Conclusions

Percentage variance accounted by first principal component of

- 0 is 17.472746198776548 %
- 1 is 35.032331329710296 %
- 2 is 12.023833232843058 %
- 3 is 12.469601565008013 %
- 4 is 11.932870060625781 %
- 5 is 16.72322528567451 %
- 6 is 17.322615395307732 %
- 7 is 16.082391353378075 %
- 8 is 12.355653906753595 %
- 9 is 16.080566894742013 %

Approximately 15 principal modes can be seen (if we include only those, who are approximately 10% of the maximum), which is not comparable to 28*28 = 784.

The principle mode of variation tells us along which direction in 784-dimensional pixel-space there is maximum variability in how people write that digit. Also, we can see that in the range covered by the principal mode, that there is a wide variation in the way people write digits, which is very prominent in the case of digit 1 with approximately 35% variance.