

Homework 2: Independent Component Analysis

Name: Shun Zhang

Email address: `jensen.zhang@utexas.edu`

EID: sz4554

1 Independent Component Analysis

In this report, I applied Independent Component Analysis on Blind Source Separation problem.

2 Experiment

Frobenius Norm.

3 Discussion

4 Conclusion

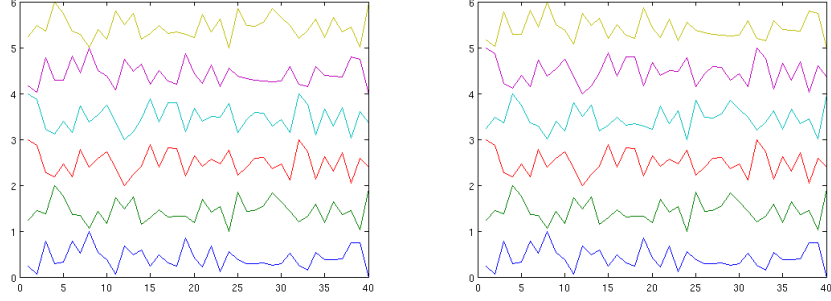


Figure 1: The bottom 3 lines are original signals from `icaTest.mat`. The top 3 lines are reconstructed signals with $\eta = 0.01$ and 1000000 iterations. The results are scaled into $[0, 1]$ interval. This experiment is repeated twice. The results are in the figures shown above. The result can be permutation of the original sources. In the left figure, the mapping is 0-4, 1-5, 2-3. While in the right one, the mapping is 0-5, 1-3, 2-4.

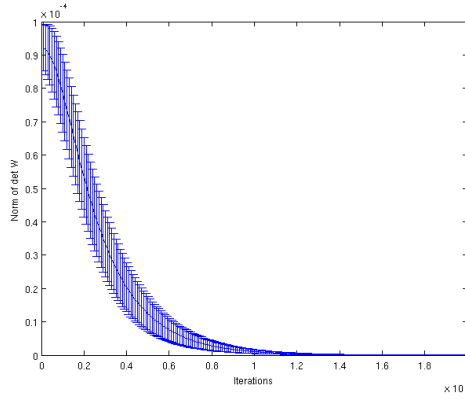


Figure 2: ΔW over number of iterations. Average of 5 runs. The length of vertical bars is σ assuming Gaussian distribution of data points at each iteration.