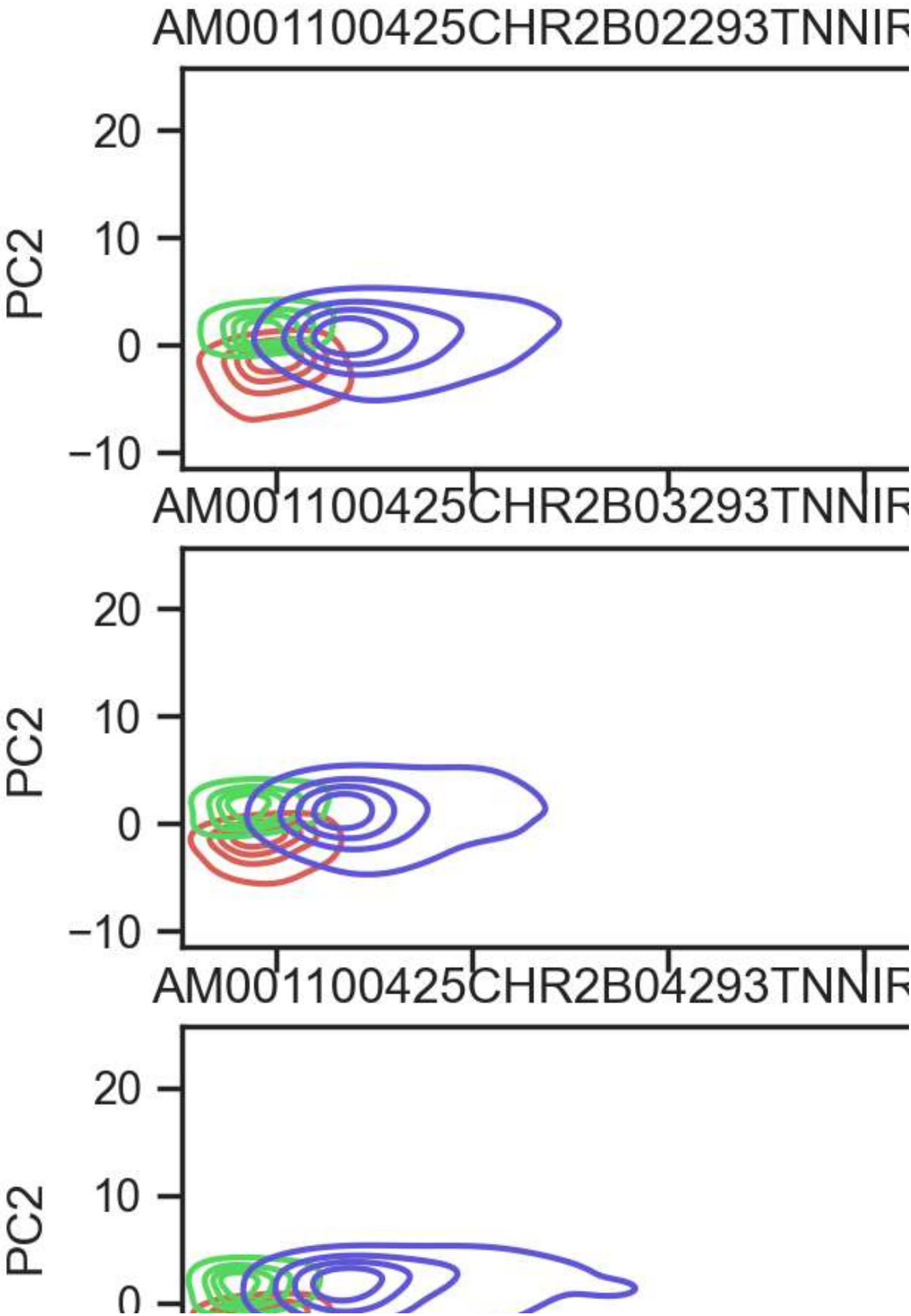
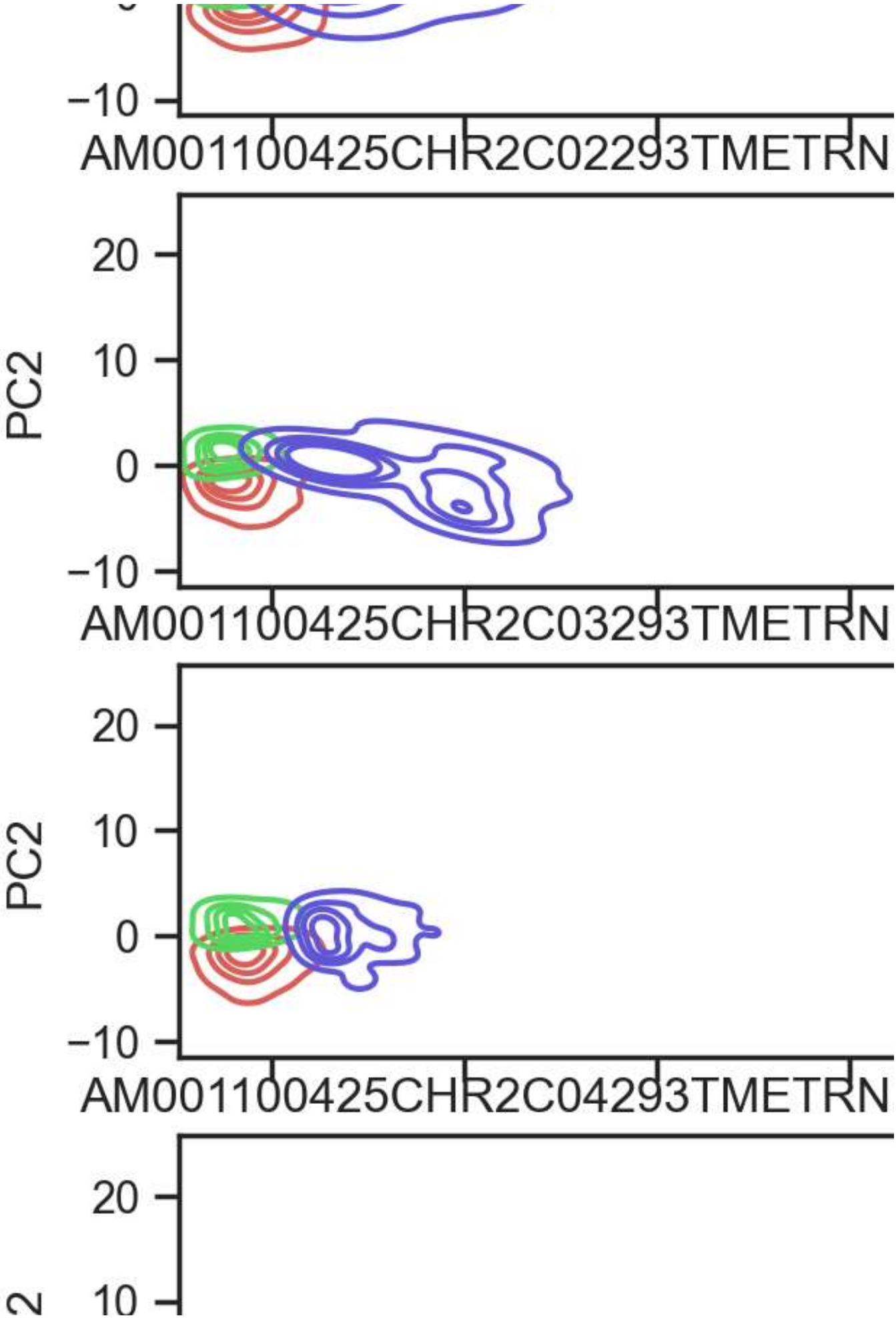
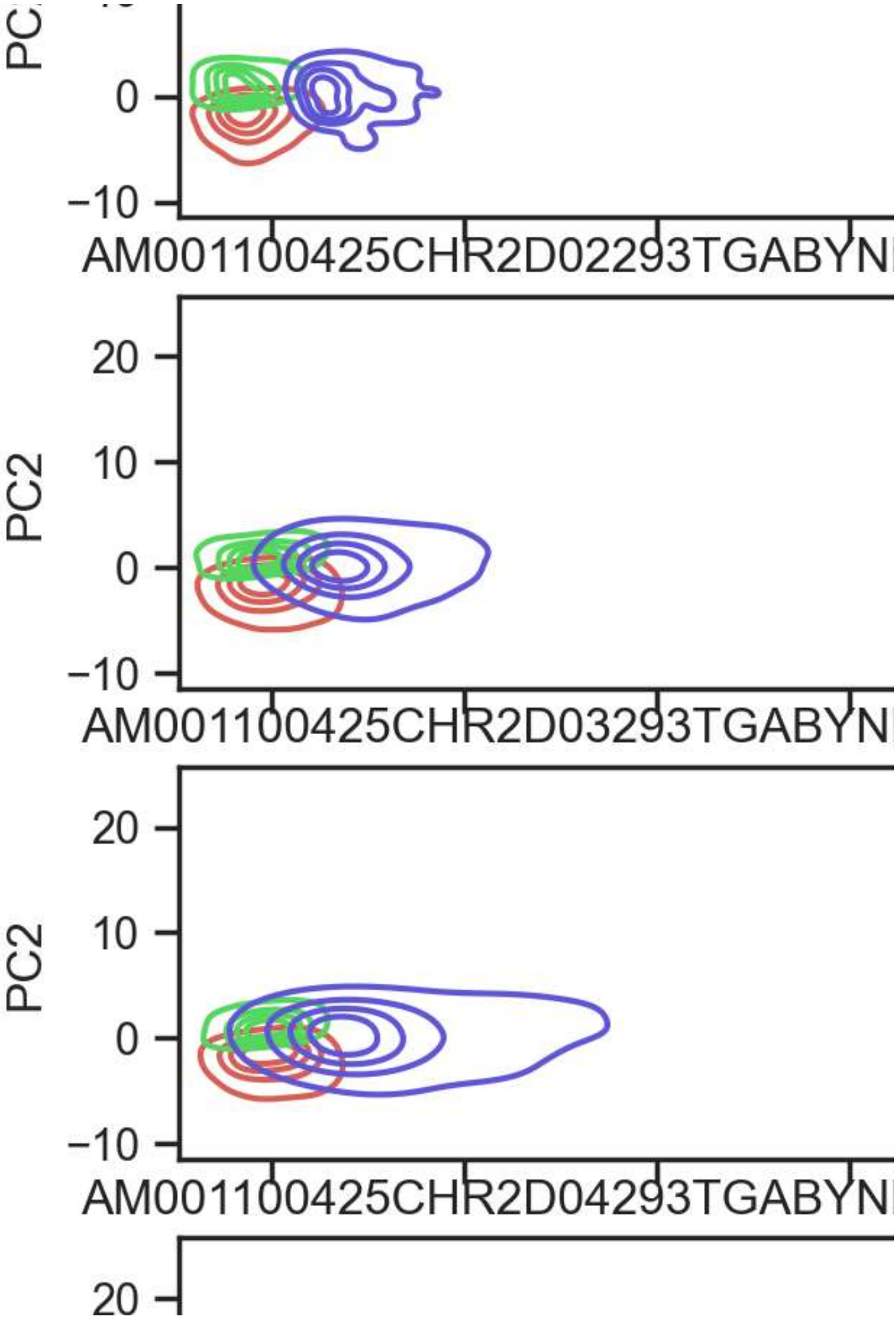


