Examine saved models

The purpose of this notebook is to examine the learned representations and accuracies of saved models.

Setup

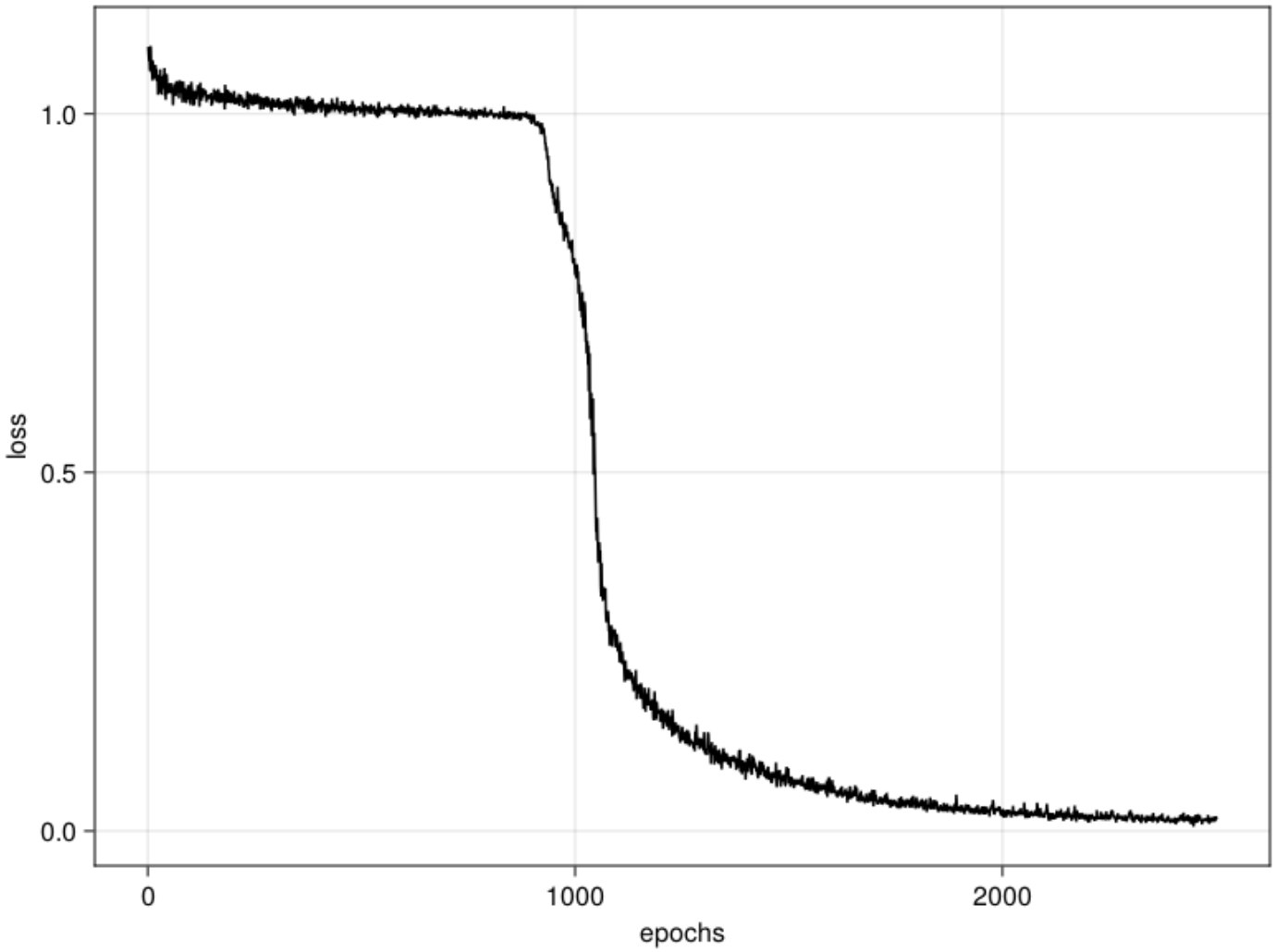
Add NeuralODE code

```
train (generic function with 1 method)
```

Load model

```
loadModel (generic function with 1 method)
```

```
  (Chain(
       layer_1 = Scale((100,)),            # 100 parameters
```



Load data

```
(ArrayAndFuncs([1.0, 1.0, 1.0, 1.0, 1.0,    more ,1.0], [Interpolate([   more], [   more
```

Add display method for `Interpolate`

```
function (itp::Interpolate)(t::Float64)
    i = searchsortedfirst(itp.locations, t)
    @inbounds itp.SET[i] - 1
end
```

Test model

Training data

```
1.0
```

Testing data

```
1.0
```

What is the testing SET number?

