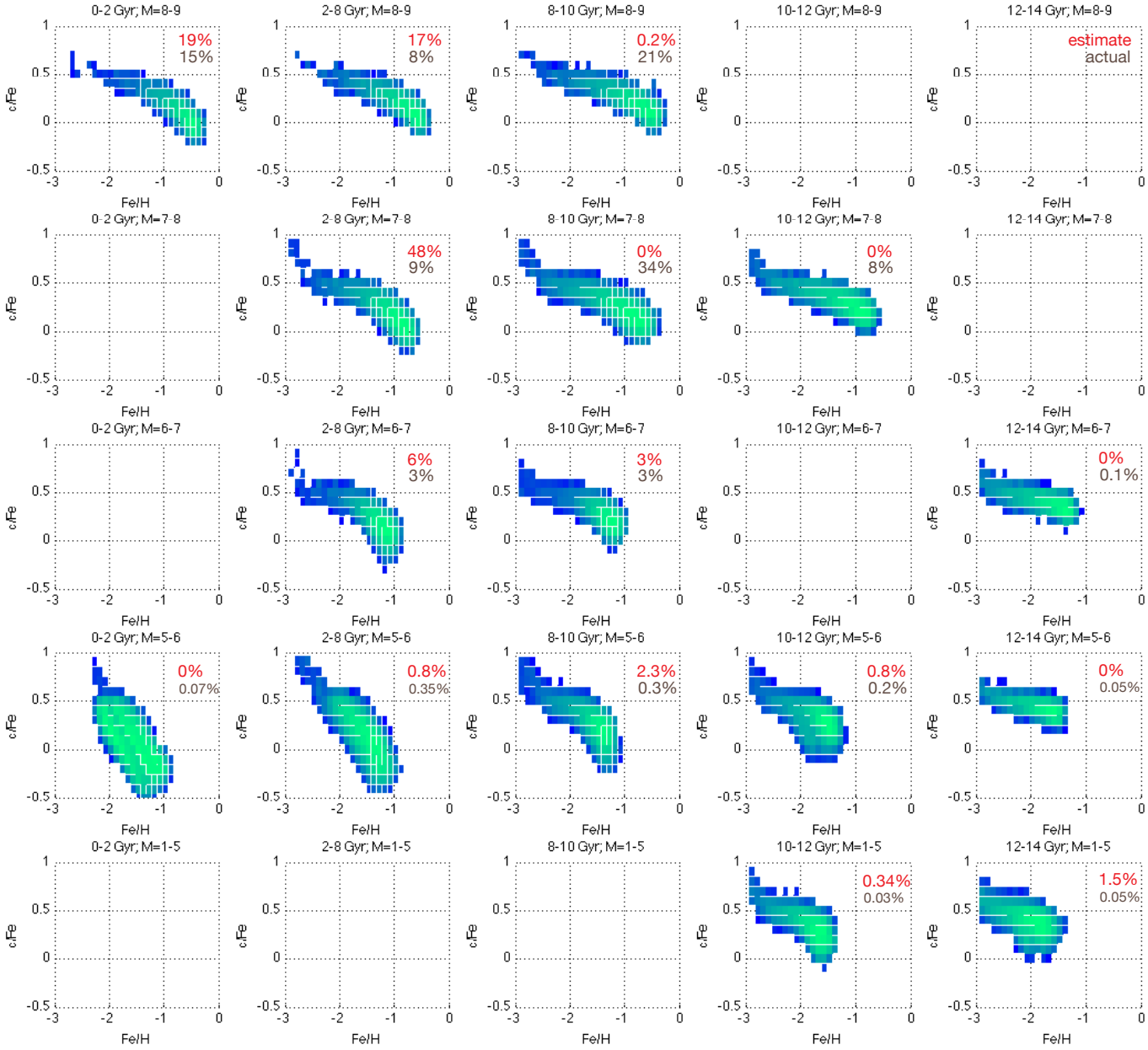
Model 3

10-11-10

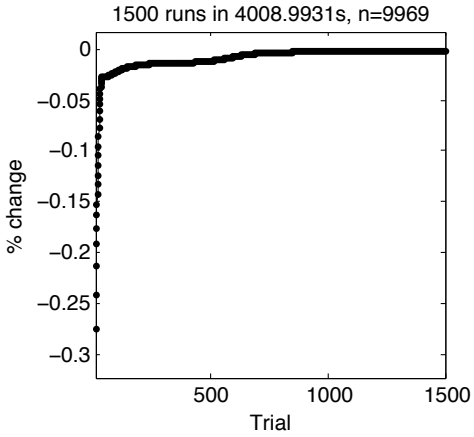


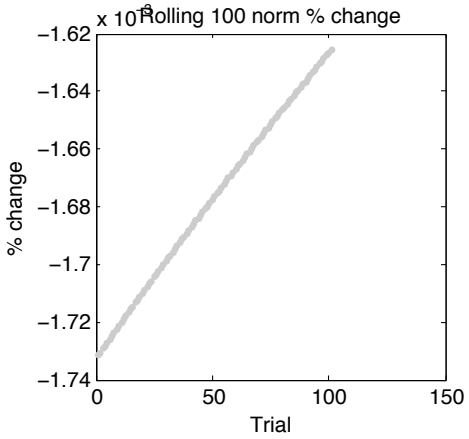
88%	2%
7%	4%

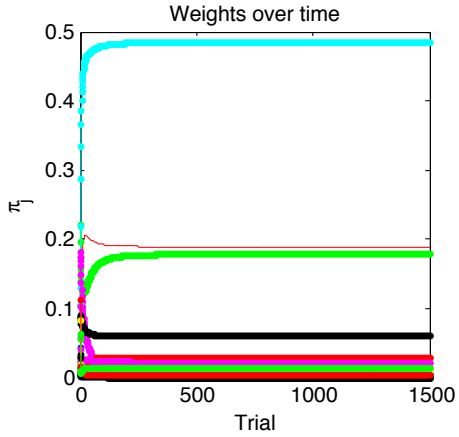
$$l(\theta) := \log L(\theta) = \sum_{i=1}^{n} \log \Big(\sum_{j=1}^{m} \pi_j f_{a_j,b_j}(x_i, y_i) \Big)$$

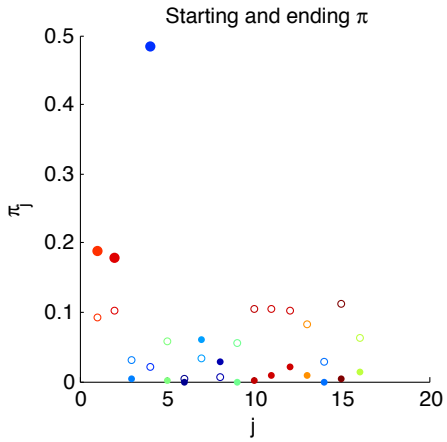
	True	EM 10k
Observed 2 $l(\theta)$	-39568	-37217

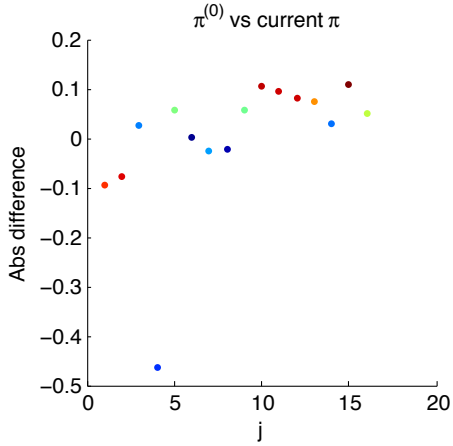
Model 3 EM 10k (1500 iterations)