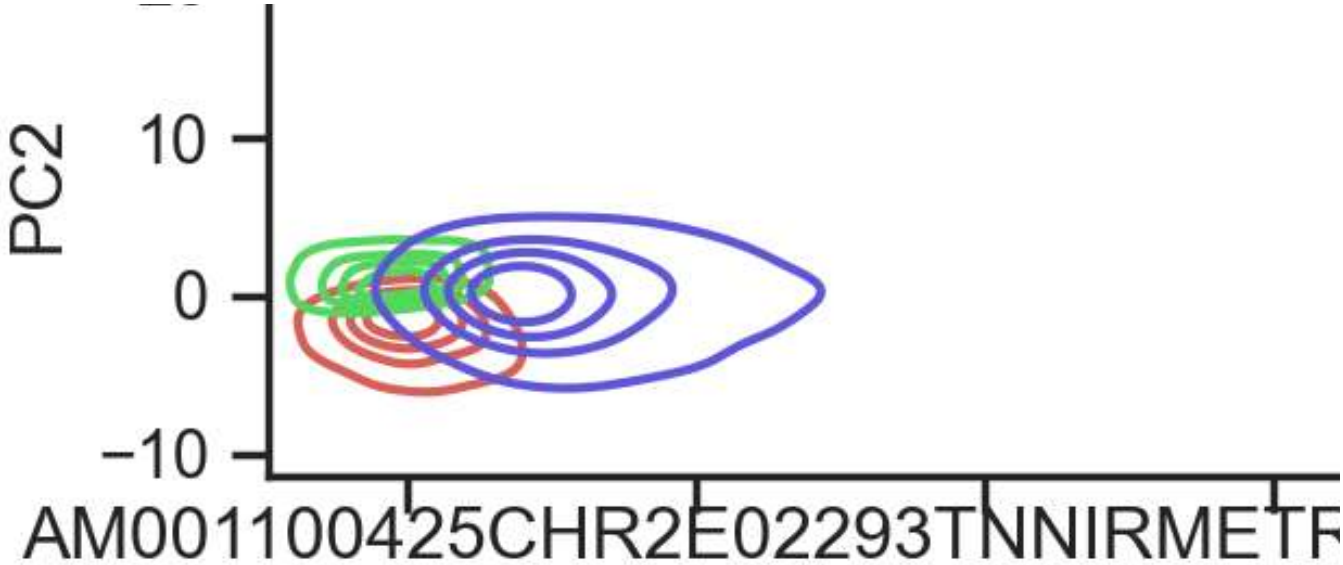
Figure 24

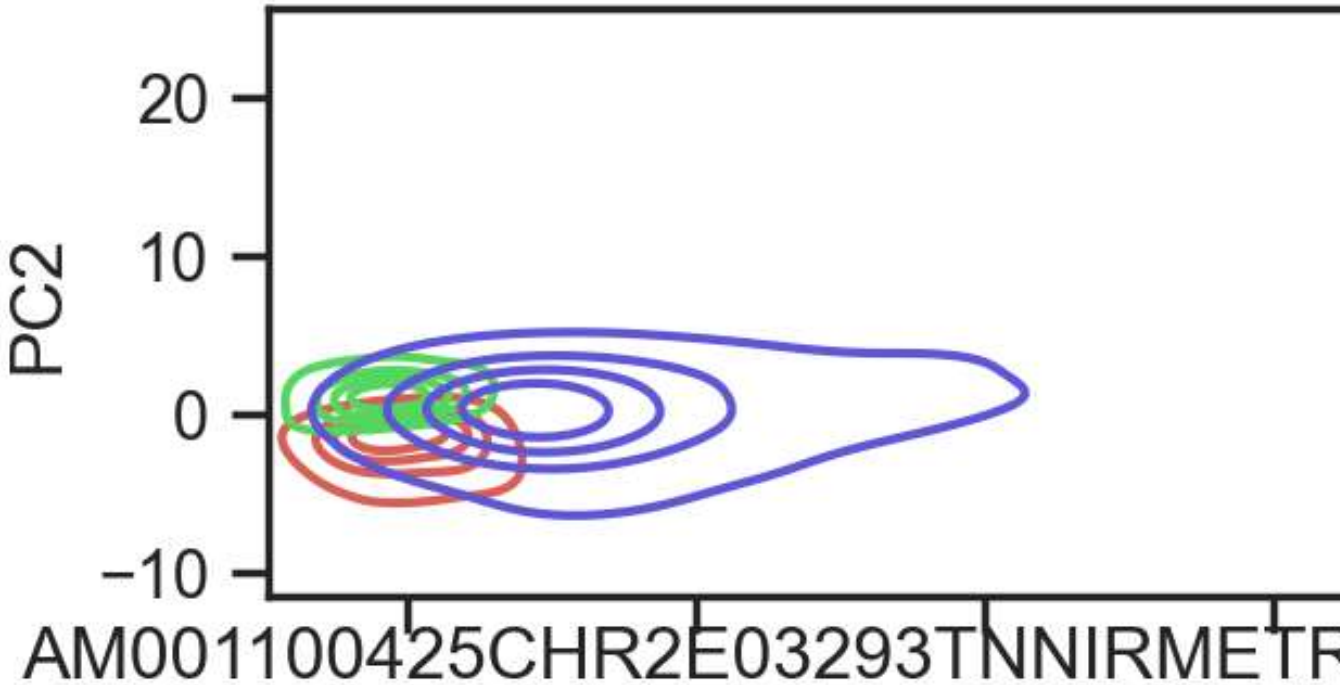
0.00 0.25 0.50 0.75 1.00

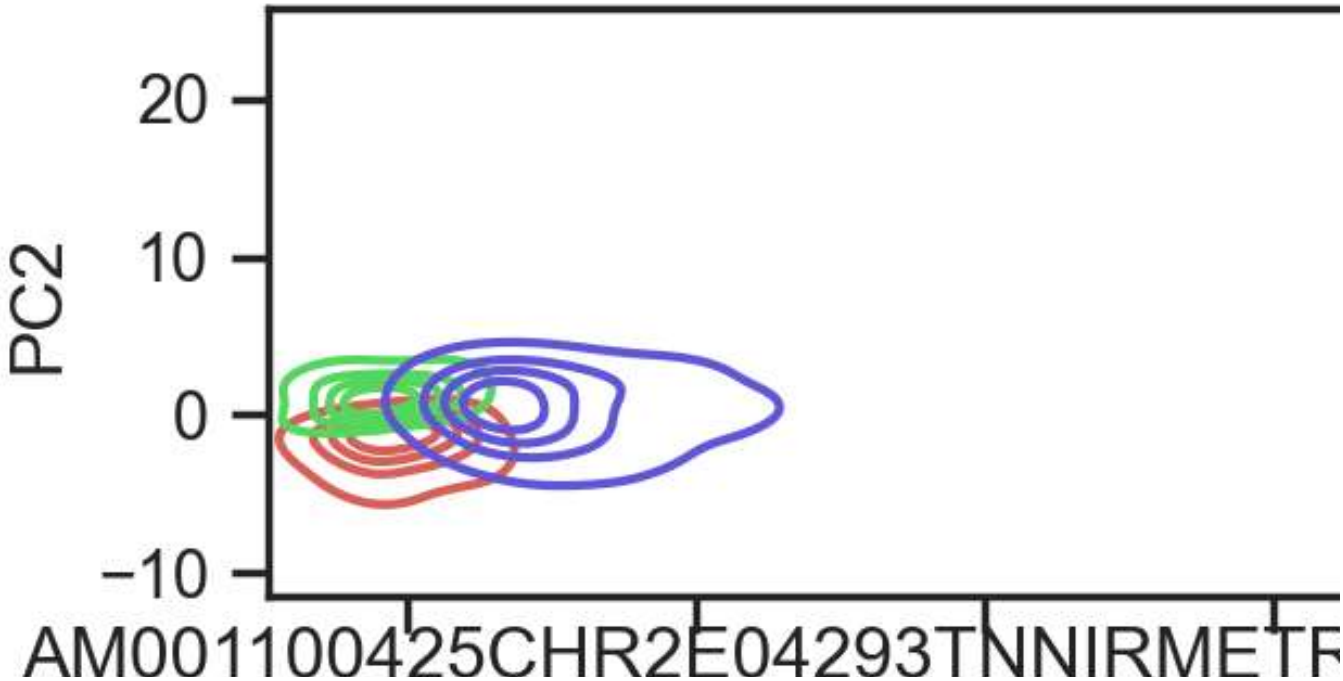

AM001100425CHR2B02293TNNIR
20
10
0
−10
PC2
AM001100425CHR2B03293TNNIR
20
10
0
−10
PC2
AM001100425CHR2B04293TNNIR
20
10
0
PC2

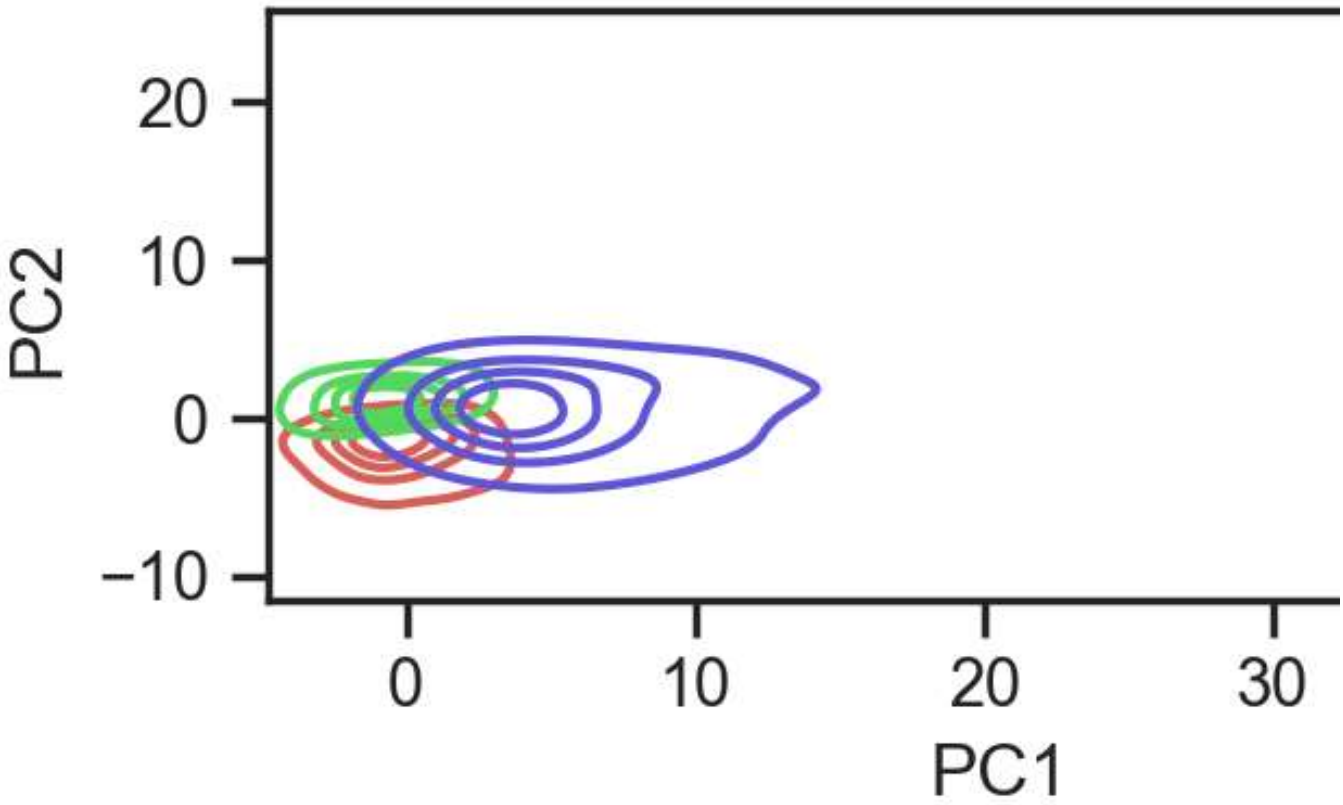

−10
AM001100425CHR2C02293TMETRN
20
10
PC2
0
−10
AM001100425CHR2C03293TMETRN
20
10
PC2
0
−10
AM001100425CHR2C04293TMETRN
20
10

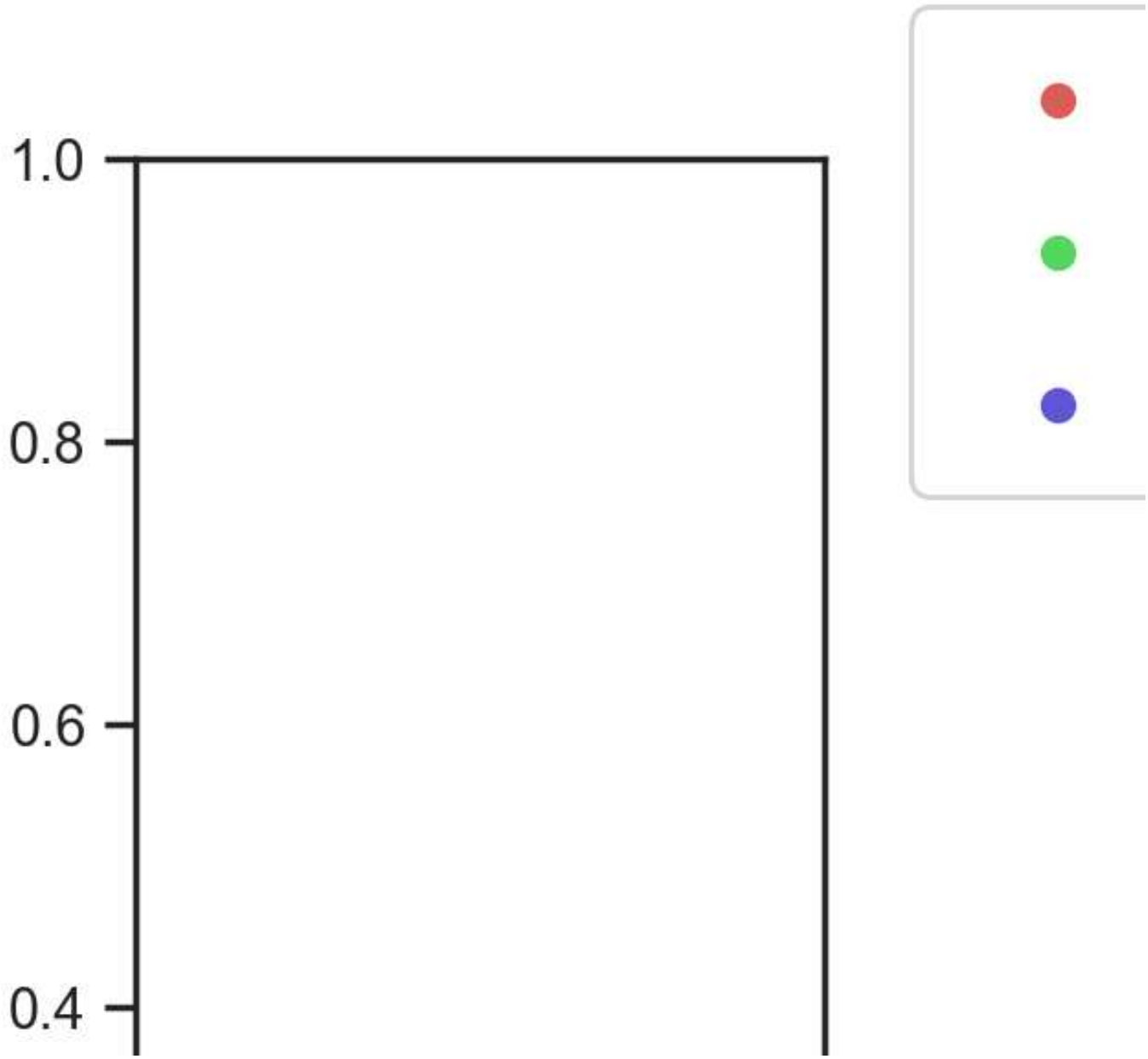

PC
0
−10
AM001100425CHR2D02293TGABYN
20
10
PC2
0
−10
AM001100425CHR2D03293TGABYN
20
10
PC2
0
−10
AM001100425CHR2D04293TGABYN
20