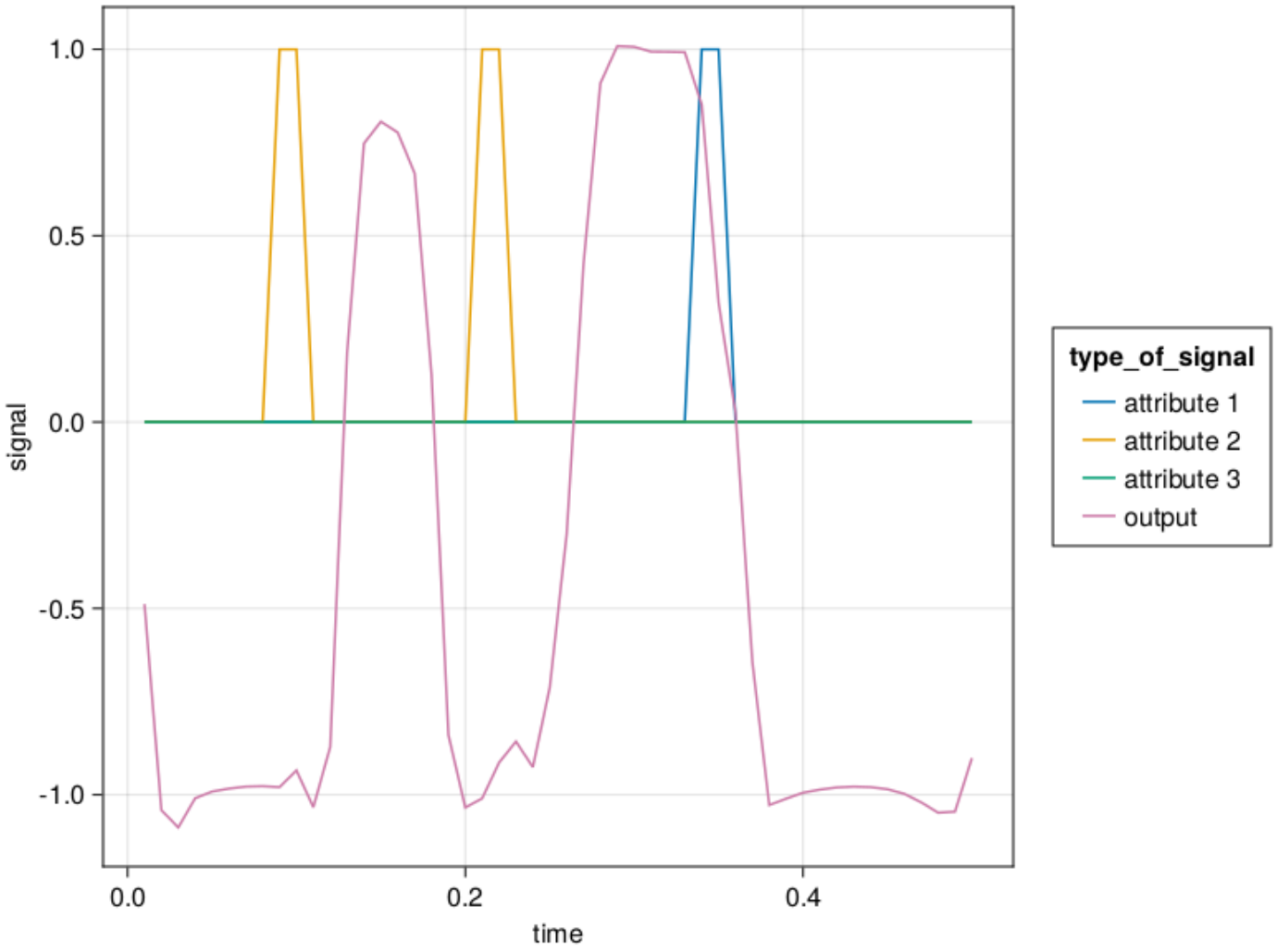
```
SET_num = 18
```

```
1  SET_num = 18
```

