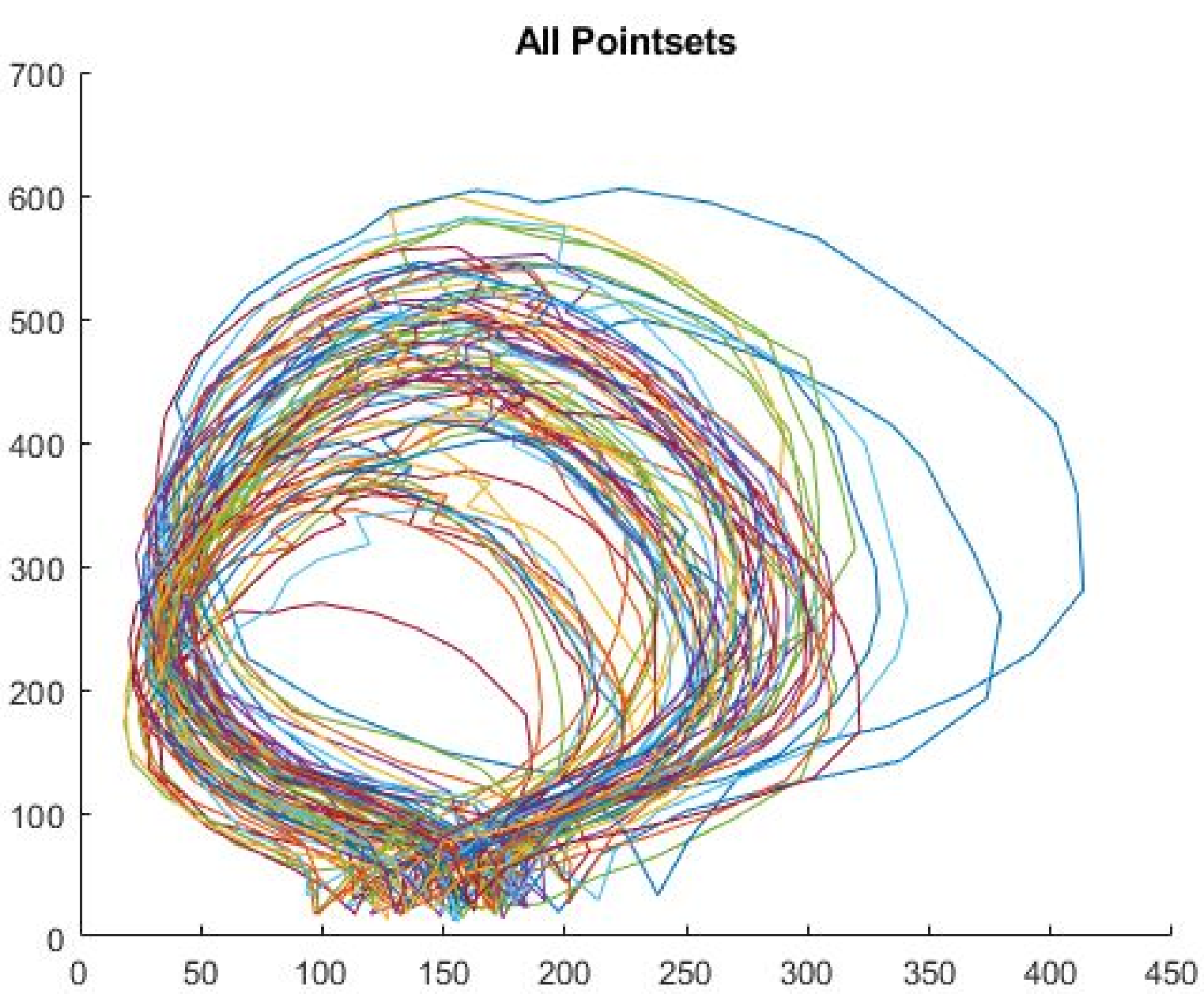
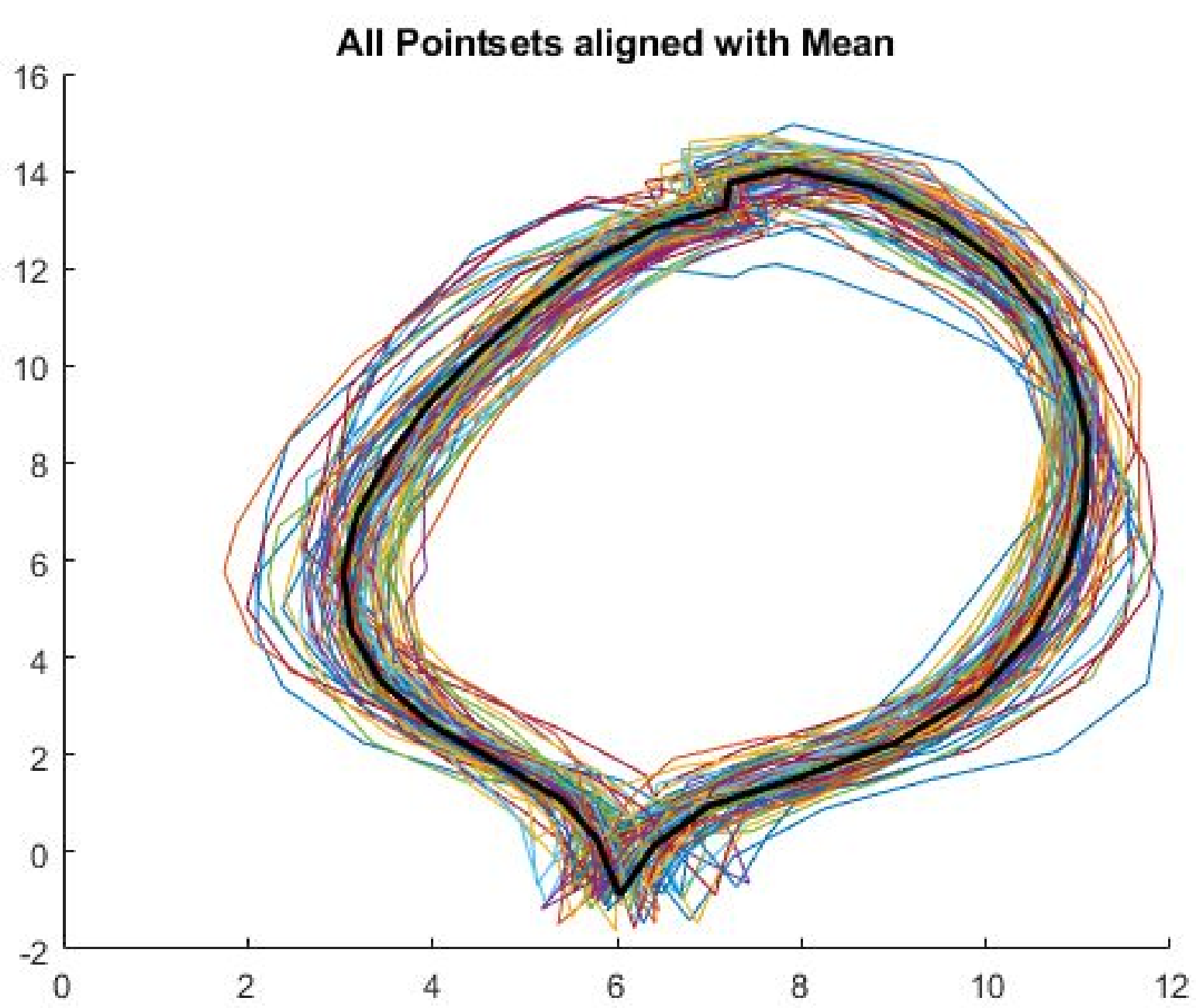
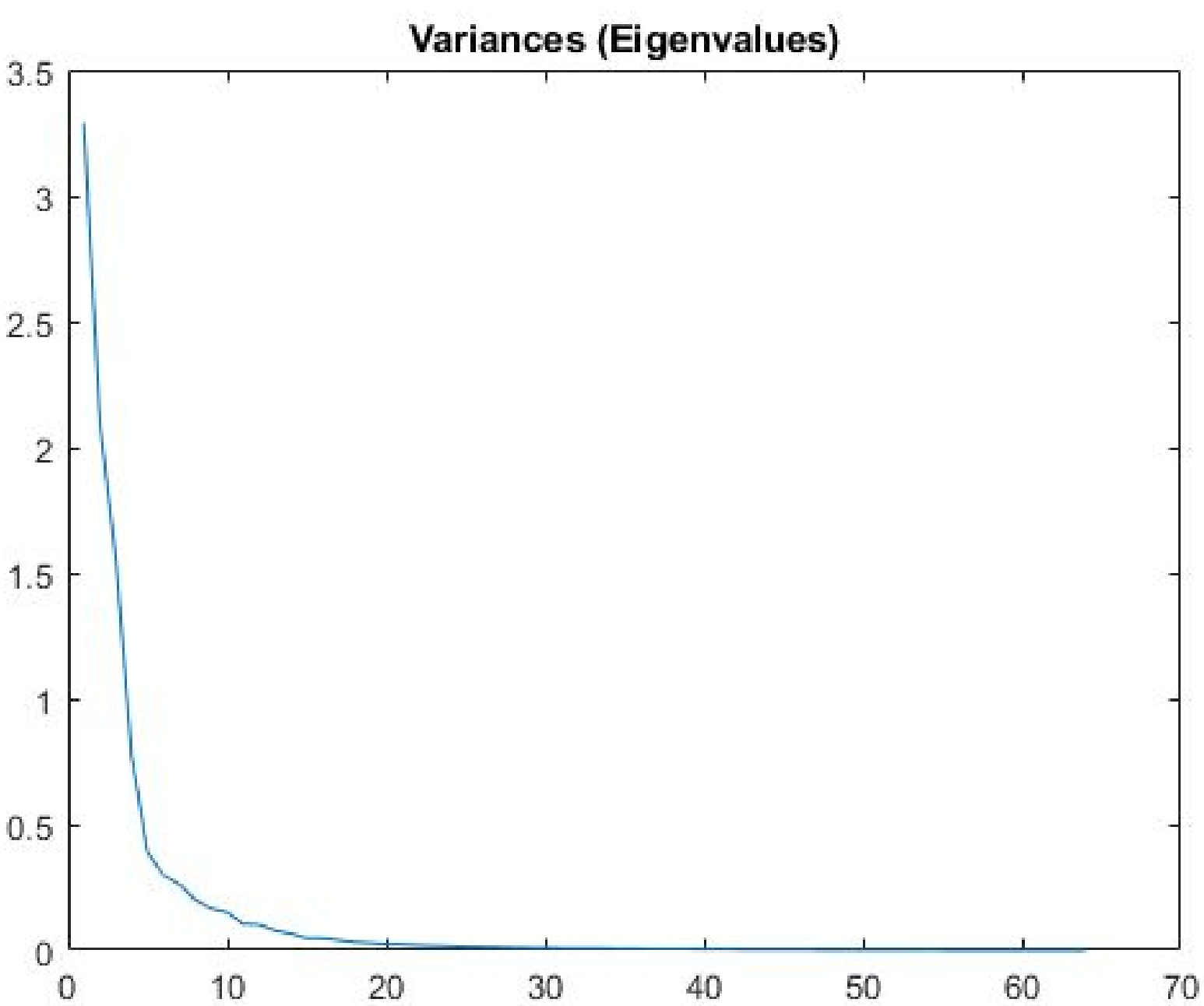
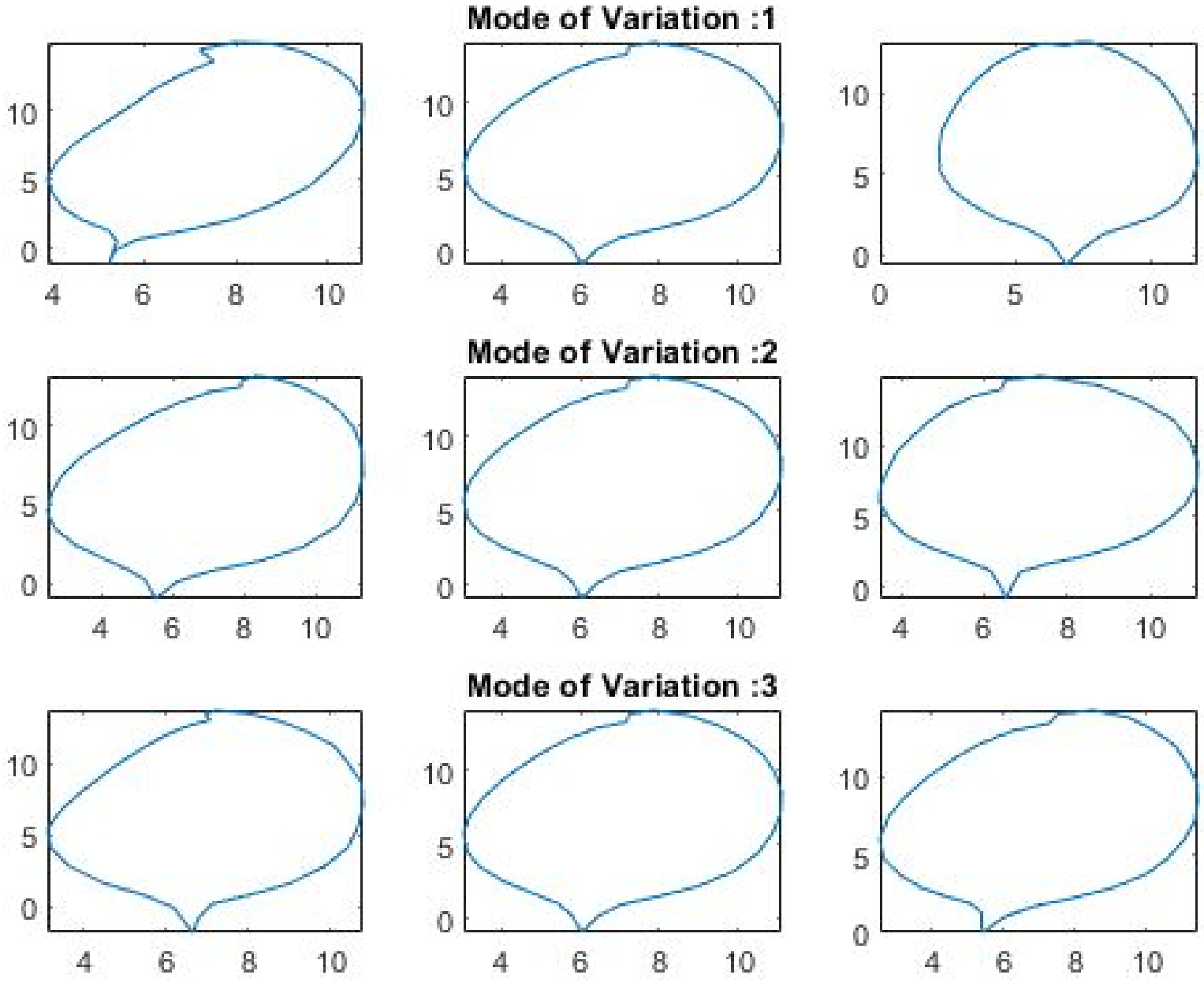
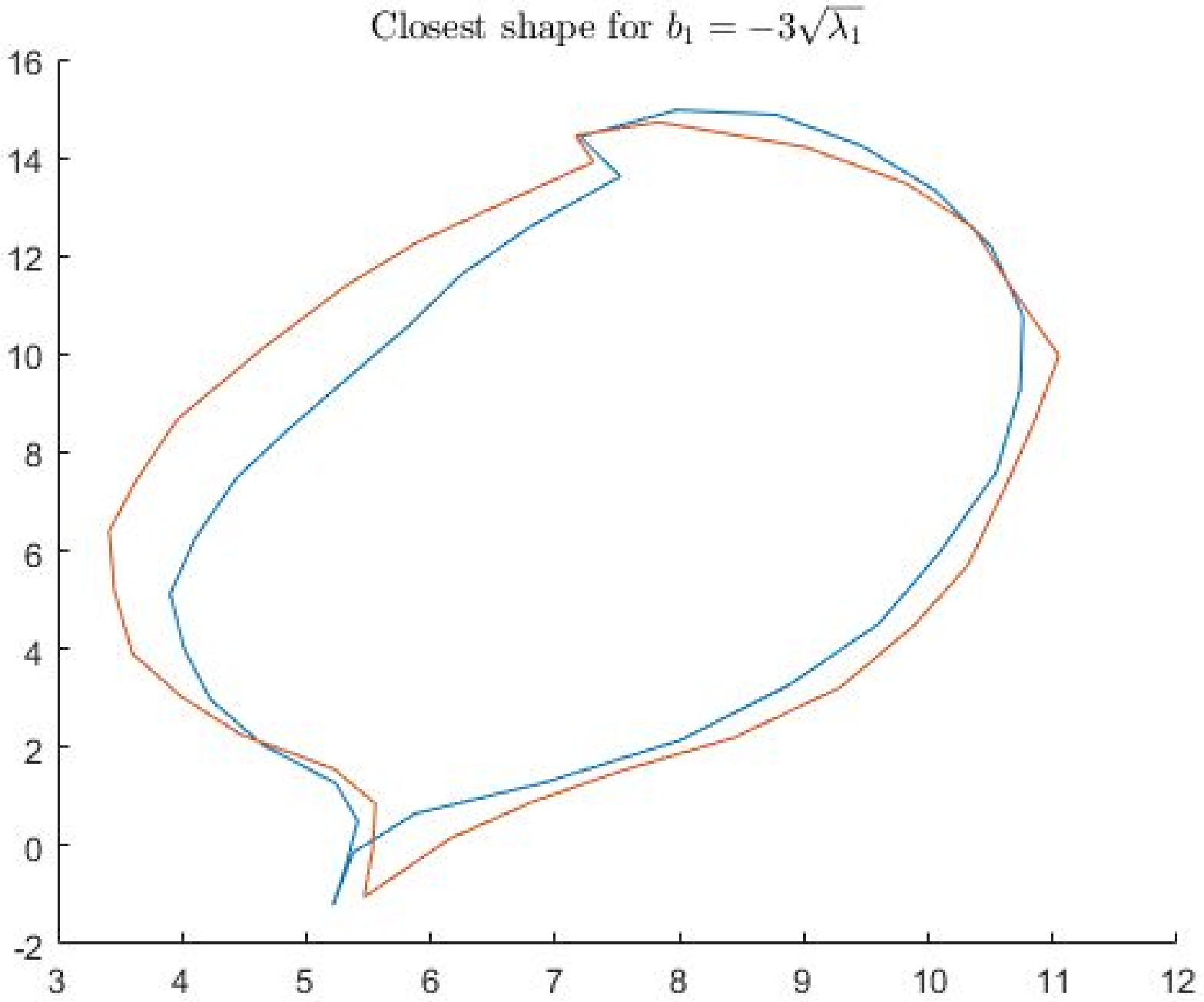
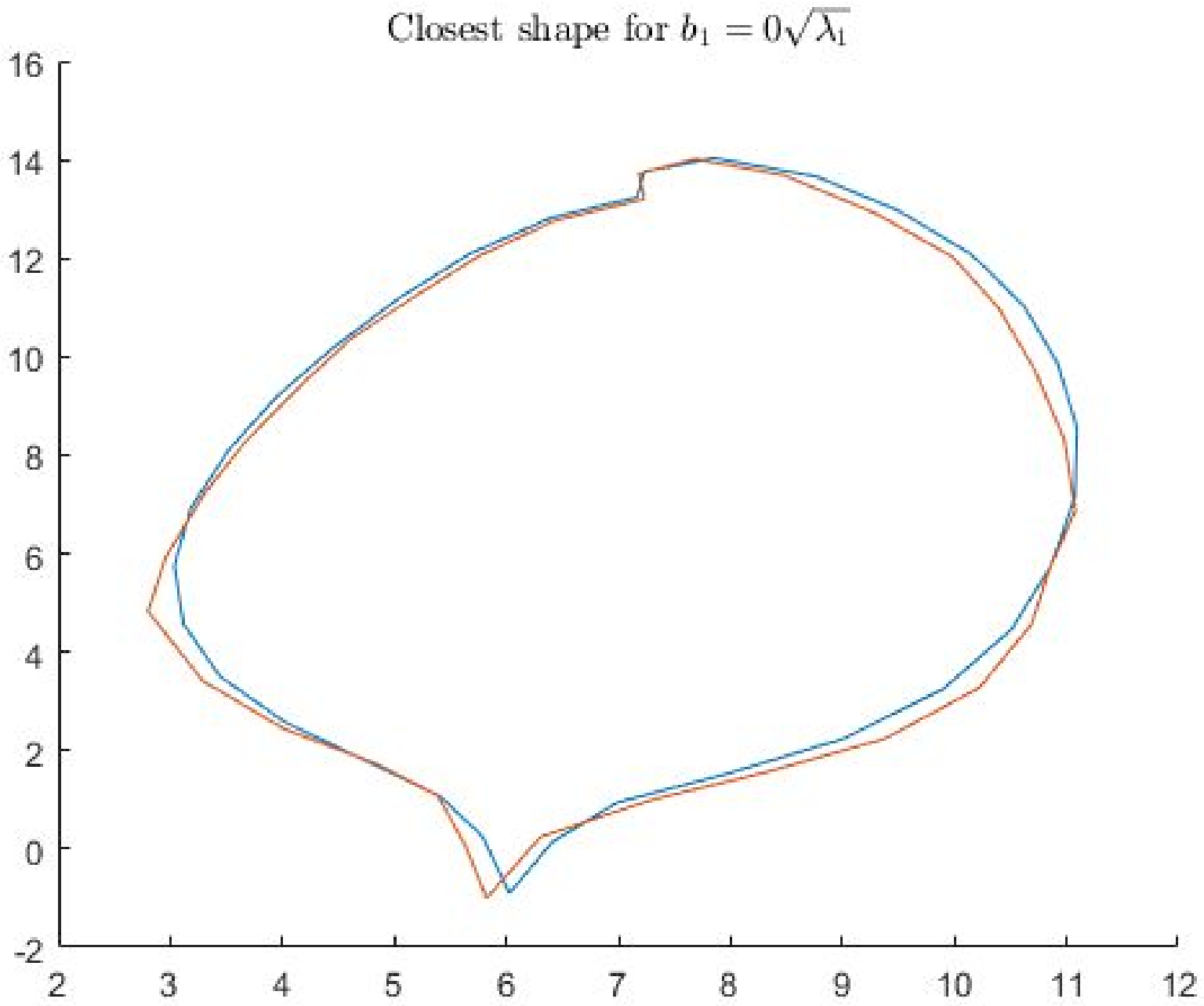

All Pointsets
700
600
500
400