PC2
10
0
−10
AM001100425CHR2E02293TNNIRMETR


PC2
20
10
0
−10
AM001100425CHR2E03293TNNIRMETR


PC2
20
10
0
−10
AM001100425CHR2E04293TNNIRMETR


20
10
0
−10
PC2
0
10
20
30
PC1


1.0
0.8
0.6
0.4

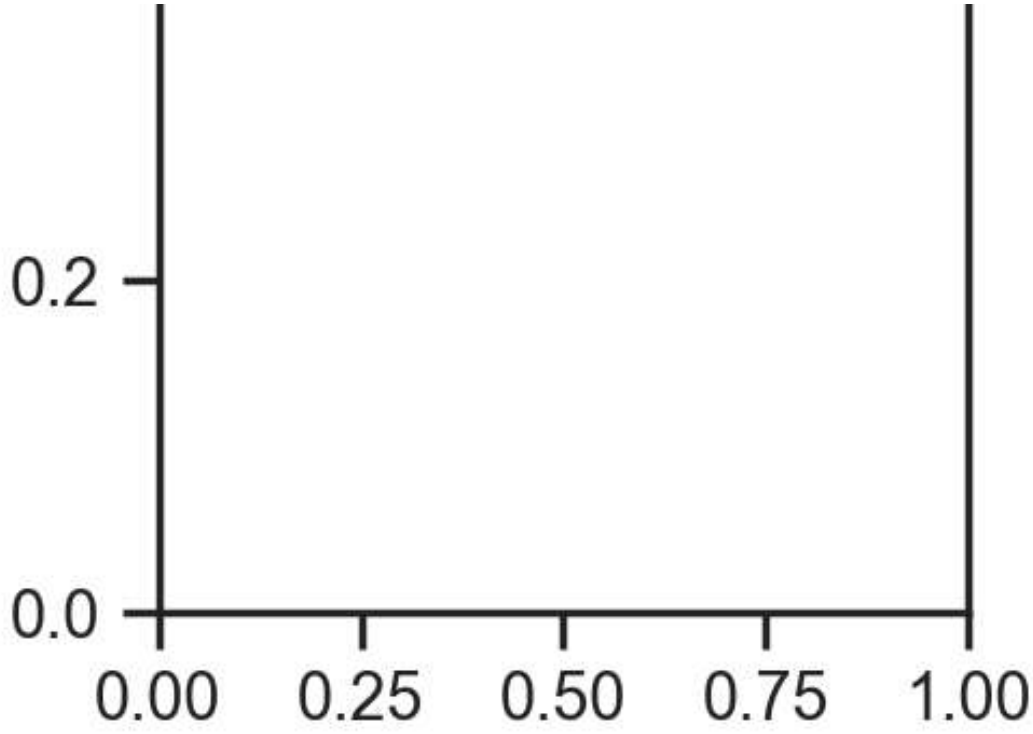


Figure 25

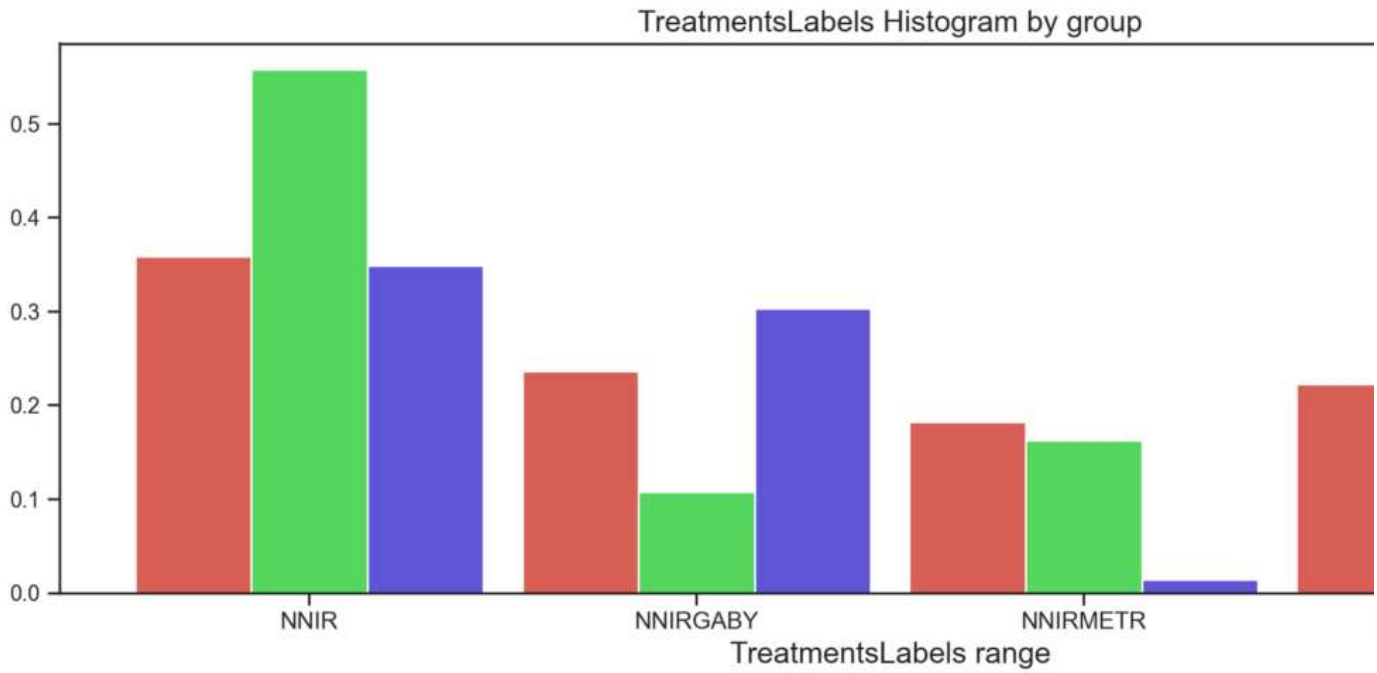
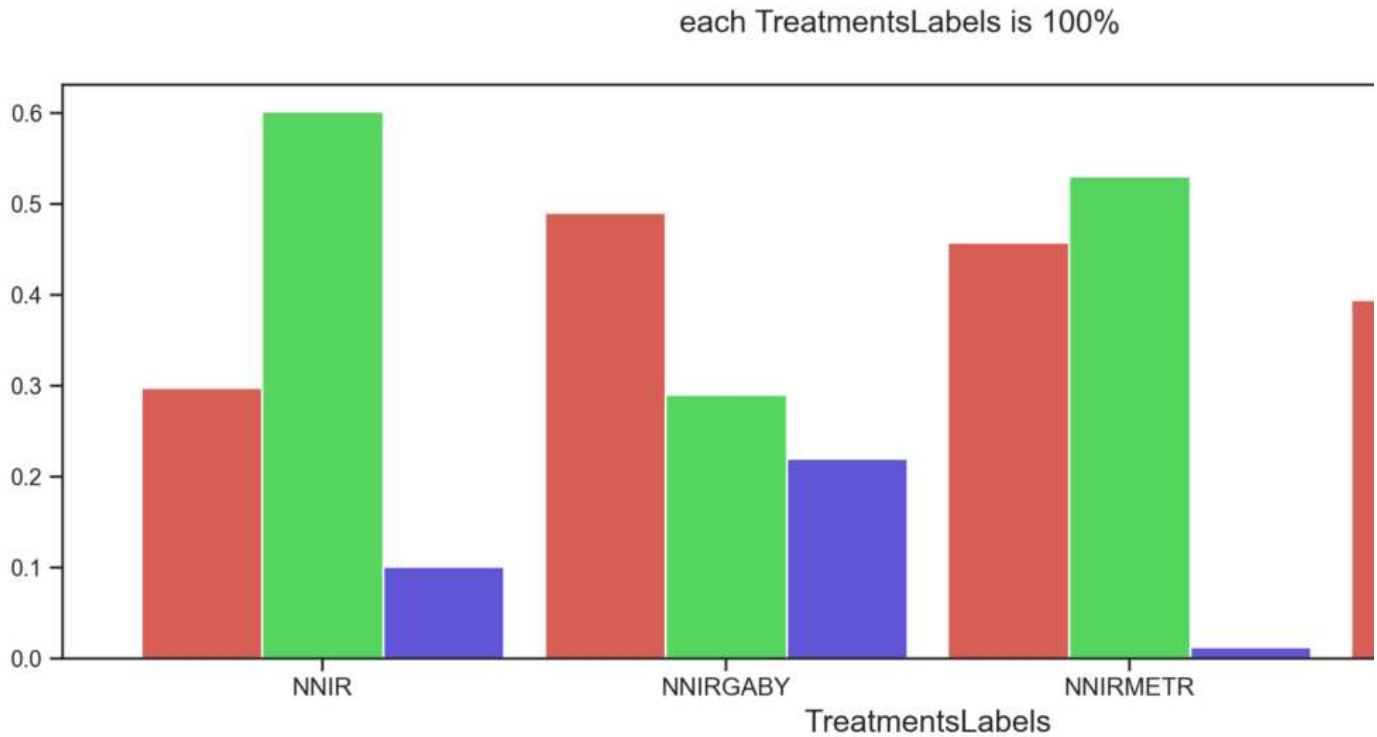


Figure 26



Treatments p-Value

```
[
  0 : "NNIR"
  1 : "NNIRGABY"
  2 : "NNIRMETR"
  3 : "NNIRMETRGABY"
]
```

NOCO Treatments

ERROR: 'NOCO'

Figure 27

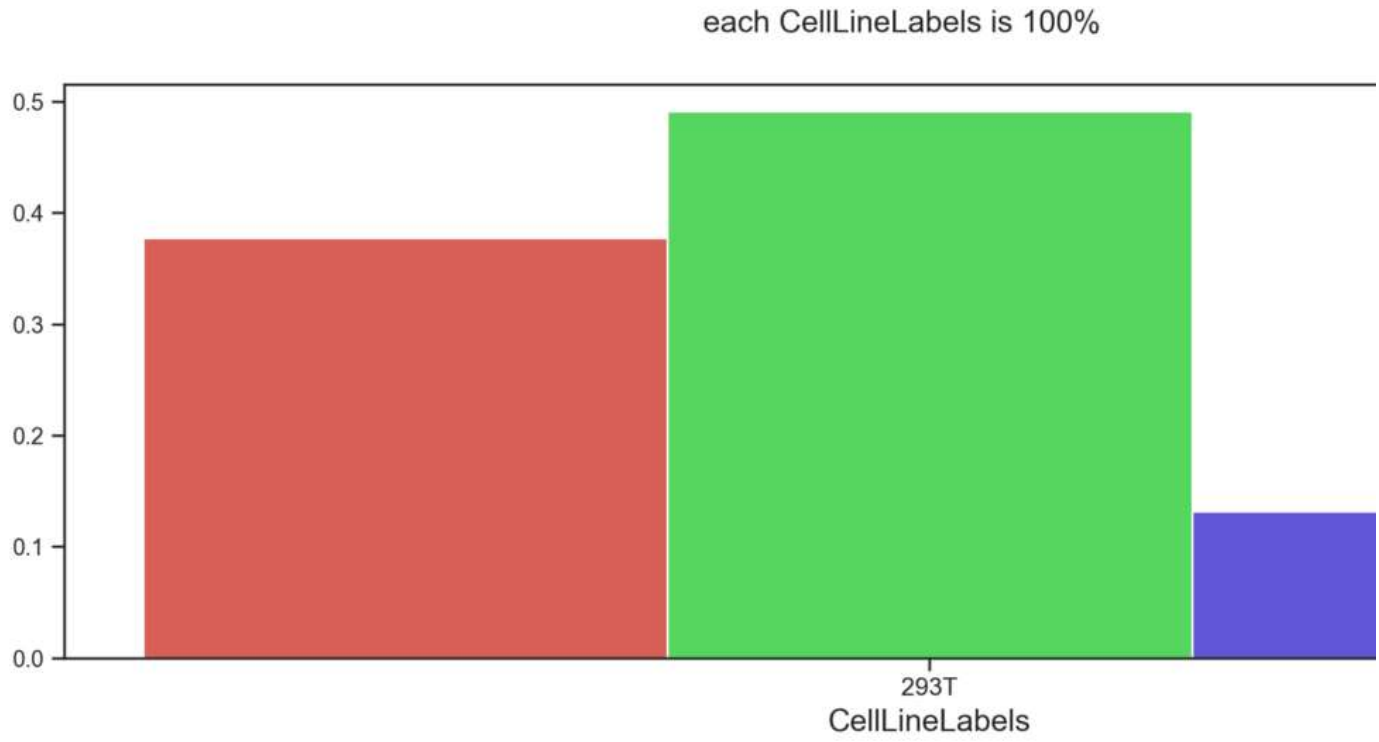
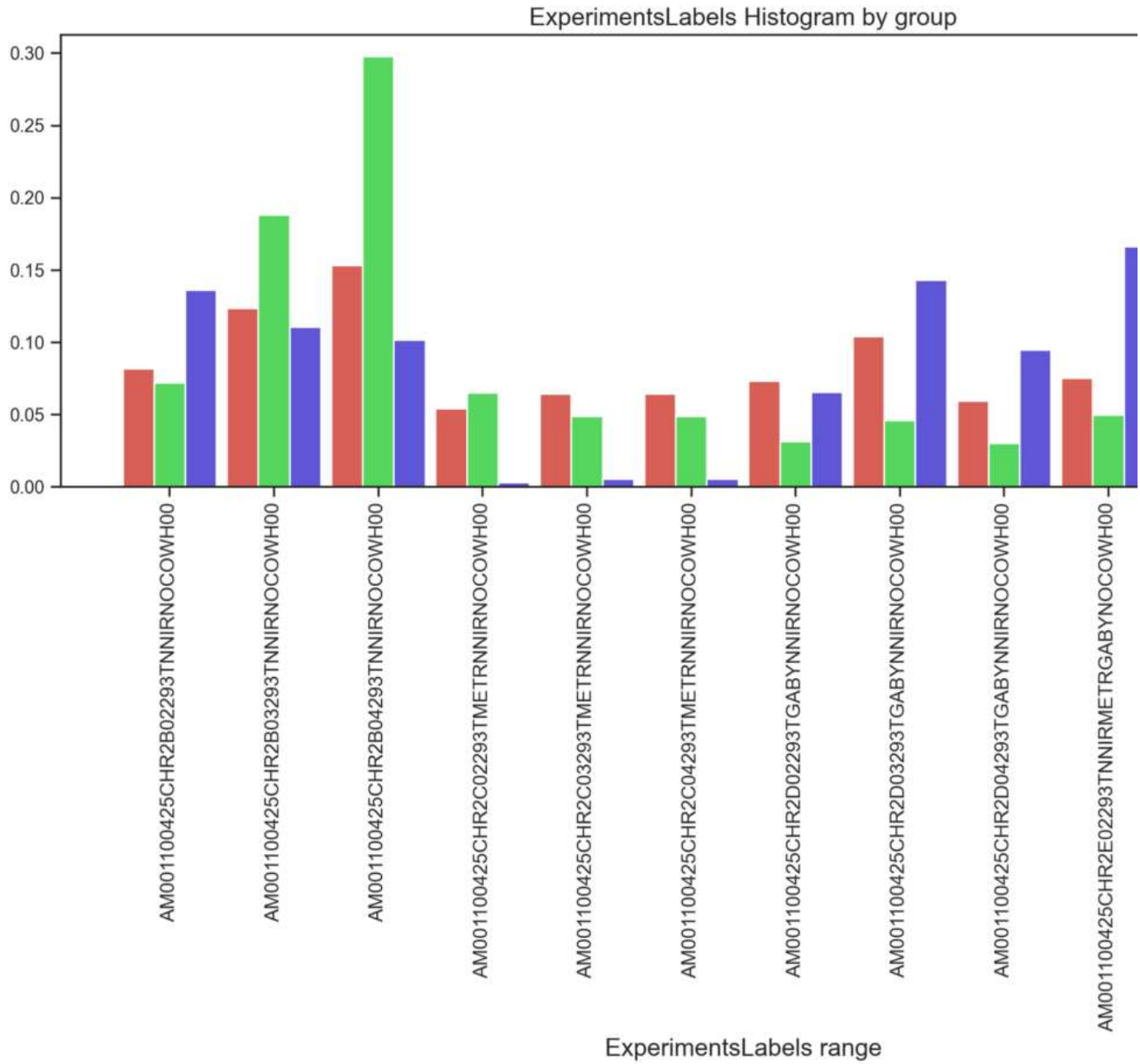

each CellLineLabels is 100%
0.5
0.4
0.3
0.2
0.1
0.0
293T
CellLineLabels

Figure 28



Experiments p-Value 'AM001100425CHR2B02293TNNIRNOCOWH00'


```
[
  0 : "AM001100425CHR2B02293TNNIRNOCOWH00"
  1 : "AM001100425CHR2B03293TNNIRNOCOWH00"
  2 : "AM001100425CHR2B04293TNNIRNOCOWH00"
  3 : "AM001100425CHR2C02293TMETRNNIRNOCOWH00"
  4 : "AM001100425CHR2C03293TMETRNNIRNOCOWH00"
  5 : "AM001100425CHR2C04293TMETRNNIRNOCOWH00"
  6 : "AM001100425CHR2D02293TGABYNNIRNOCOWH00"
  7 : "AM001100425CHR2D03293TGABYNNIRNOCOWH00"
  8 : "AM001100425CHR2D04293TGABYNNIRNOCOWH00"
  9 : "AM001100425CHR2E02293TNNIRMETRGABYNOCOWH00"
  10 : "AM001100425CHR2E03293TNNIRMETRGABYNOCOWH00"
  11 : "AM001100425CHR2E04293TNNIRMETRGABYNOCOWH00"
]
```


'AM001100425CHR2B02293TNNIRNOCOWH00' Experiment

ERROR: "'AM001100425CHR2B02293TNNIRNOCOWH00'"

Figure 29

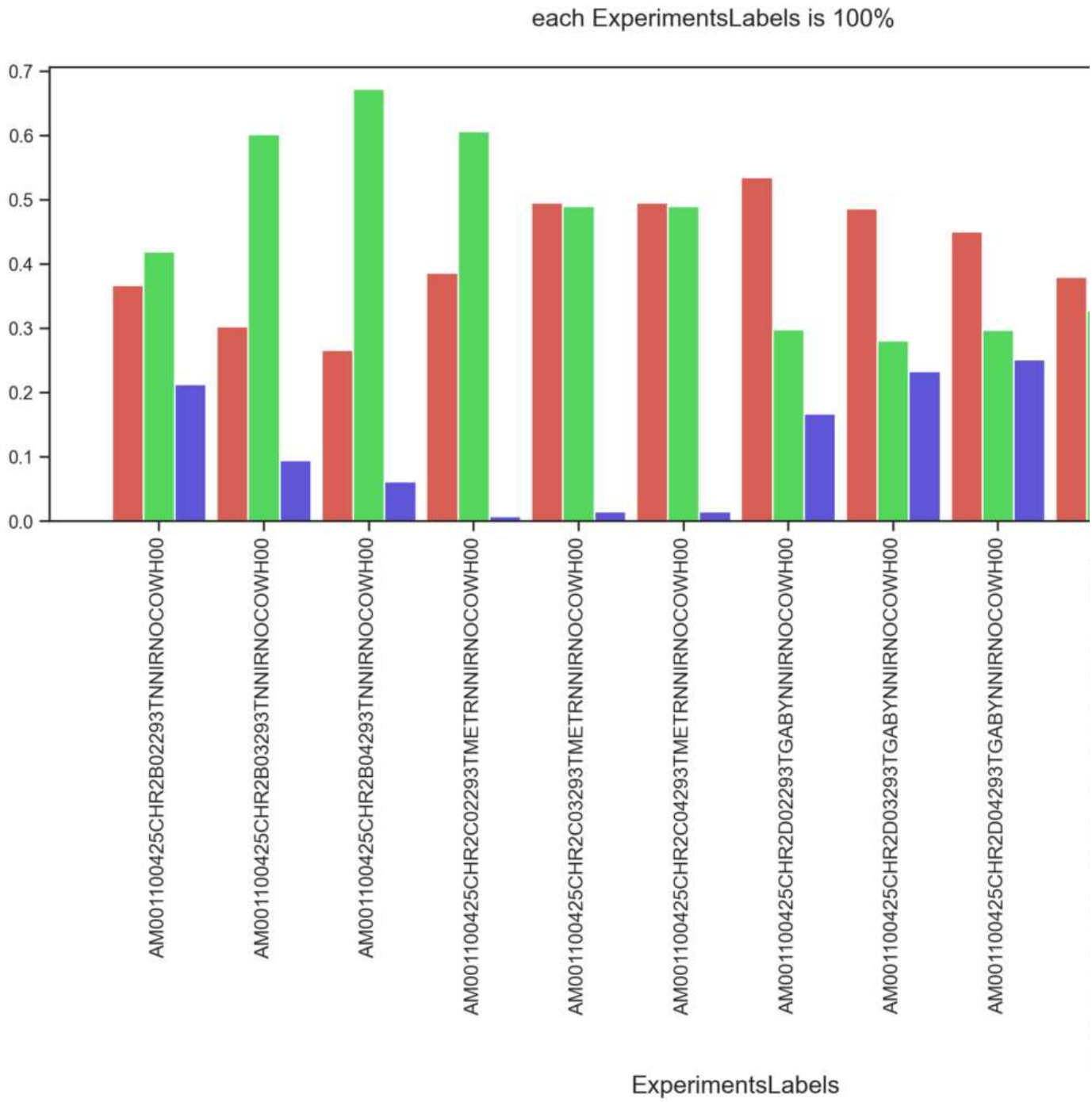
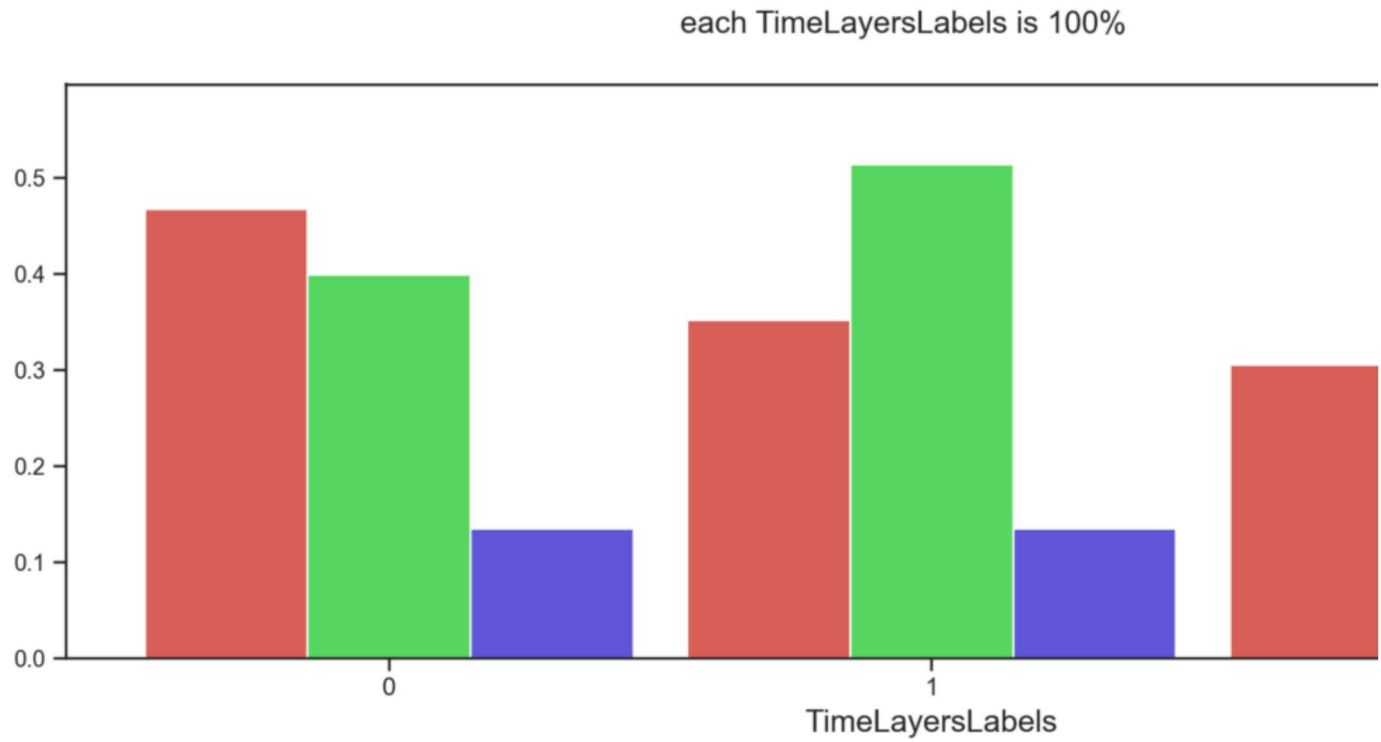