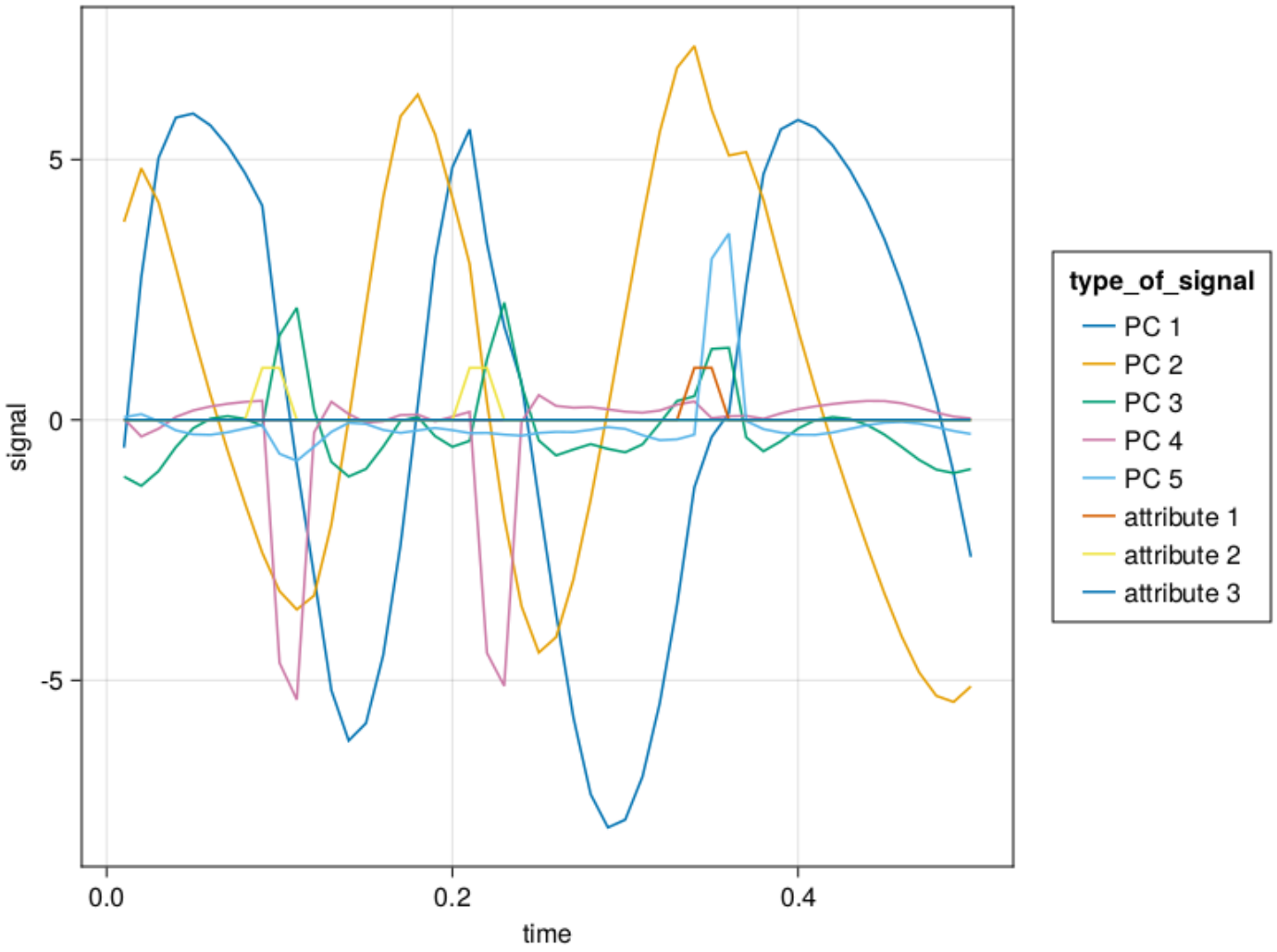
Visualize low-dimensional dynamics

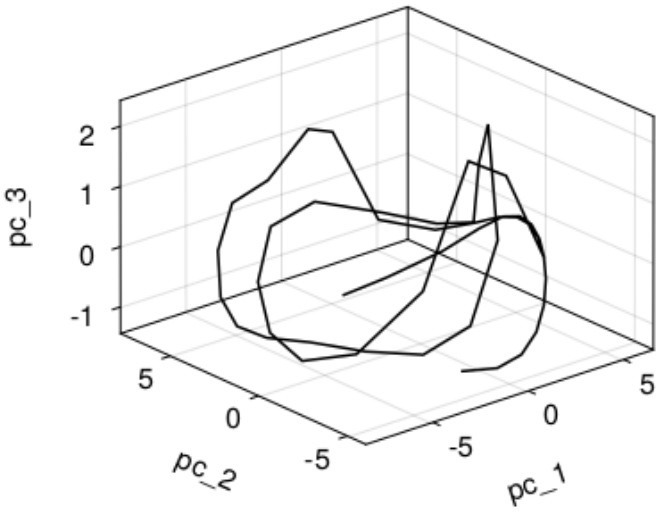
```
input_to_mat (generic function with 1 method)
```