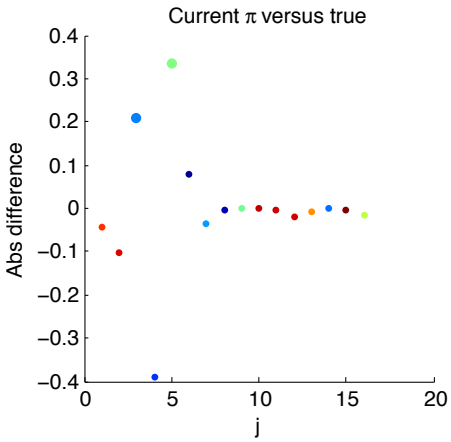


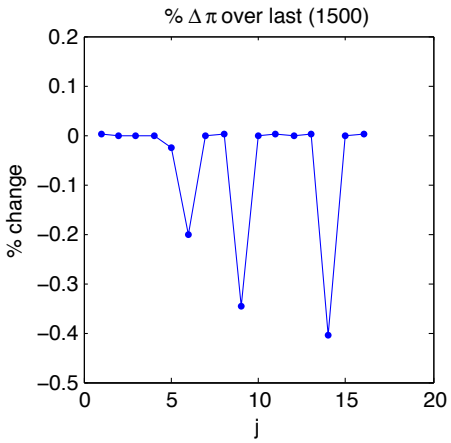


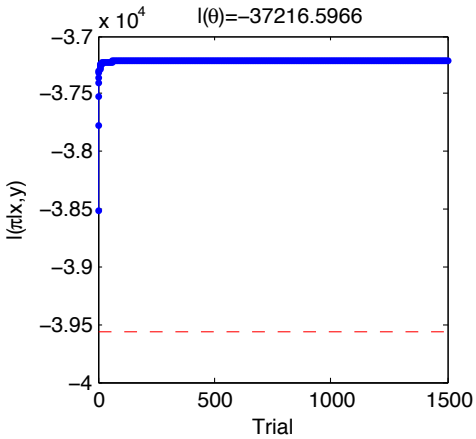


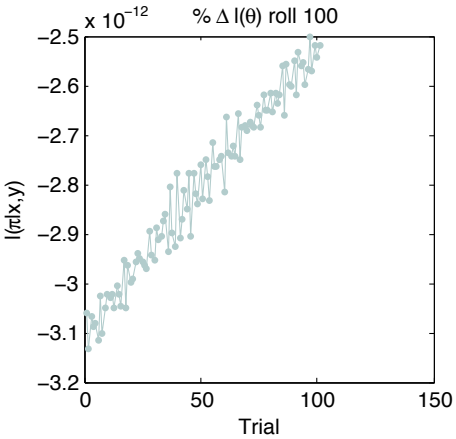




