CV201 HW2

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1 Estimation: Comparisons with the Nearly-exact Values

1.1 HW2: Nearly-Exact expectation

* This table is different from the answers from HW2. After doing this exercise I've returned to solve my bug and find that was multiprocessing problem. This is my result after fixing this bug

temperature	$\hat{E}_{Temp}(X_{(1,1)}X_{(2,2)})$	$\hat{E}_{Temp}(X_{(1,1)}X_{(8,8)})$
1	0.9544	0.912
1.5	0.7754	0.5756
2	0.5014	0.133

1.2 Independent Sample

temperature	$\hat{E}_{Temp}(X_{(1,1)}X_{(2,2)})$	$\hat{E}_{Temp}(X_{(1,1)}X_{(8,8)})$
1	0.9238	0.5414
1.5	0.7474	0.3656
2	0.5240	0.1056

1.3 Ergodicity

temperature	$\hat{E}_{Temp}(X_{(1,1)}X_{(2,2)})$	$\hat{E}_{Temp}(X_{(1,1)}X_{(8,8)})$
1	0.9514	0.9030
1.5	0.7649	0.5433
2	0.5092	0.1144

Ergodicity method look much closer to the method that calculate the expectation from the previous HW. The reason for that I suspected is that 25 sweeps

for a samples is not enough so I've decided to do another experiment with 75 sweeps for each sample and the results was very similar to the other methods

2 Image Restoration

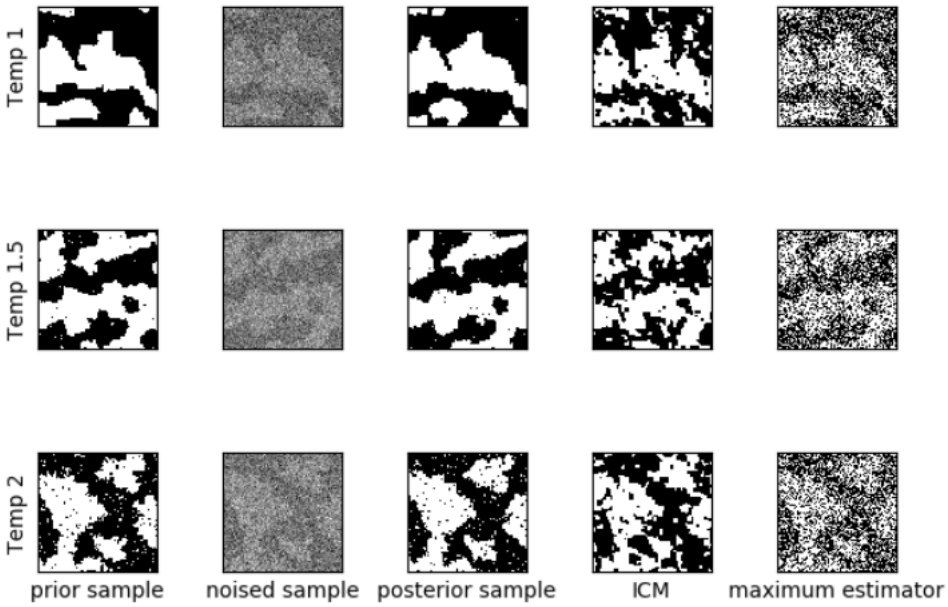

Figure 1: Image restoration exercise