Figure 30



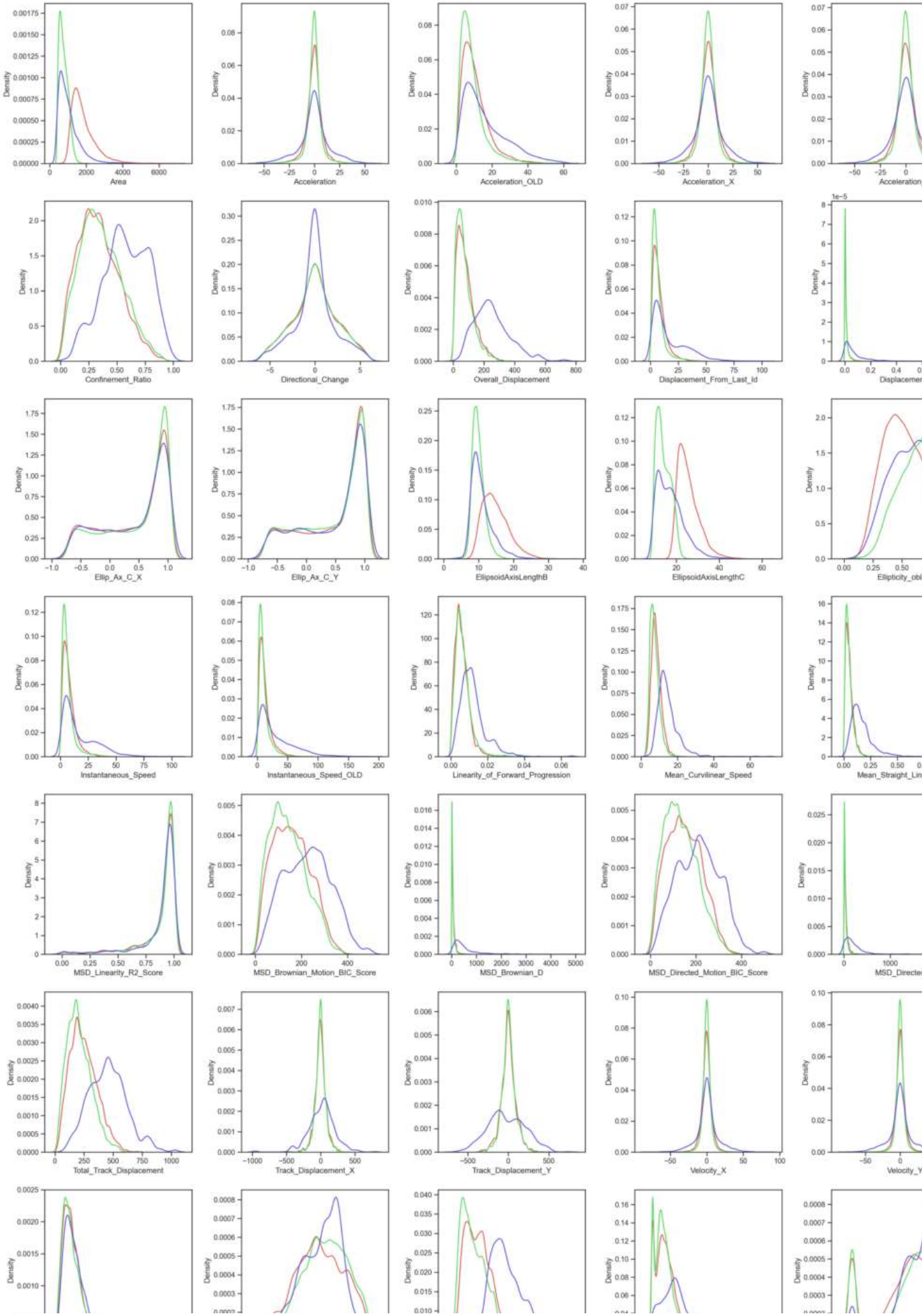

```
[
  0 : "0"
  1 : "1"
  2 : "2"
]
```

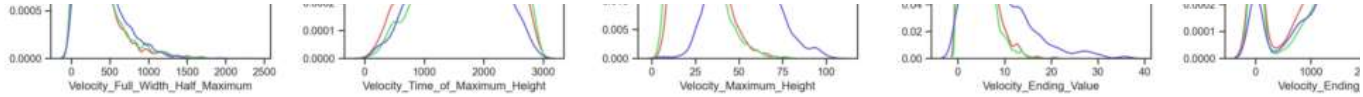
0 TimeLayers

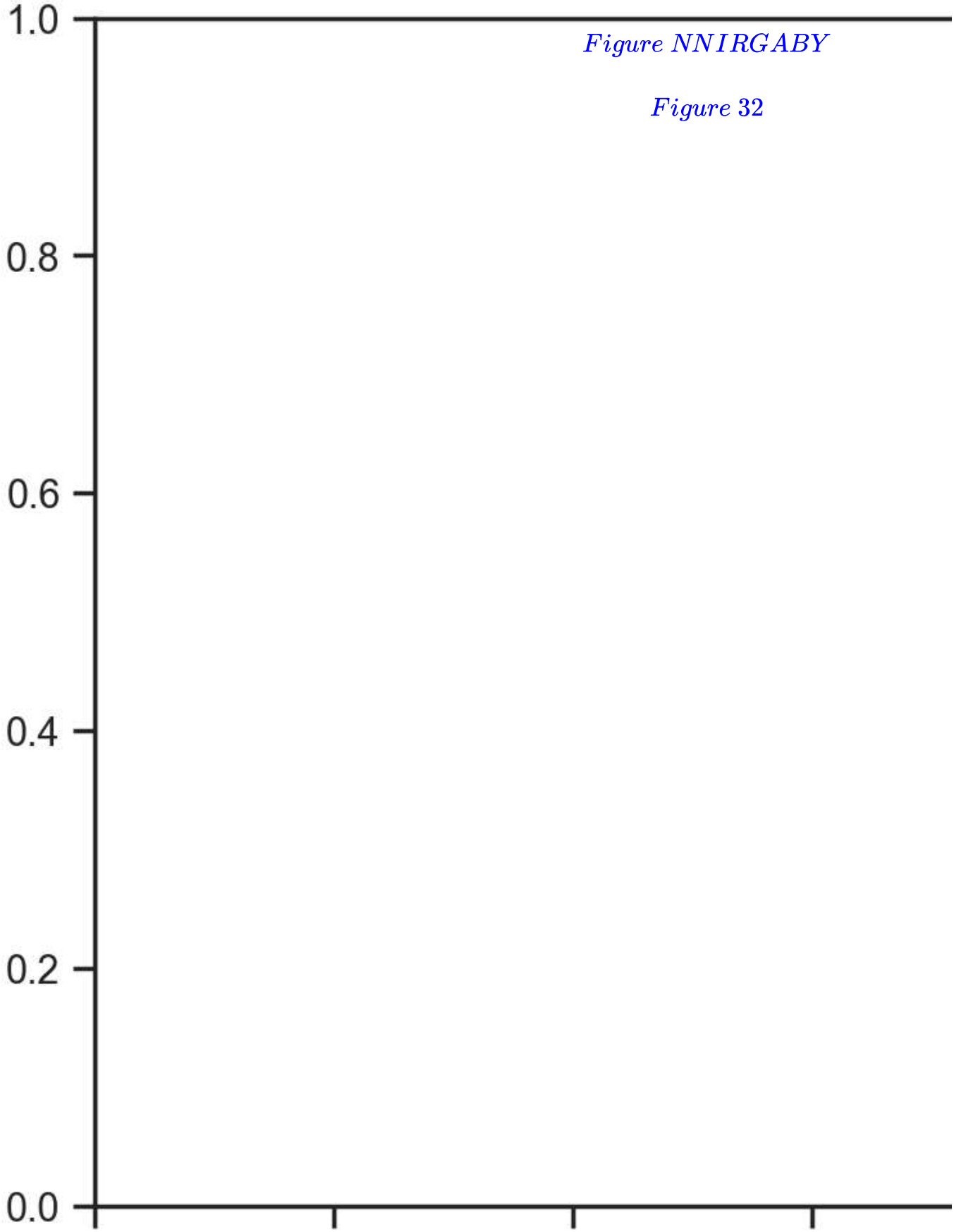
	0	1	2	All	N	Pearson Chi-square (2.0) =	p-value =	Cramer's V =
1	35.2	51.39	13.42	100	36,877	1,150.9475	0	0.1238
2	30.52	56.87	12.61	100	34,731	2,326.2219	0	0.1786
0	46.7	39.87	13.43	100	38,179	None	None	None
All	None	None	None	None	109,787	None	None	None

Figure NNIR

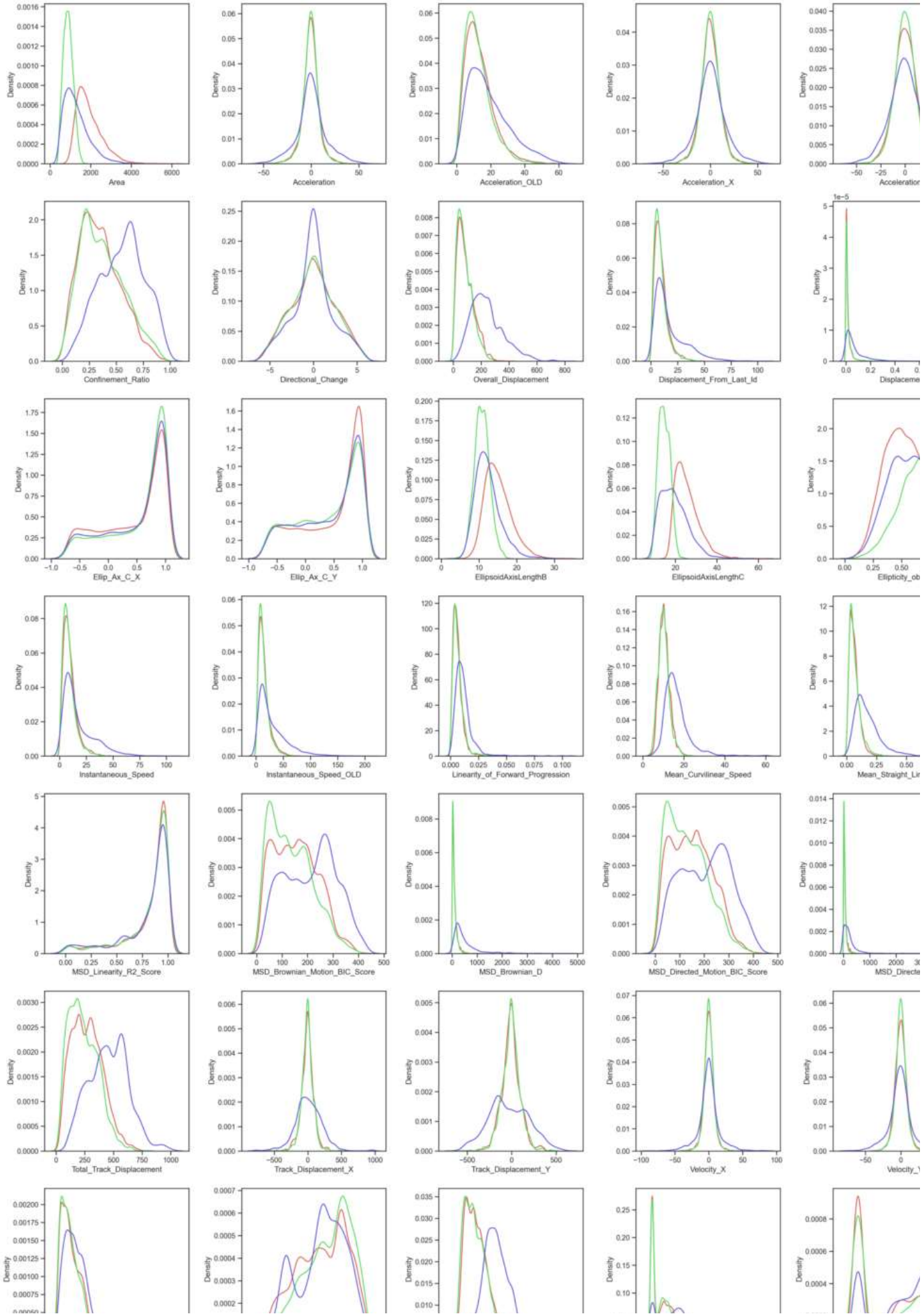
Figure 31

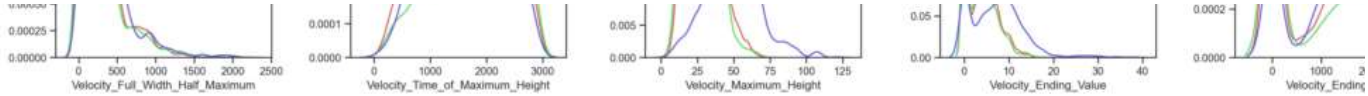

Area
Acceleration
Acceleration_OLD
Acceleration_X
Acceleration
Confinement_Ratio
Directional_Change
Overall_Displacement
Displacement_From_Last_Id
Displacemer
Ellip_Ax_C_X
Ellip_Ax_C_Y
EllipsoidAxisLengthB
EllipsoidAxisLengthC
Ellipticity_obl
Instantaneous_Speed
Instantaneous_Speed_OLD
Linearity_of_Forward_Progression
Mean_Curvilinear_Speed
Mean_Straight_Lin
MSD_Linearity_R2_Score
MSD_Brownian_Motion_BIC_Score
MSD_Brownian_D
MSD_Directed_Motion_BIC_Score
MSD_Directe
Total_Track_Displacement
Track_Displacement_X
Track_Displacement_Y
Velocity_X
Velocity_Y
Density


0.0005
0.0000
0 500 1000 1500 2000 2500
Velocity_Full_Width_Half_Maximum
0.0001
0.0000
0 1000 2000 3000
Velocity_Time_of_Maximum_Height
0.005
0.000
0 25 50 75 100
Velocity_Maximum_Height
0.02
0.00
0 10 20 30 40
Velocity_Ending_Value
0.0001
0.0000
0 1000
Velocity_Ending