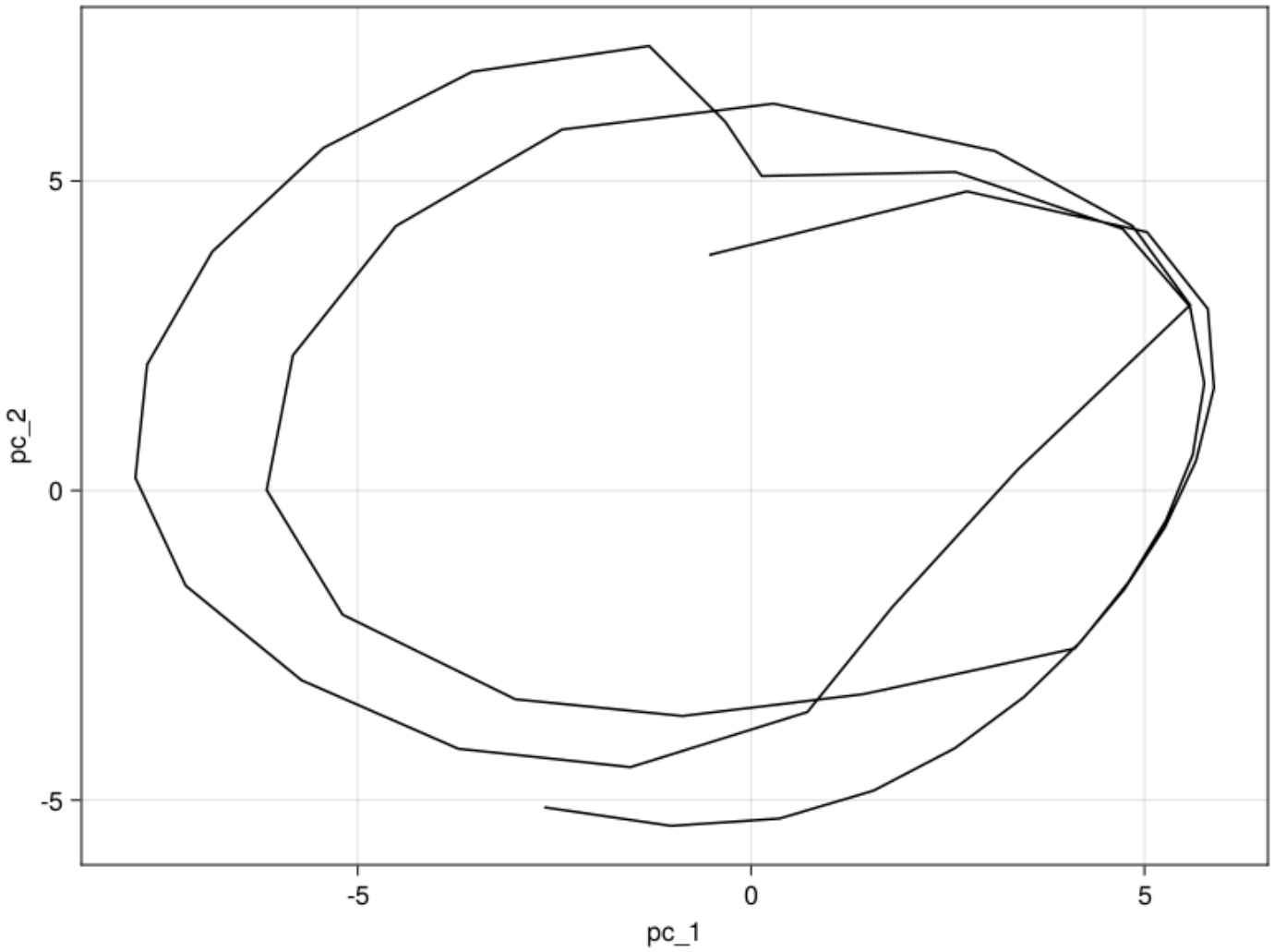
This is data.