300
200
100
0
0
50
100
150
200
250
300
350
400
450

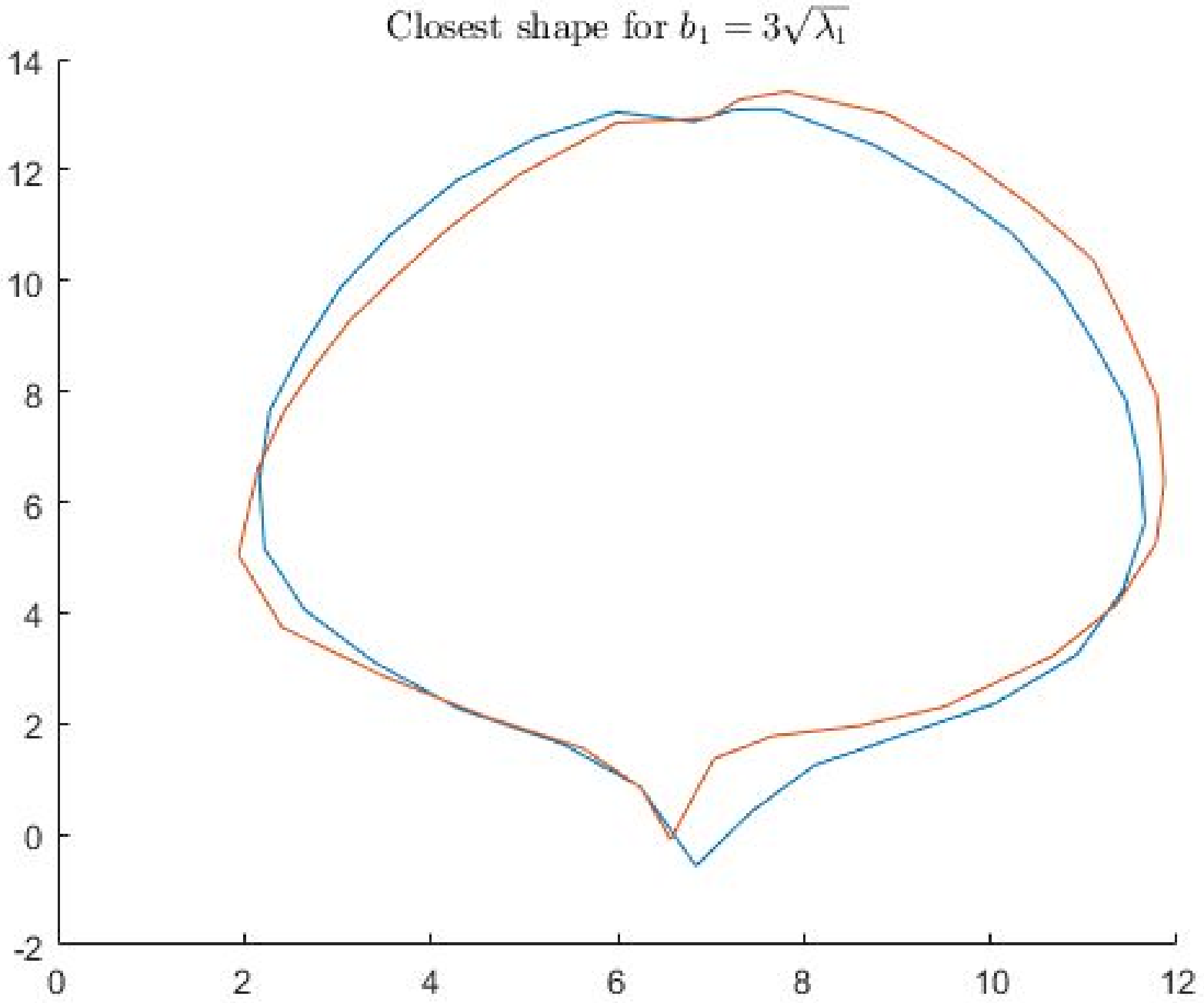

All Pointsets aligned with Mean
16
14
12
10
8
6
4
2
0
-2
0
2
4
6
8
10
12

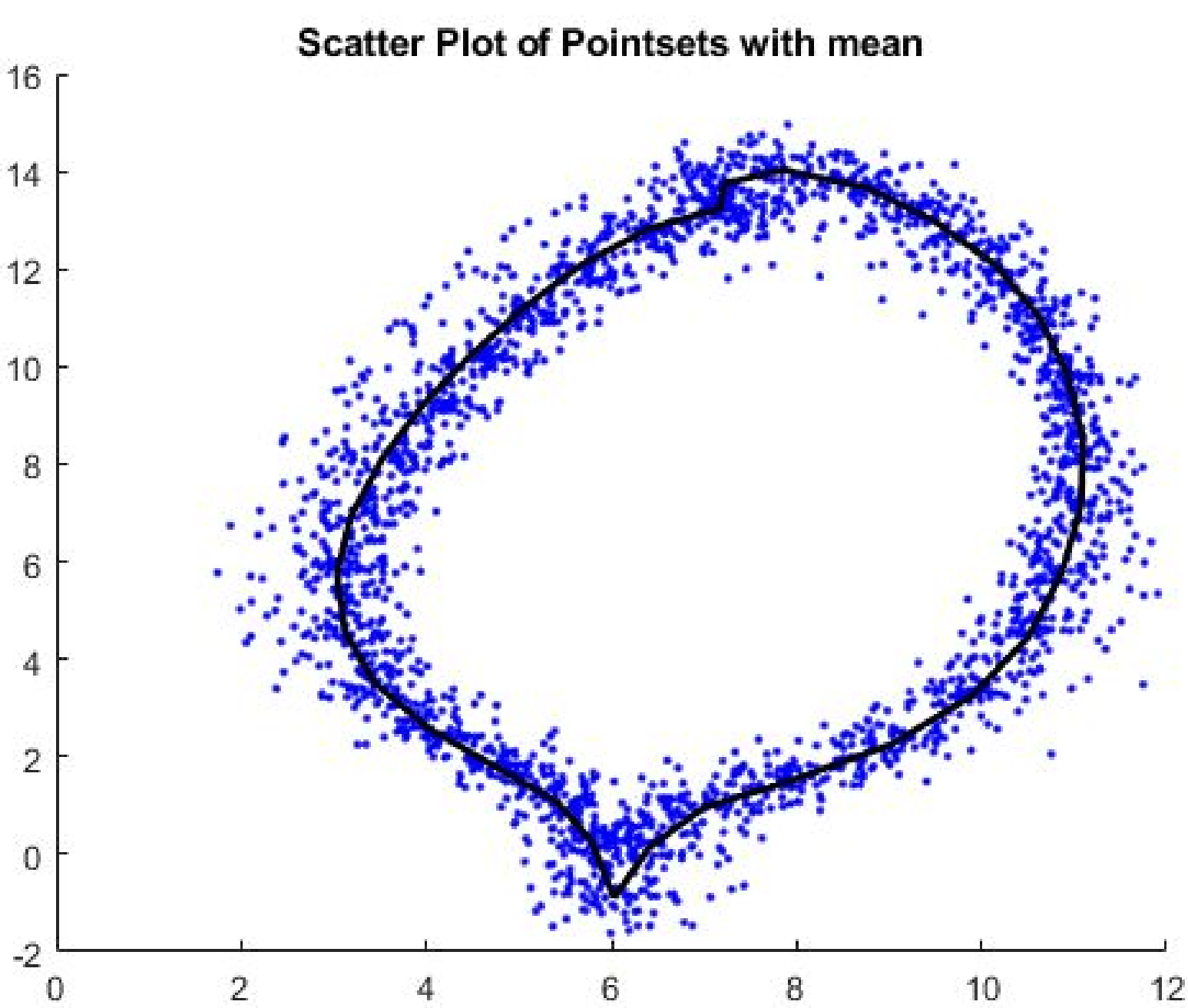

Variances (Eigenvalues)
3.5
3
2.5
2
1.5
1
0.5
0
0
10
20
30
40
50