1.0
0.8
0.6
0.4
0.2
0.0
Figure NNIRGABY
Figure 32

0.0 0.2 0.4 0.6


Density
Area
Acceleration
Acceleration_OLD
Acceleration_X
Confinement_Ratio
Directional_Change
Overall_Displacement
Displacement_From_Last_Id
Ellip_Ax_C_X
Ellip_Ax_C_Y
EllipsoidAxisLengthB
EllipsoidAxisLengthC
Instantaneous_Speed
Instantaneous_Speed_OLD
Linearity_of_Forward_Progression
Mean_Curvilinear_Speed
MSD_Linearity_R2_Score
MSD_Brownian_Motion_BIC_Score
MSD_Brownian_D
MSD_Directed_Motion_BIC_Score
Total_Track_Displacement
Track_Displacement_X
Track_Displacement_Y
Velocity_X


0.00025
0.00000
0 500 1000 1500 2000 2500
Velocity_Full_Width_Half_Maximum
0.0001
0.0000
0 1000 2000 3000
Velocity_Time_of_Maximum_Height
0.005
0.000
0 25 50 75 100 125
Velocity_Maximum_Height
0.05
0.00
0 10 20 30 40
Velocity_Ending_Value
0.0002
0.0000
0 1000

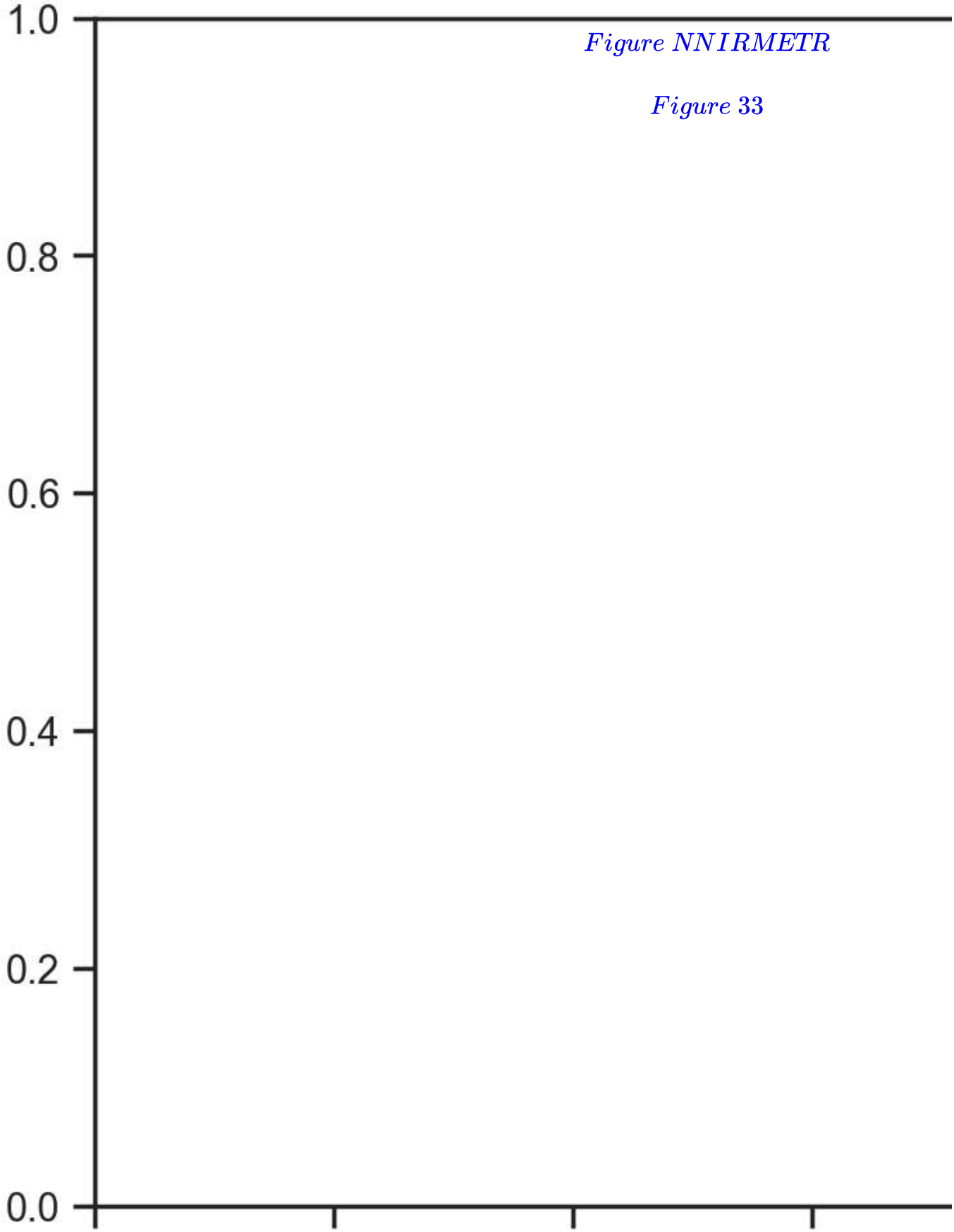
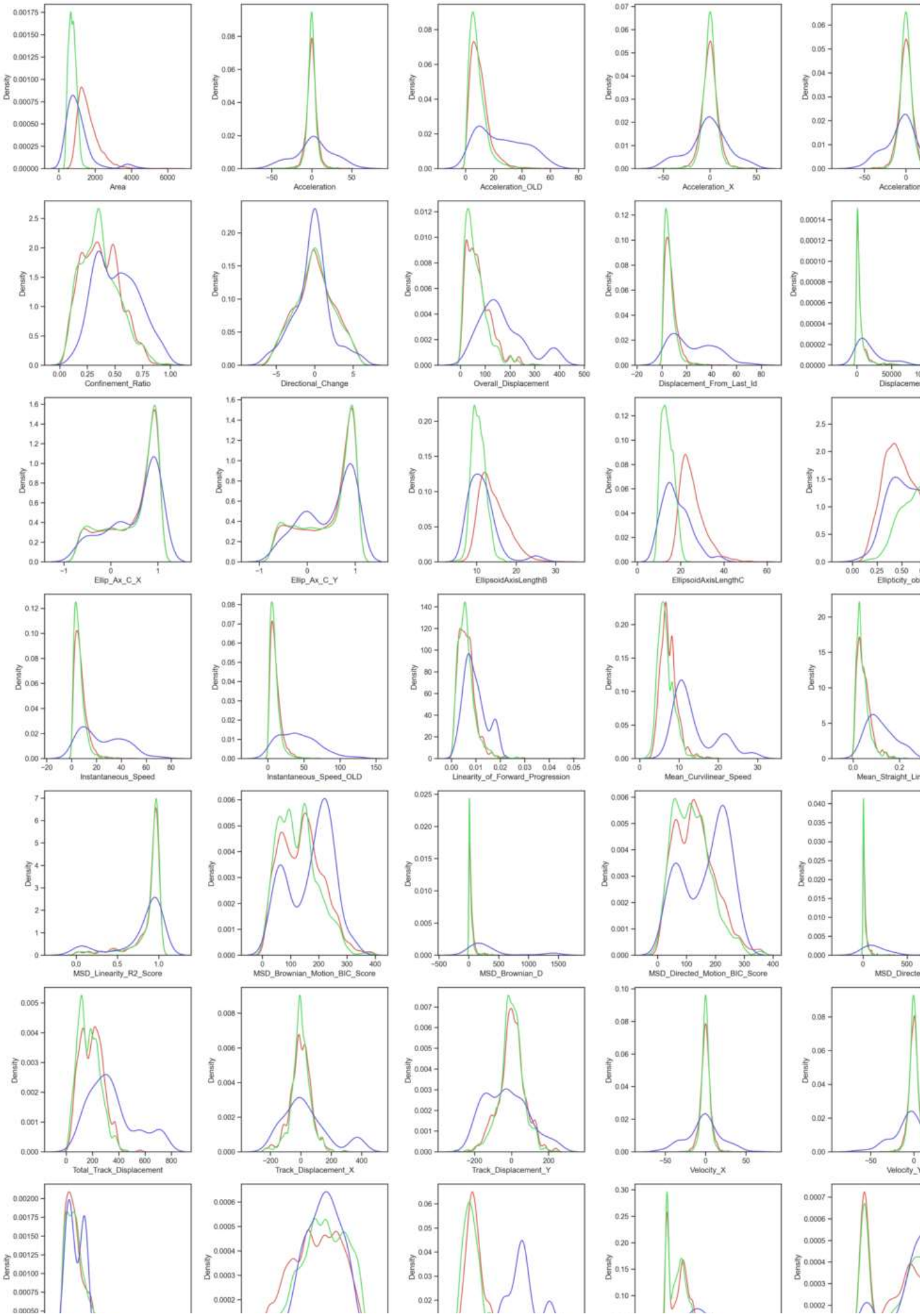
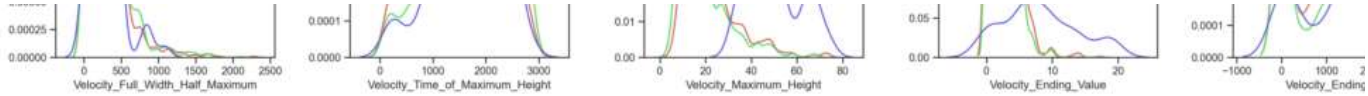


Figure NNIRMETR

Figure **33**

0.0 0.2 0.4 0.6


Density
Area
Acceleration
Acceleration_OLD
Acceleration_X
Acceleration
Confinement_Ratio
Directional_Change
Overall_Displacement
Displacement_From_Last_Id
Displaceme
Ellip_Ax_C_X
Ellip_Ax_C_Y
EllipsoidAxisLengthB
EllipsoidAxisLengthC
Ellipticity_ob
Instantaneous_Speed
Instantaneous_Speed_OLD
Linearity_of_Forward_Progression
Mean_Curvilinear_Speed
Mean_Straight_Lin
MSD_Linearity_R2_Score
MSD_Brownian_Motion_BIC_Score
MSD_Brownian_D
MSD_Directed_Motion_BIC_Score
MSD_Directe
Total_Track_Displacement
Track_Displacement_X
Track_Displacement_Y
Velocity_X
Velocity_Y


0.00025
0.00000
0 500 1000 1500 2000 2500
Velocity_Full_Width_Half_Maximum
0.0001
0.0000
0 1000 2000 3000
Velocity_Time_of_Maximum_Height
0.01
0.00
0 20 40 60 80
Velocity_Maximum_Height
0.05
0.00
0 10 20
Velocity_Ending_Value
0.0001
0.0000
−1000 0 1000
Velocity_Ending

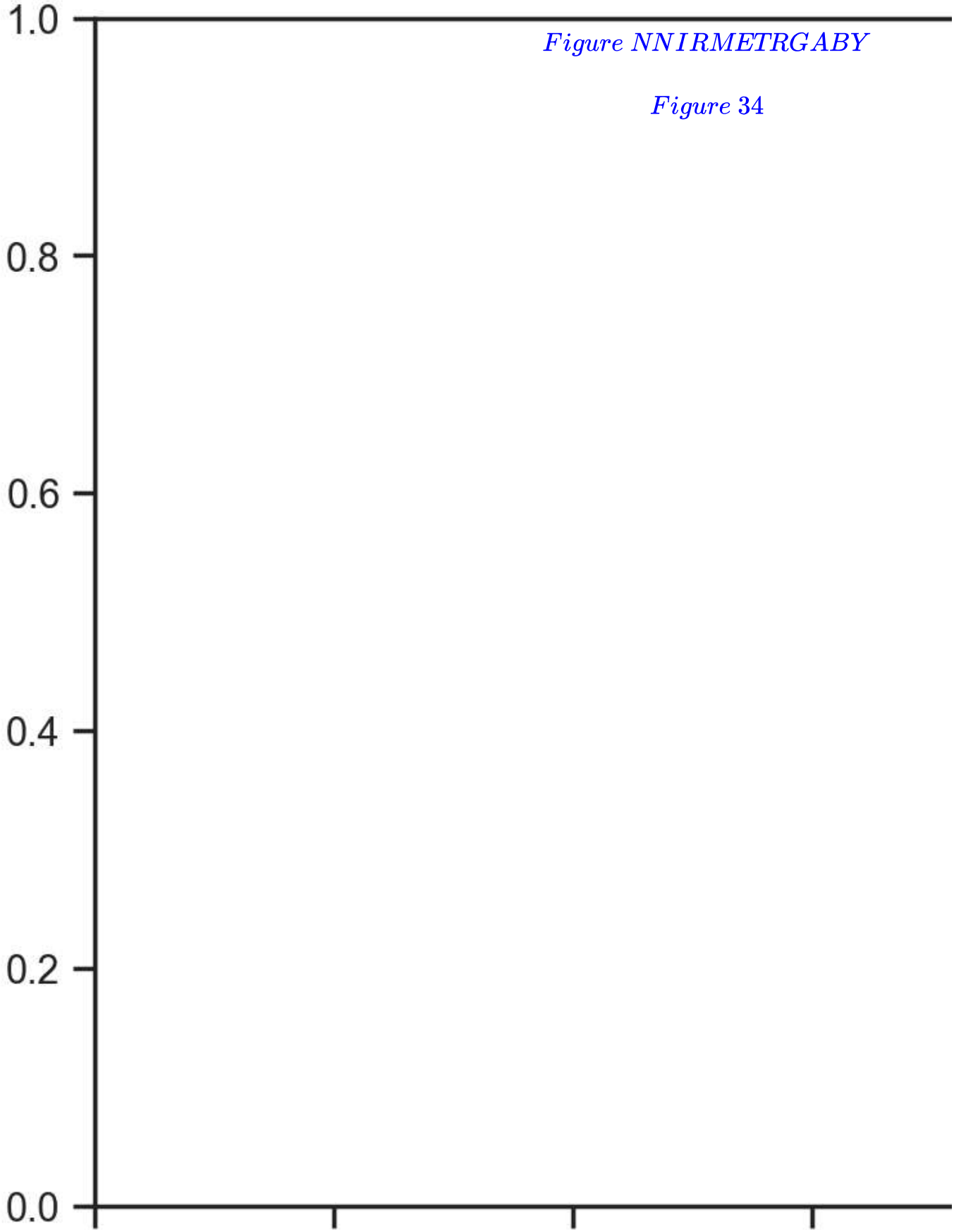
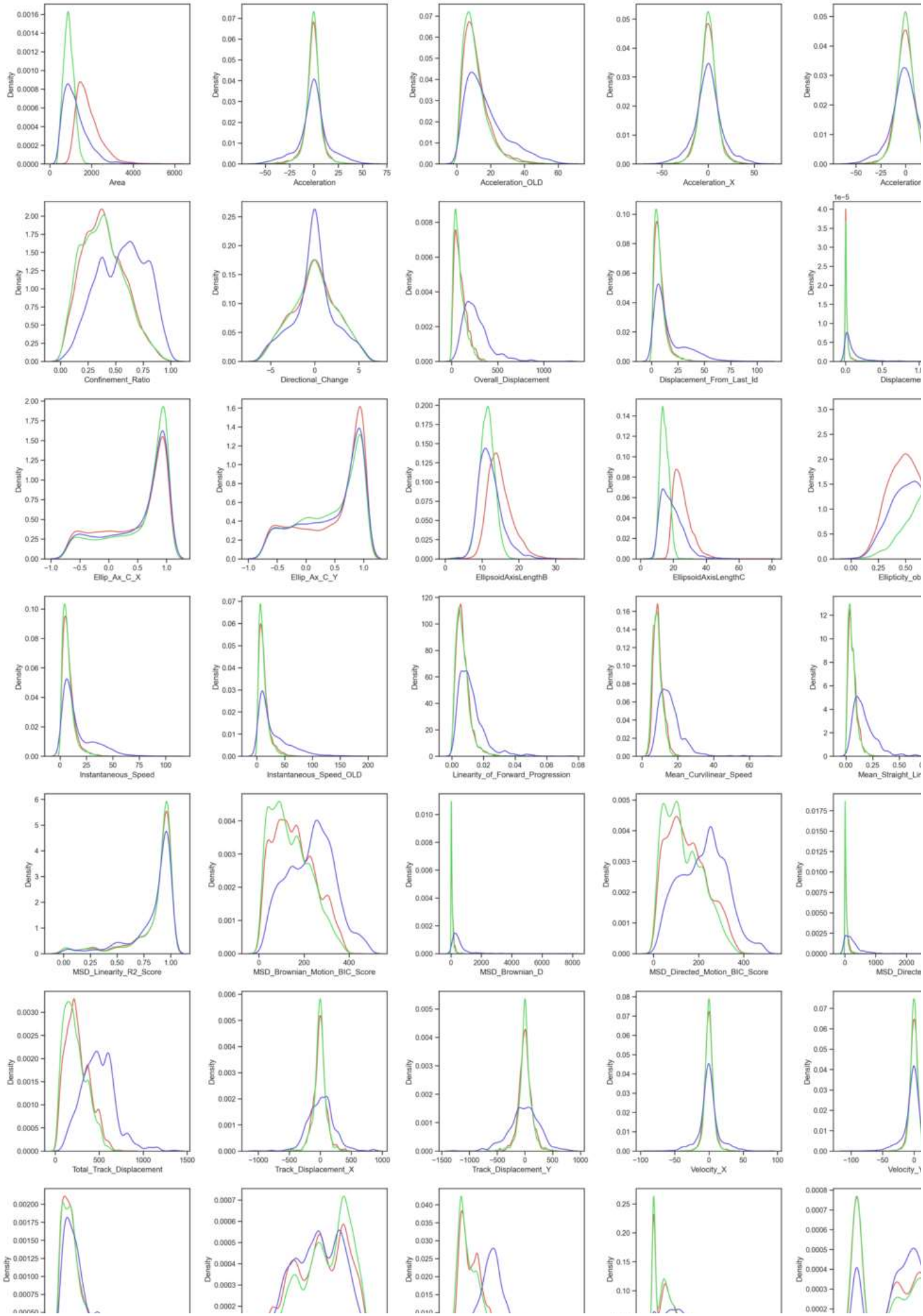
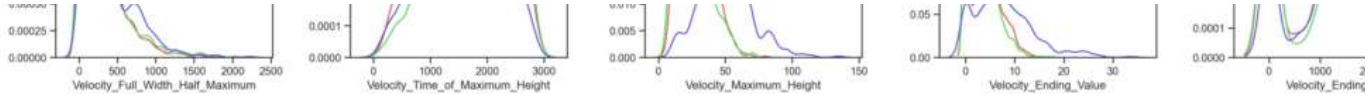