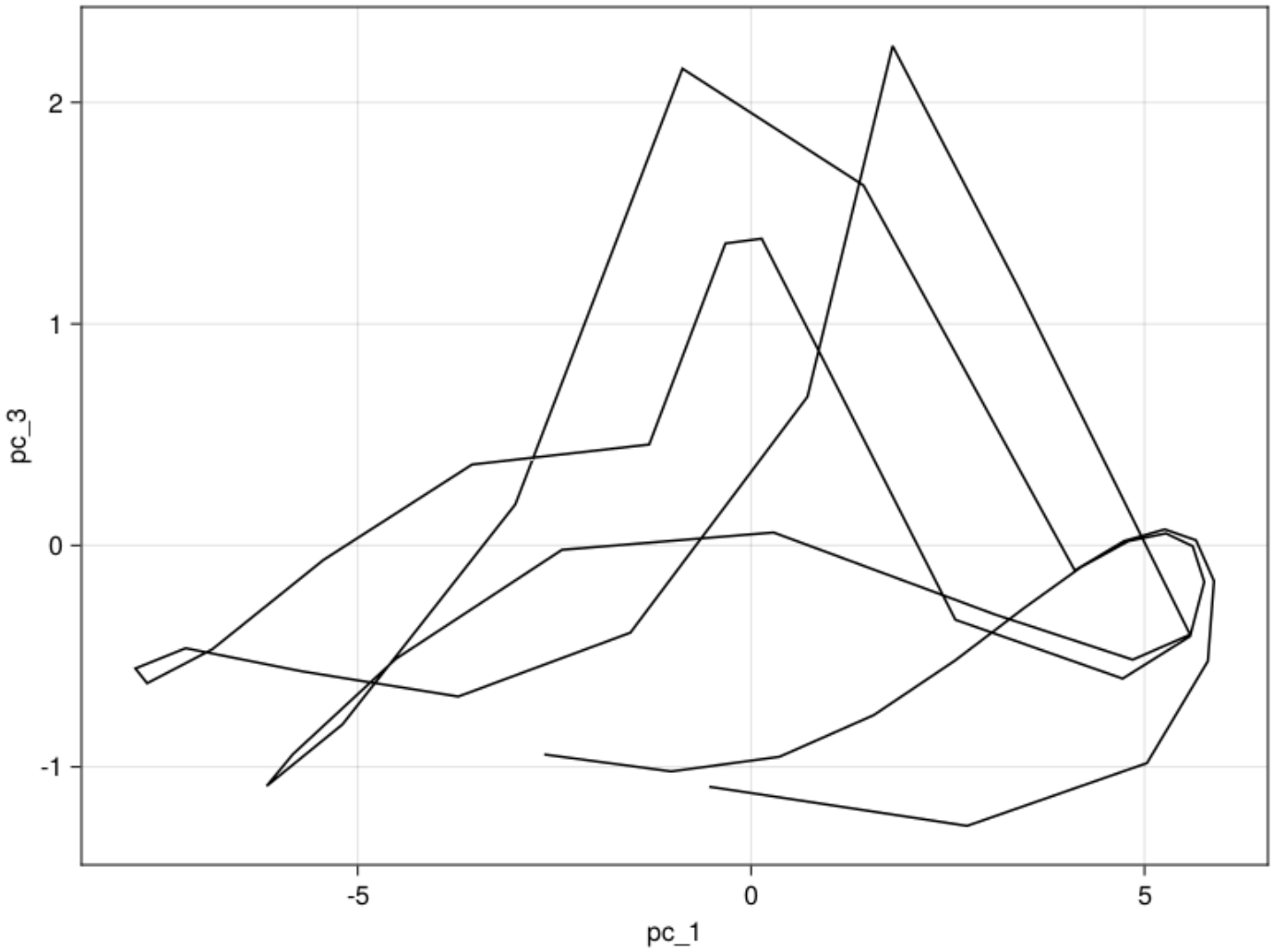


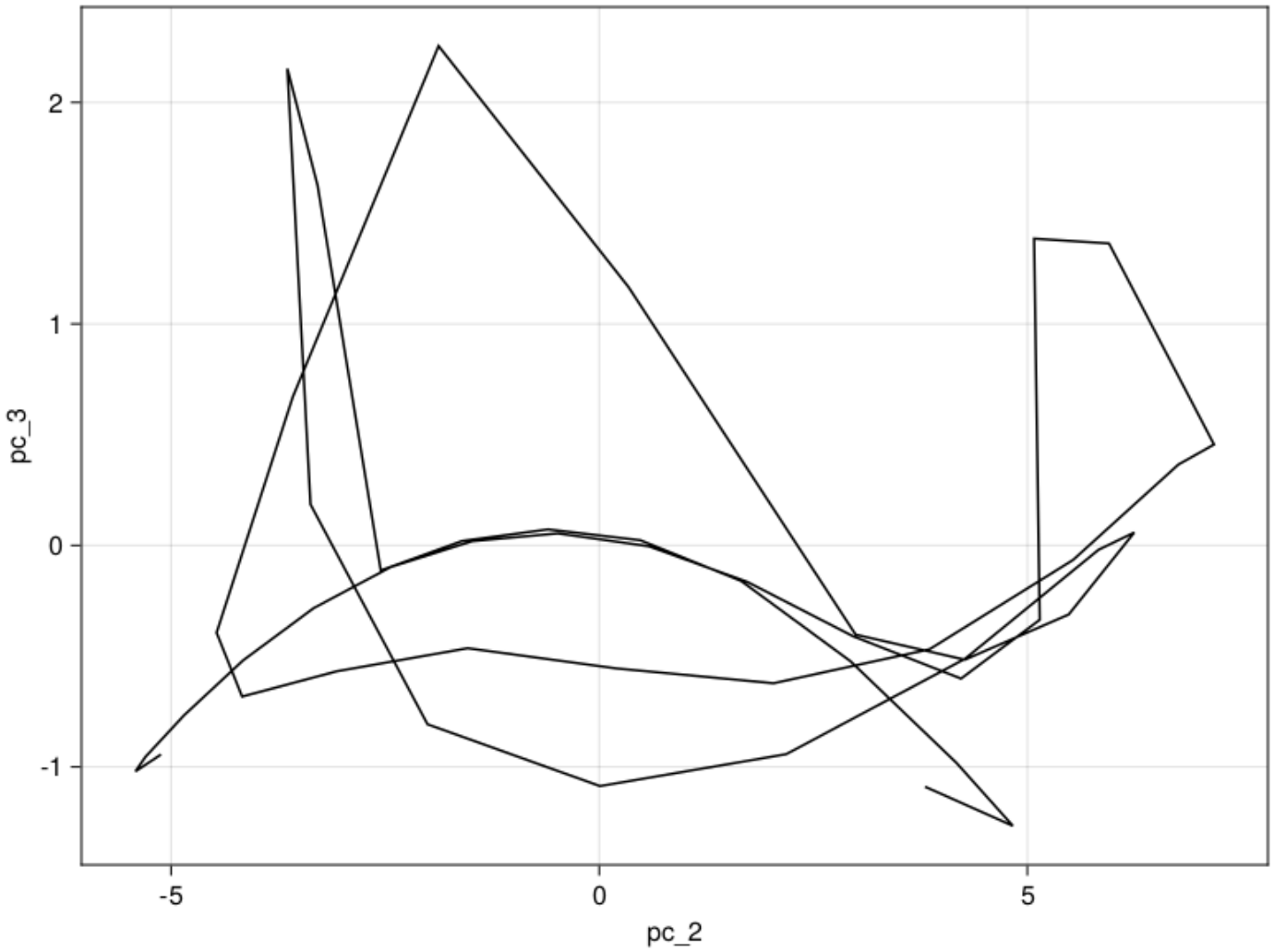

```
begin
    df_input = DataFrame(
        time = vcat(time_range, time_range, time_range, time_range),
        signal = vcat(input[1, :],
                      input[2, :],
                      input[3, :],
                      y),
        type_of_signal = vcat(["attribute 1" for i in 1:50],
                              ["attribute 2" for i in 1:50],
                              ["attribute 3" for i in 1:50],
                              ["output" for i in 1:50]),
    )
    plt_input = data(df_input) * mapping(:time, :signal; color=:type_of_signal) *
    visual(Lines)
    draw(plt_input)
end
```


5
0
-5
signal
0.0
0.2
0.4
time
type_of_signal
PC 1
PC 2
PC 3
PC 4
PC 5
attribute 1
attribute 2
attribute 3


pc_3
2
1
0
-1
5
0
-5
pc_2
-5
0
5
pc_1


5
0
-5
pc_2
-5
0
5
pc_1


2
1
0
-1
pc_3
-5
0
5
pc_1


2
1
0
-1
pc_3
-5
0
5
pc_2