Comparison on the Toy Data

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Settings:
Each Restaurant is a 5 by 5 matrix, composed of 1-5 bars with extra noise.

ME algorithm:

(1) Find bars:

  (i) While the number of dishes doesn't change any more

  (ii) Decompose Restaurants:

    (a) GO through all Restaurants in random order: Randperm(J)

    (b) Sample customer assignment for each new table proposal

    (c) Make the new table with the best proposal(Hard assignment)

    (d) TKM(Local Table/Dish+Merge Dish)

    (e) Accept the new config

  (iii) End

(2) Find Higher log Probability P:

  (i) While P doesn't change any more

  (ii) Decompose Restaurants:

    (a) GO through all Restaurants in random order: Randperm(J)

    (b) Sample customer assignment for each new table proposal

    (c) Make the new table with the sampled proposal(Soft assignment)

    (d) TKM(Local Table/Dish+Merge Table)

    (e) Accept/Reject

  (iii) End

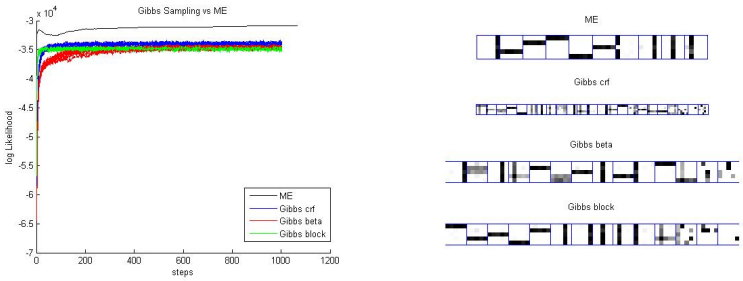

Figure 1: 200 Restaurants:
10 runs for Gibbs crf,beta,block with 1000 iterations;
1 run ME with 10 iterations(the step is fake for comparison purpose)

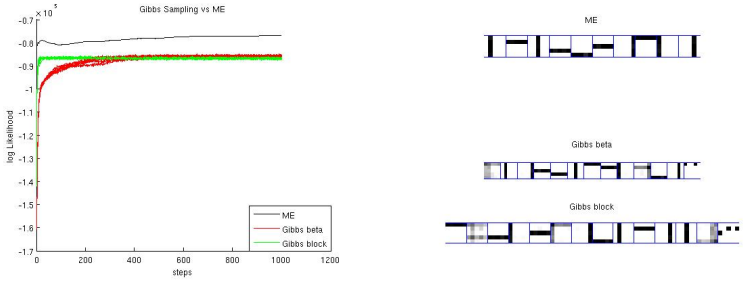

Figure 2: 500 Restaurants:
10 runs for Gibbs beta,block with 1000 iterations;
1 run ME with 10 iterations(the step is fake for comparison purpose)

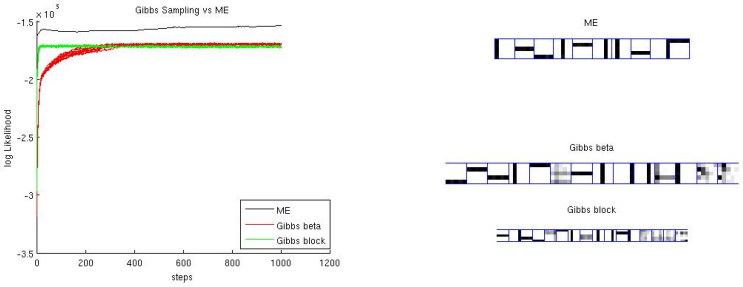

Figure 3: 1000 Restaurants:
10 runs for Gibbs beta,block with 1000 iterations;
1 run ME with 10 iterations(the step is fake for comparison purpose)