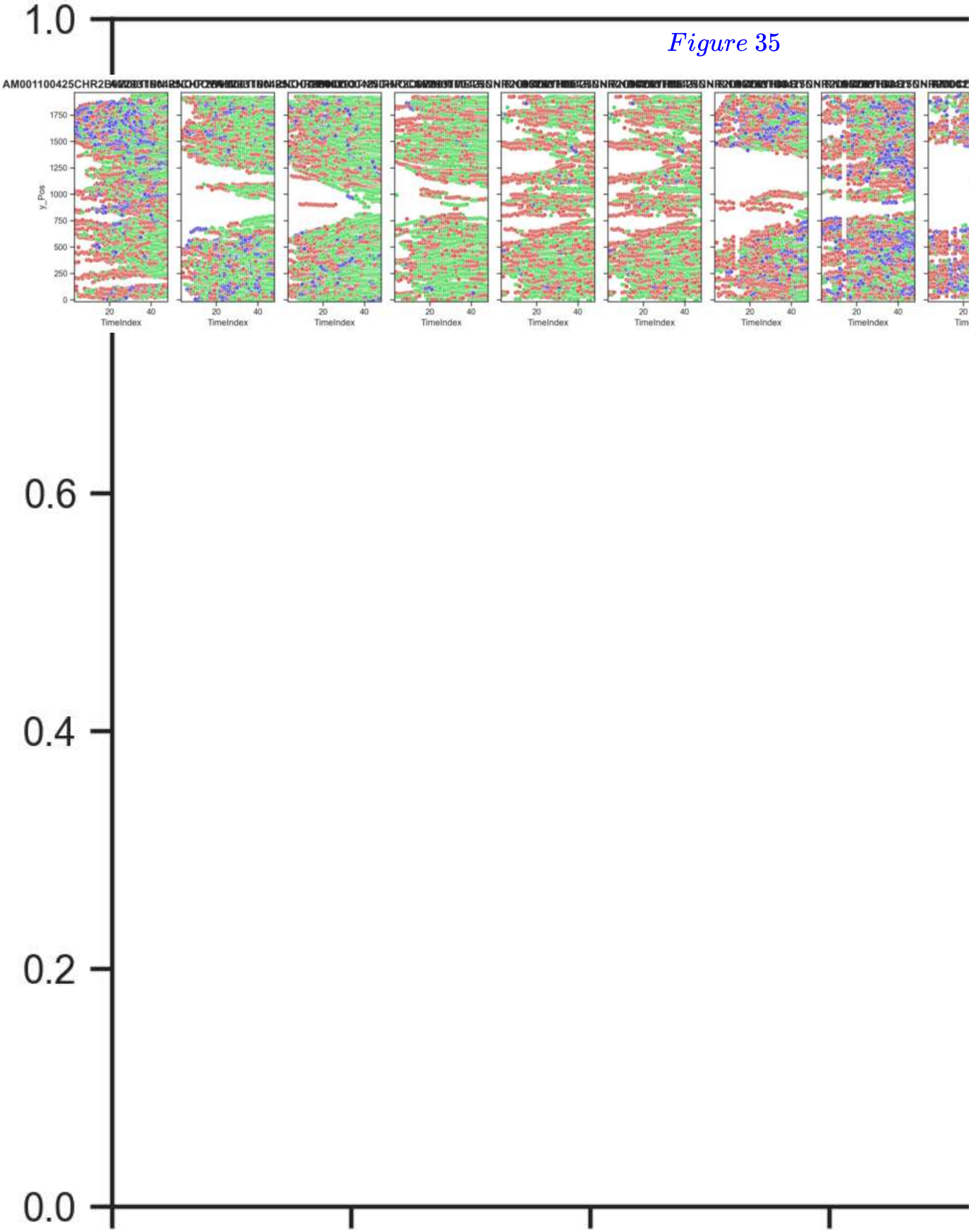
Figure NNIRMETRGABY

Figure 34

0.0 0.2 0.4 0.6


Density
Area
Acceleration
Acceleration_OLD
Acceleration_X
Confinement_Ratio
Directional_Change
Overall_Displacement
Displacement_From_Last_Id
1e−5
Ellip_Ax_C_X
Ellip_Ax_C_Y
EllipsoidAxisLengthB
EllipsoidAxisLengthC
Instantaneous_Speed
Instantaneous_Speed_OLD
Linearity_of_Forward_Progression
Mean_Curvilinear_Speed
MSD_Linearity_R2_Score
MSD_Brownian_Motion_BIC_Score
MSD_Brownian_D
MSD_Directed_Motion_BIC_Score
Total_Track_Displacement
Track_Displacement_X
Track_Displacement_Y
Velocity_X


0.00025
0.00000
0 500 1000 1500 2000 2500
Velocity_Full_Width_Half_Maximum
0.0001
0.0000
0 1000 2000 3000
Velocity_Time_of_Maximum_Height
0.005
0.000
0 50 100 150
Velocity_Maximum_Height
0.05
0.00
0 10 20 30
Velocity_Ending_Value
0.0001
0.0000
0 1000


1.0
Figure 35
AM001100425CHR2B
y_Pos
1750
1500
1250
1000
750
500
250
0
20
40
TimeIndex
0.6
0.4
0.2
0.0

0.0 0.2 0.4 0.6

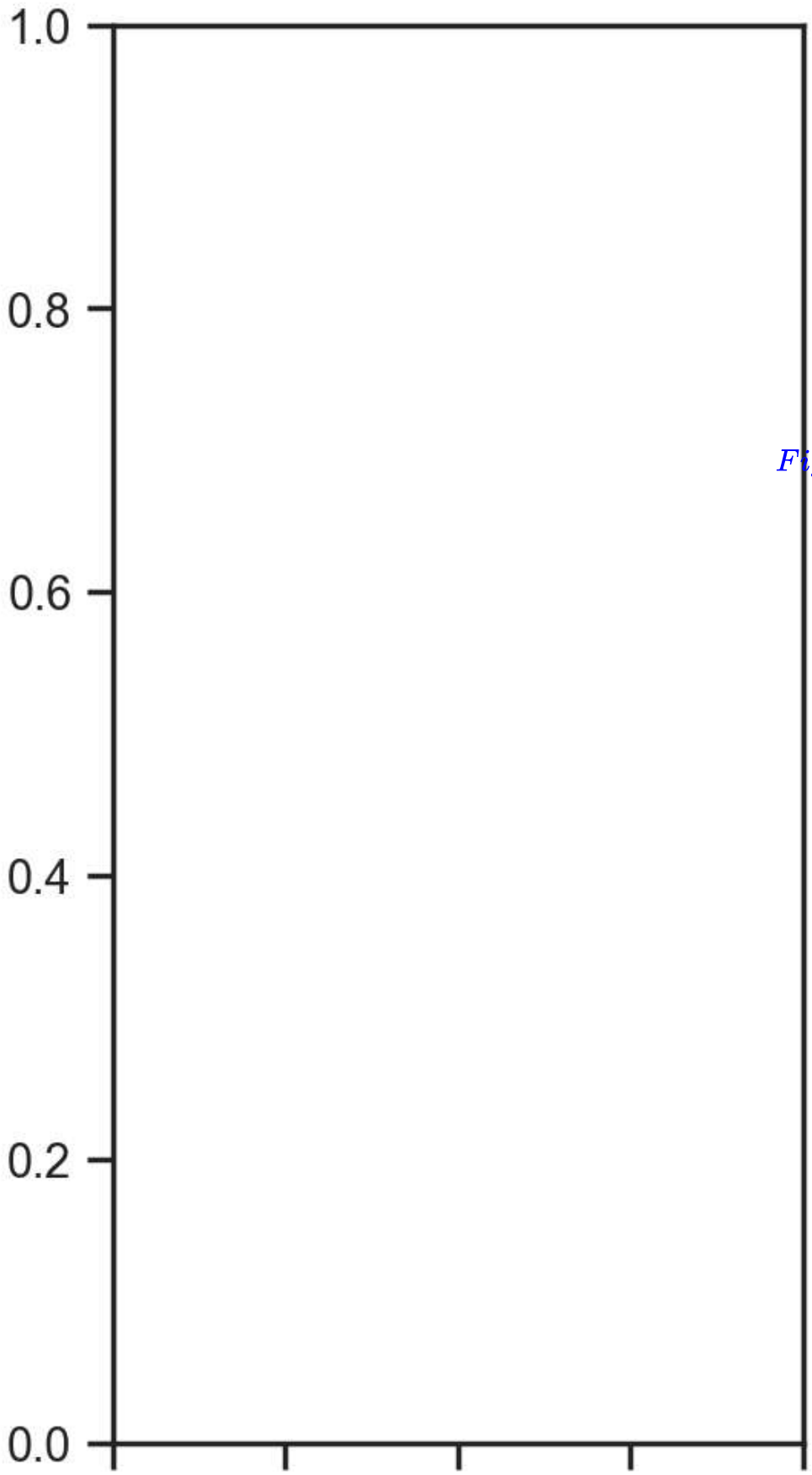
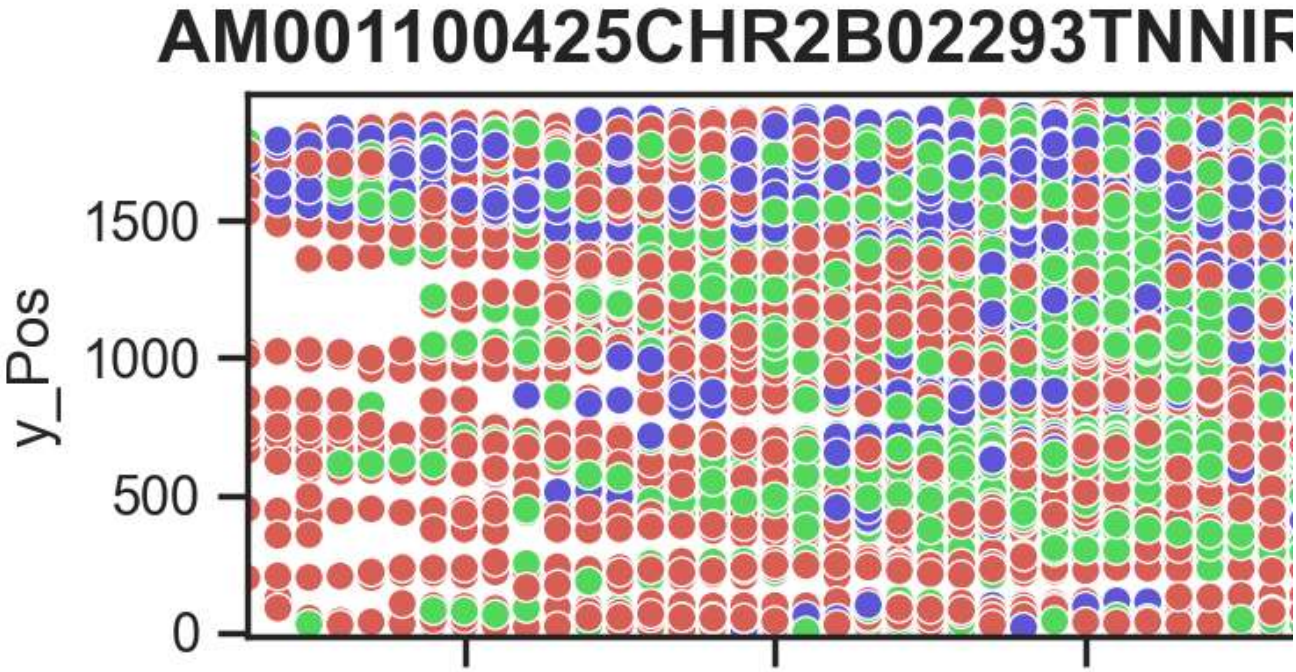
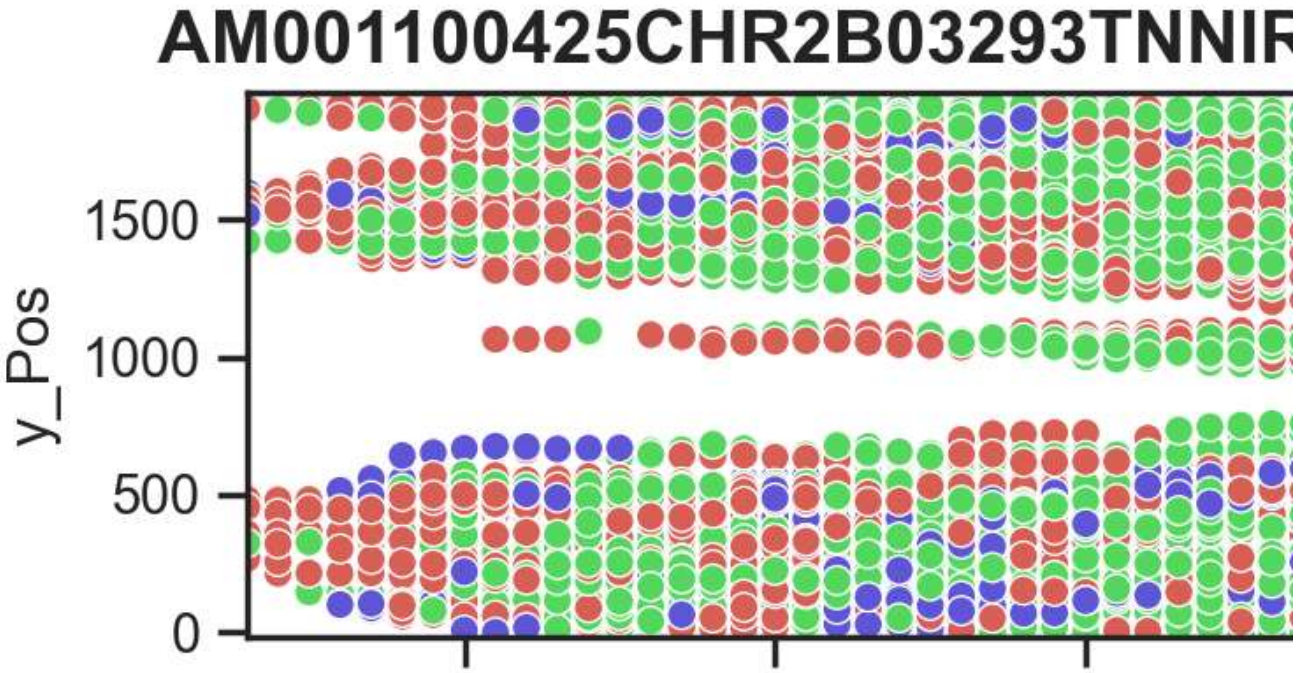
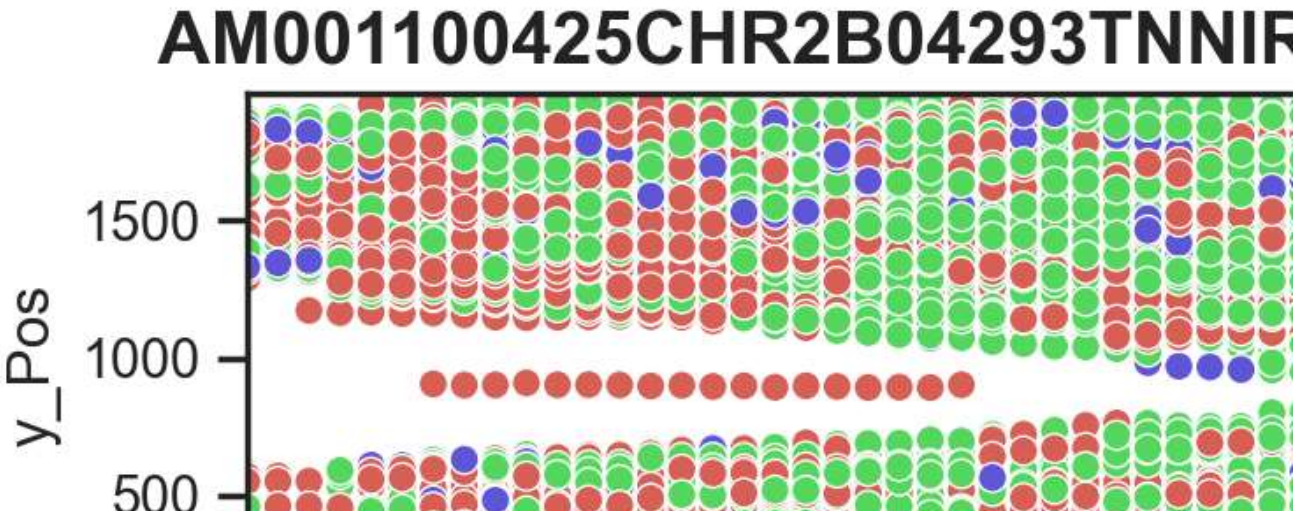