60
70


Mode of Variation :1
Mode of Variation :2
Mode of Variation :3


Closest shape for $b_1 = -3\sqrt{\lambda_1}$
16
14
12
10
8
6
4
2
0
-2
3
4
5
6
7
8
9
10
11
12


Closest shape for $b_1 = 0\sqrt{\lambda_1}$
16
14
12
10
8
6
4
2
0
-2
2
3
4
5
6
7
8
9
10
11
12


Closest shape for $b_1 = 3\sqrt{\lambda_1}$
14
12
10
8
6
4
2
0
-2
0
2
4
6
8
10
12


Scatter Plot of Pointsets with mean
16
14
12
10
8
6
4
2
0
-2
0
2
4
6
8
10
12

Reference to the results folder :
myMainScript_01.png : All Pointsets : Page 1
myMainScript_02.png : All Pointsets aligned with Mean : Page 2
myMainScript_03.png : Variances (Eigenvalues) : Page 3
myMainScript_04.png : Modes of Variation : Along first 3 modes of variation : Page 4
myMainScript_05.png : ClosestShape_1 : Closest to Mean -3 sqrt(lambda) v : Page 5
myMainScript_06.png : ClosestShape_2 : Closest to Mean : Page 6
myMainScript_07.png : ClosestShape_3 : Closest to Mean +3 sqrt(lambda) v : Page 7
myMainScript_08.png : Scatter Plot of Pointsets with Mean : Page 8
Each .mat file contains one variable image which can be shown using imshow.

In the modes of variation plot (page 4) we observe the following;

- The 1st mode of variation relates to alignment of the tips of the leaf, +3 sqrt(lambda) corresponds to the tips being aligned and -3 sqrt(lambda) corresponds to tips being misaligned. It also relates to the sharpness of the bottom tip of the leaf. +3 sqrt(lambda) corresponds to the tip being broad and -3 sqrt(lambda) corresponds to tip being narrow.
- The 2nd mode of variation again relates to a similar alignment of tips.
- The 3rd mode of variation doesn't reflect much as its eigenvalue is itself small.