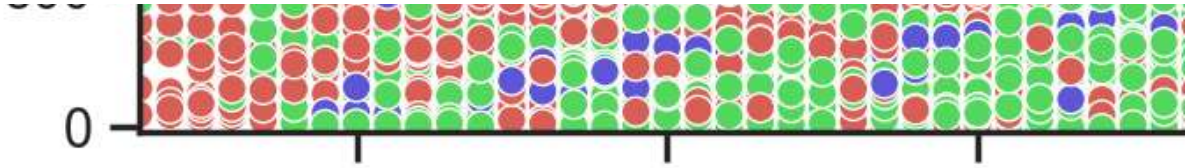
Figure 36

0.00 0.25 0.50 0.75 1.00

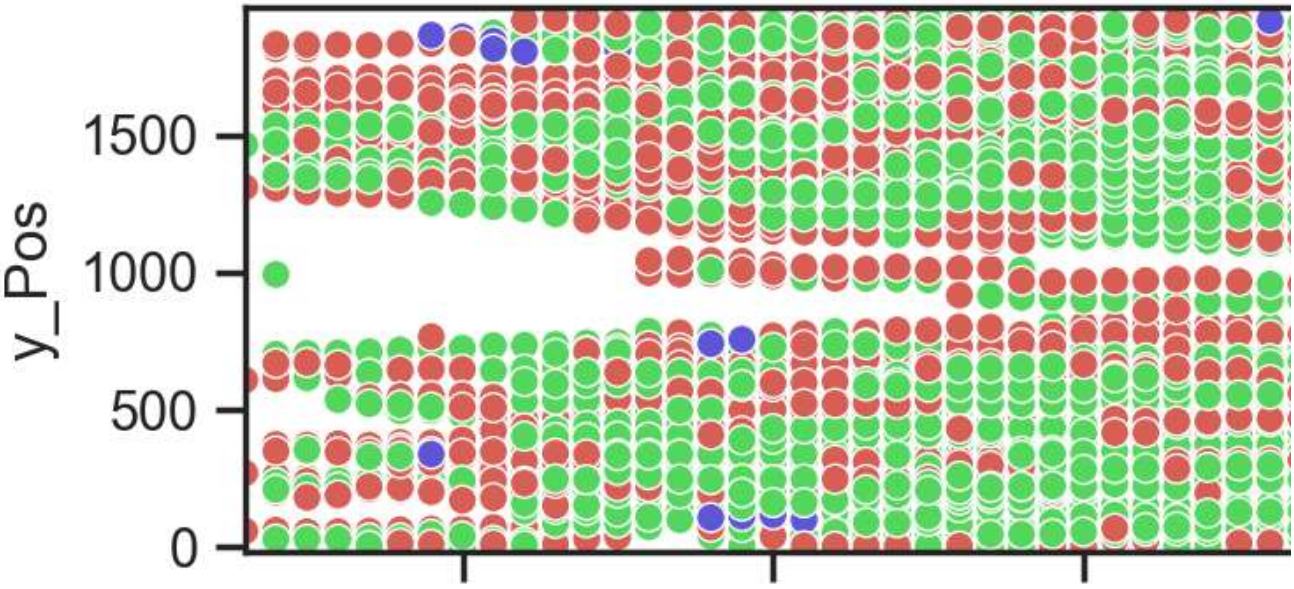

AM001100425CHR2B02293TNNIF
y_Pos
1500
1000
500
0


AM001100425CHR2B03293TNNIF
y_Pos
1500
1000
500
0

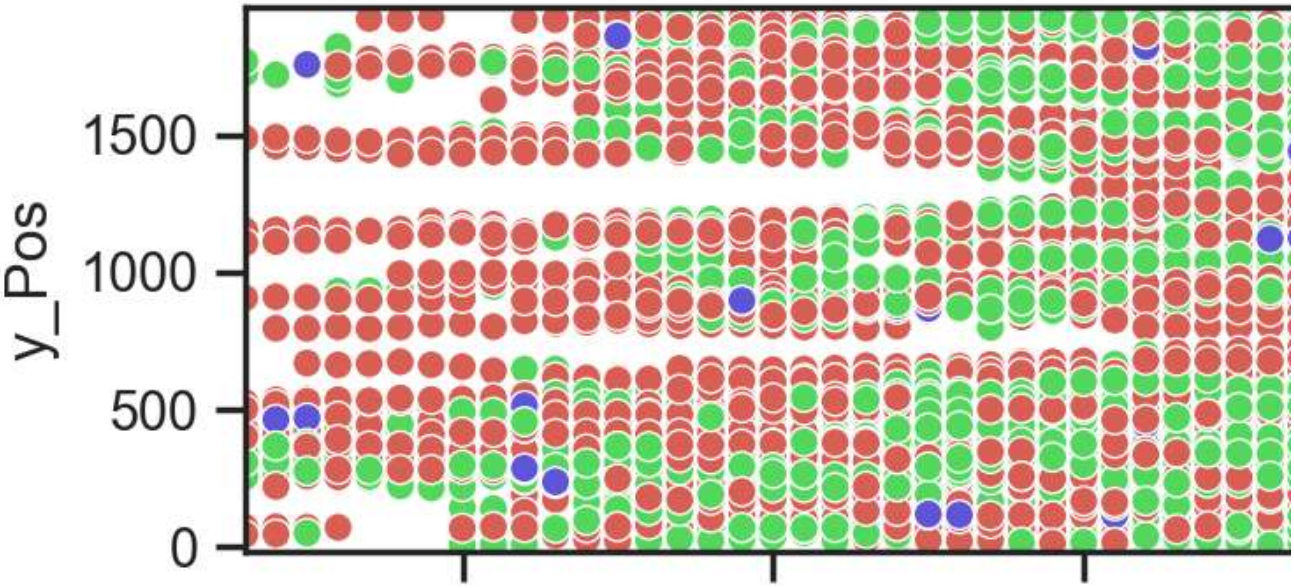

AM001100425CHR2B04293TNNIF
y_Pos
1500
1000
500



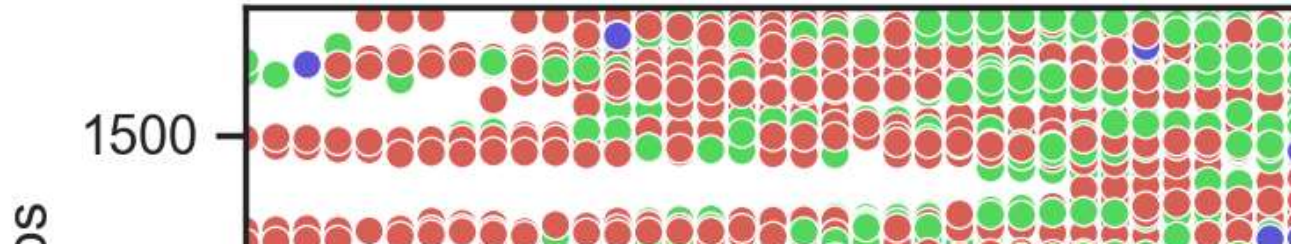
AM001100425CHR2C02293TMETRN

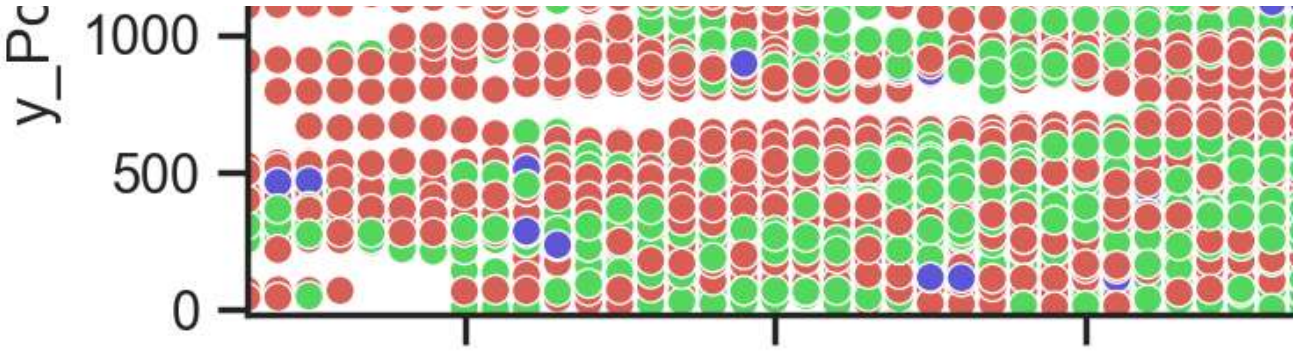


AM001100425CHR2C03293TMETRN

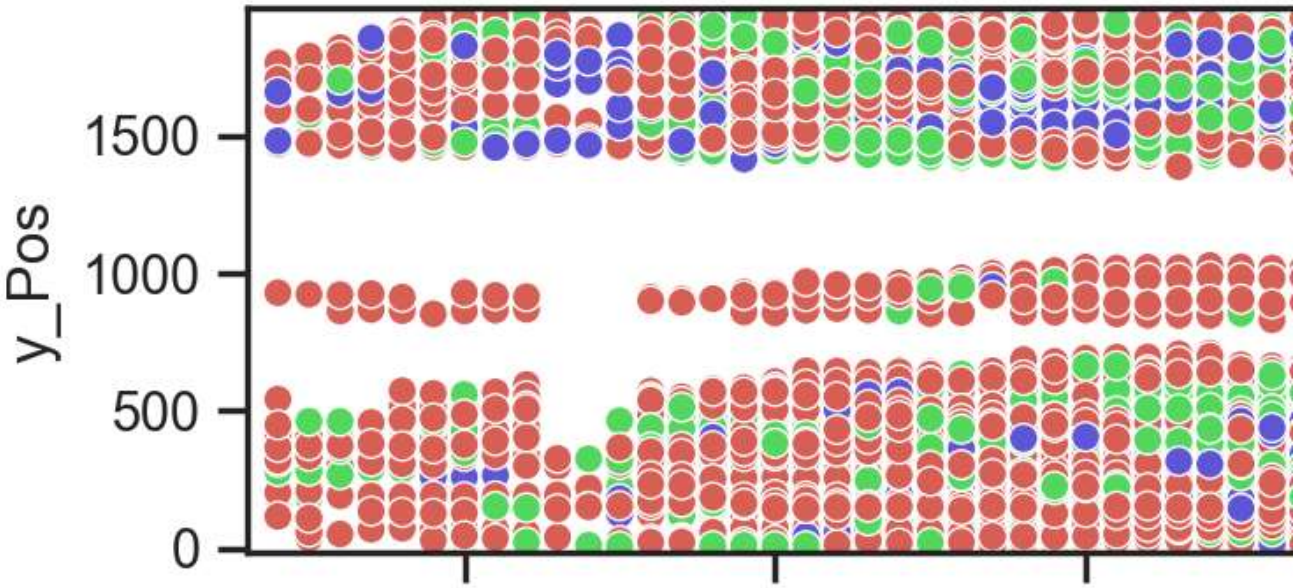


AM001100425CHR2C04293TMETRN





AM001100425CHR2D02293TGABYN



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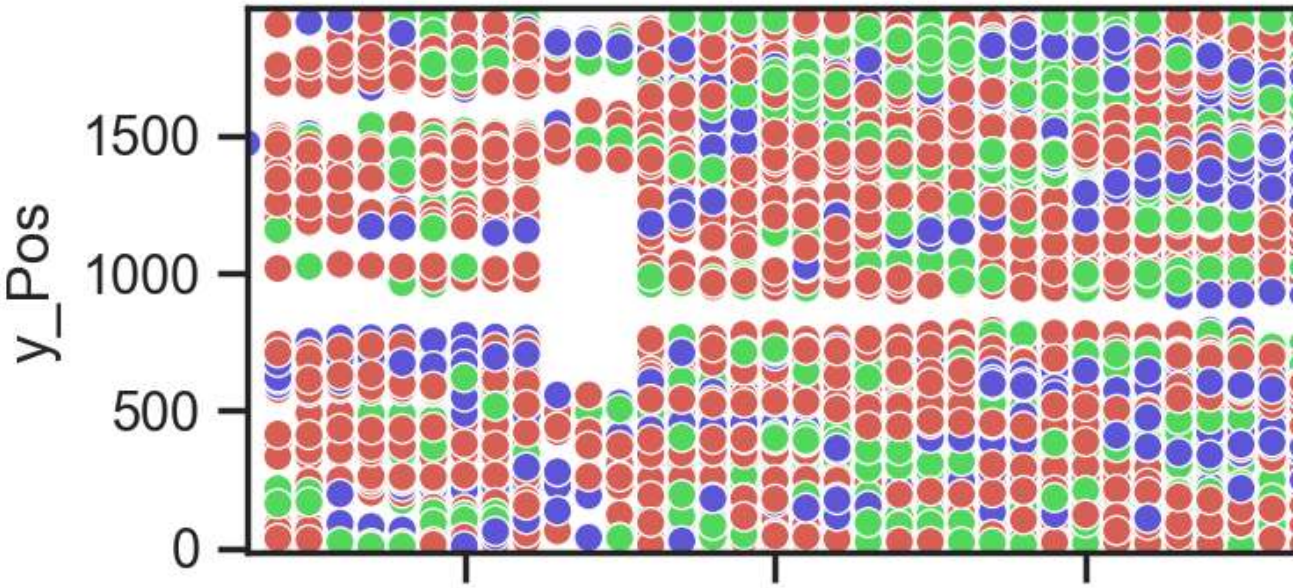

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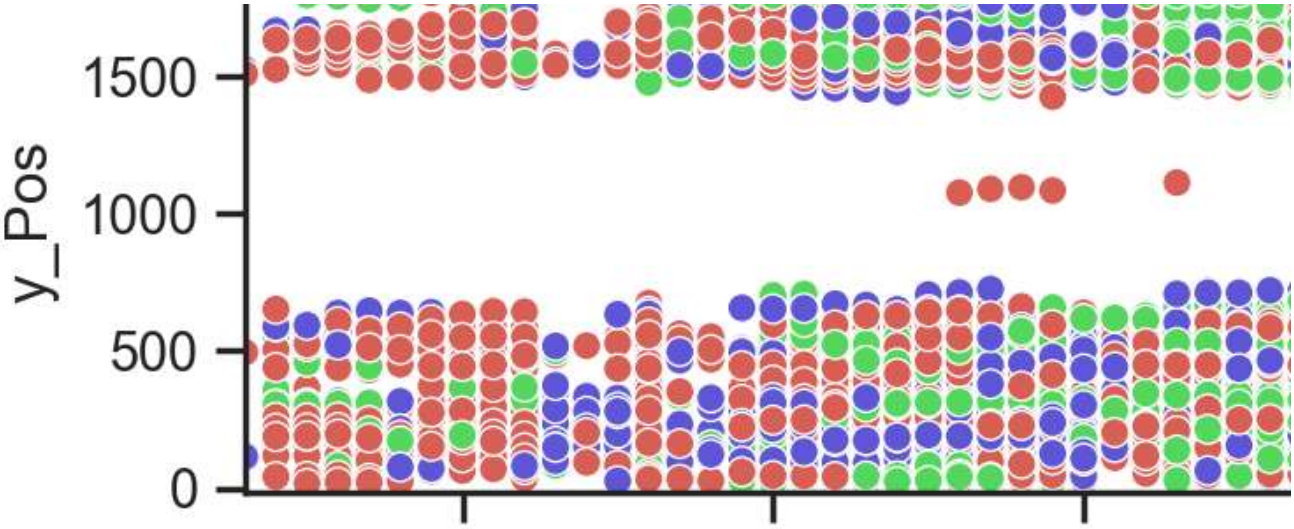

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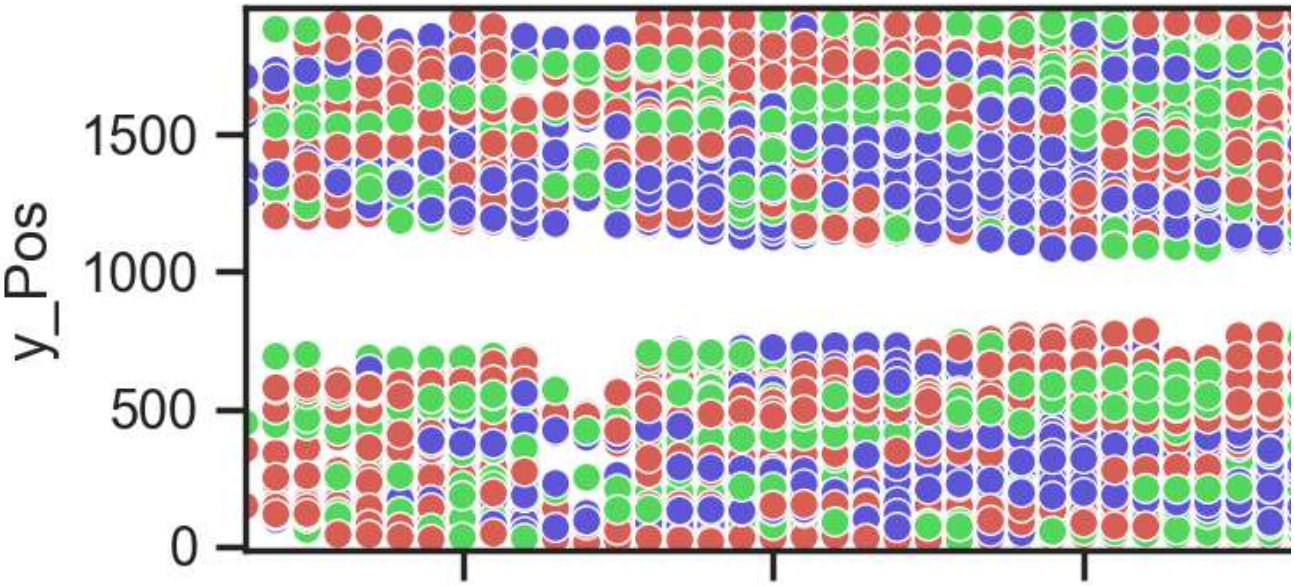

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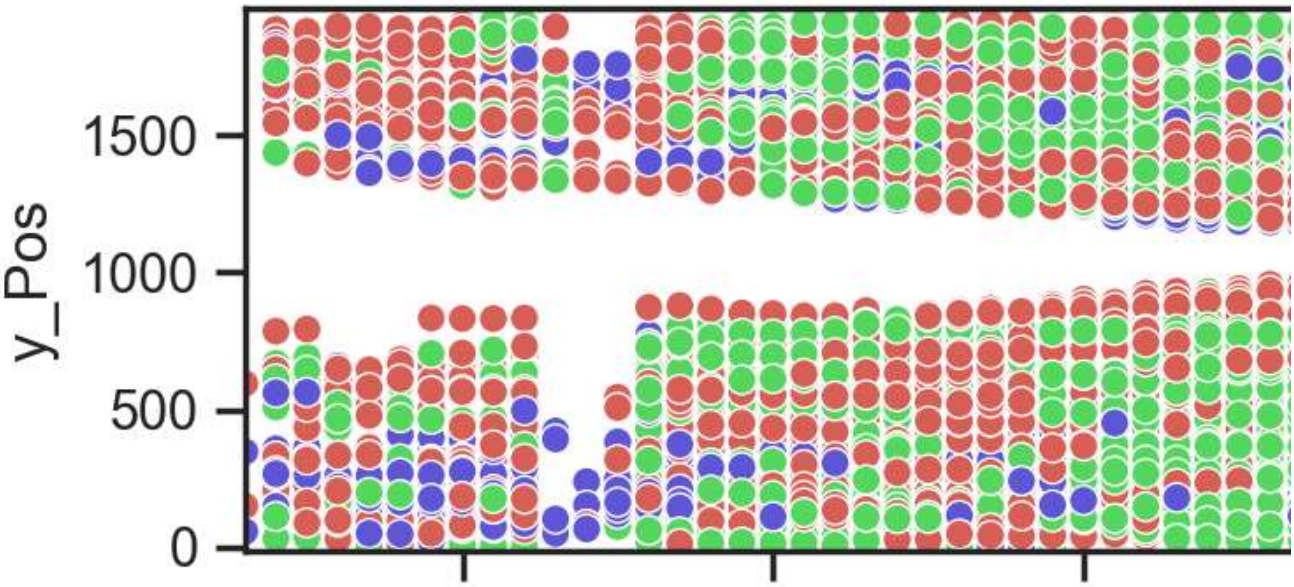

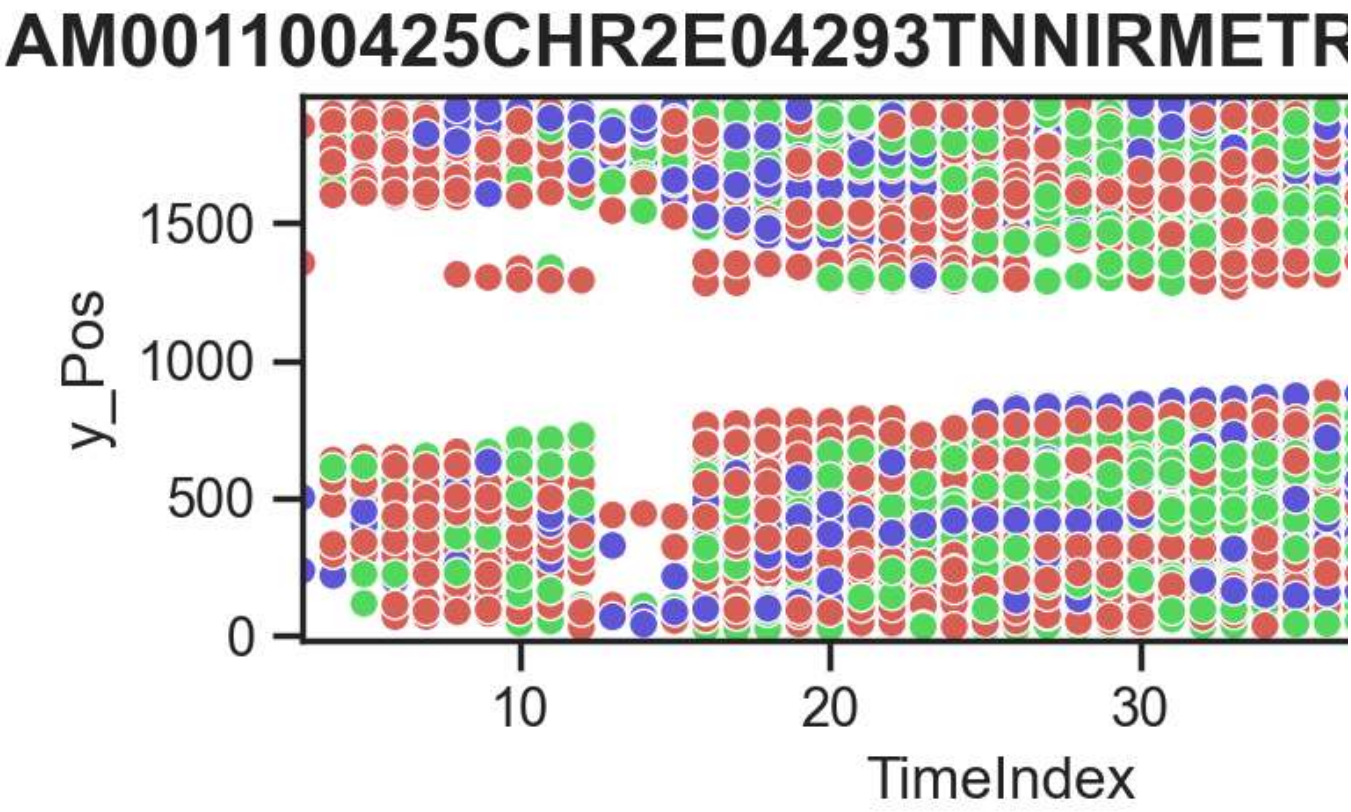
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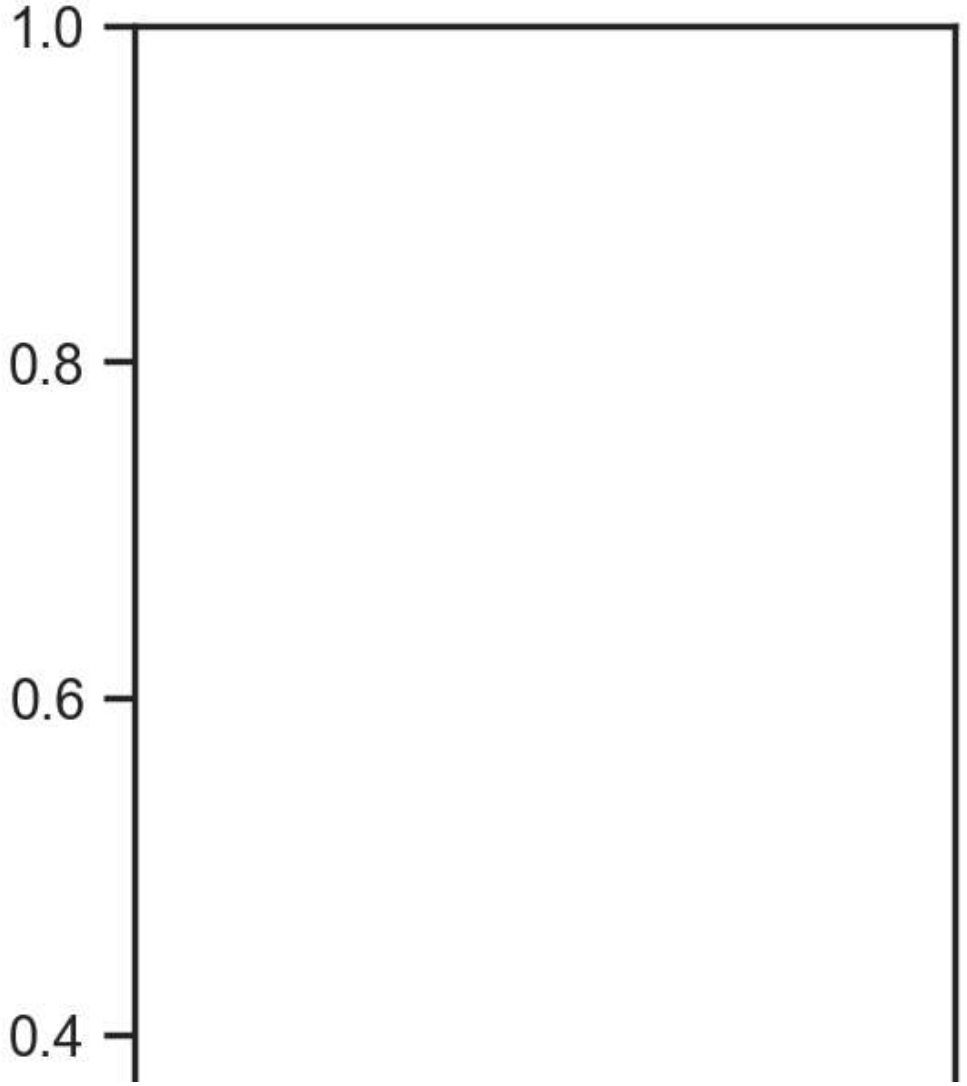
30
TimeIndex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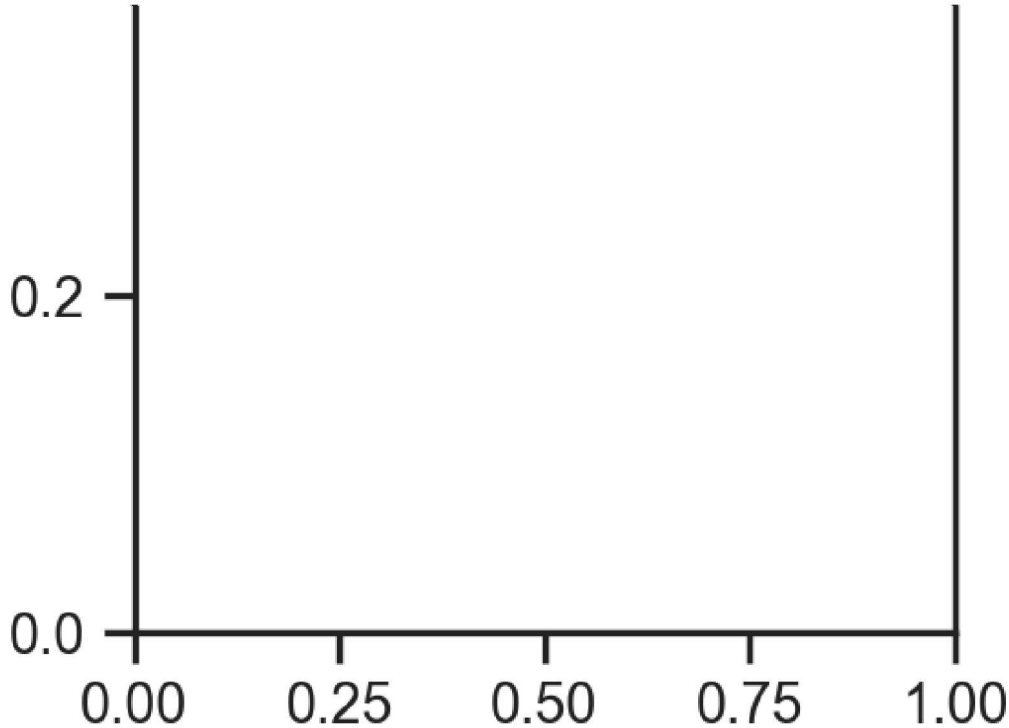

Figure 37

Descriptive Table

	Area						Acceleration	
Groups	N	Mean	std. Deviation	std. Error	95 confidence Interval for Mean Upper Bound	95 confidence Interval for Mean Lower Bound	N	Mean
0	41,407	1,814.5366	622.7146	3.0602	1,820.5346	1,808.5386	41,407	-0.4714
1	53,925	799.5565	244.1466	1.0514	801.6172	797.4959	53,925	-0.482
2	14,455	1,165.2937	589.9142	4.9066	1,174.9103	1,155.6771	14,455	-0.1401

Figure 38

ANOVA – OneWay

Could not convert column: Experiment

Could not convert column: Treatments

ANOVA Table feature per Group

	Between Groups					Within Groups			Total
	Sum of Squares	df	Mean Square	F	Sig.	Sum of Squares	df	Mean Square	Sum of Squares
Area	24,199,871,121.4377	2	12,099,935,560.7189	54,664.9168	0	24,300,399,650.83	109,784	221,347.3698	48,500,270,772.2677
Acceleration	1,430.984	2	715.492	8.6872	0.0002	9,041,959.3594	109,784	82.3614	9,043,390.3434
Acceleration_OLD	765,843.8705	2	382,921.9353	5,770.0741	0	7,285,643.3618	109,784	66.3634	8,051,487.2323
Acceleration_X	33.8129	2	16.9065	0.1731	0.8411	10,722,657.9527	109,784	97.6705	10,722,691.7656
Acceleration_Y	458.3872	2	229.1936	2.2341	0.1071	11,262,434.0741	109,784	102.5872	11,262,892.4613
Coll	22.497	2	11.2485	158.2176	0	7,805.1003	109,784	0.0711	7,827.5972
Coll_CUBE	20.464	2	10.232	162.3806	0	6,917.7497	109,784	0.063	6,938.2137
Confinement_Ratio	494.8935	2	247.4468	6,983.5073	0	3,889.9789	109,784	0.0354	4,384.8725
Directional_Change	39.5904	2	19.7952	3.2584	0.0385	666,954.3177	109,784	6.0752	666,993.9081

Analysis complete! You can rerun the analysis by clicking 'Run Analysis' again.