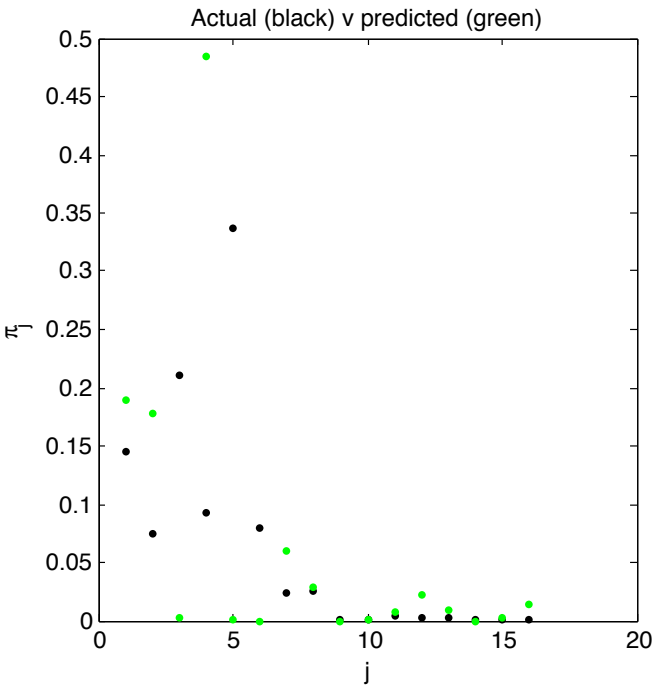


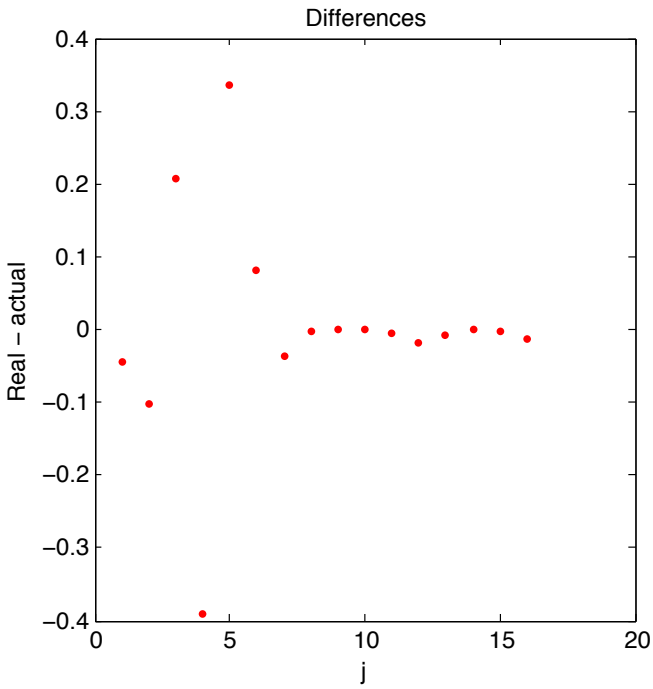




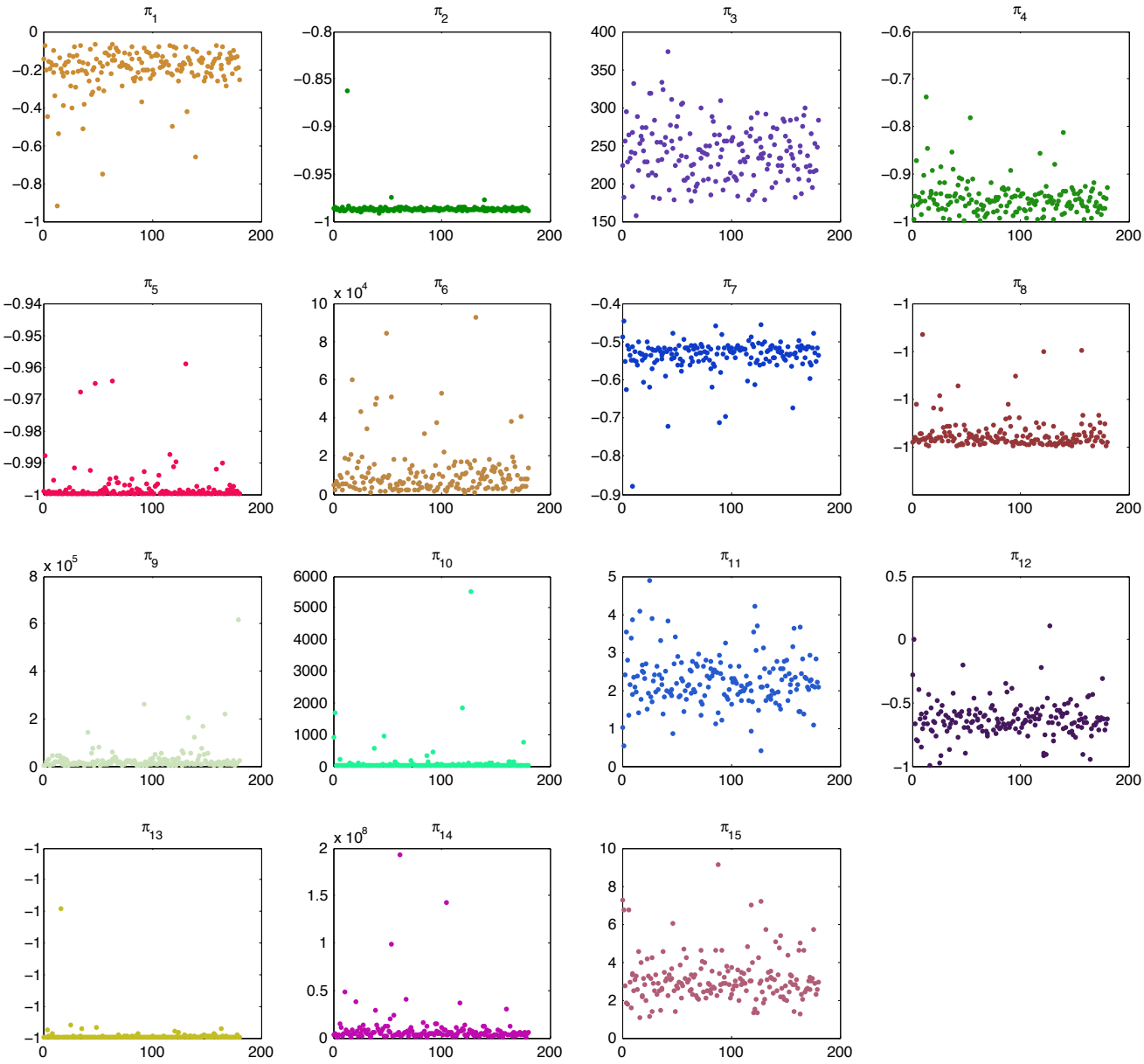


Model 3 EM pi v true pi (1500 iterations)

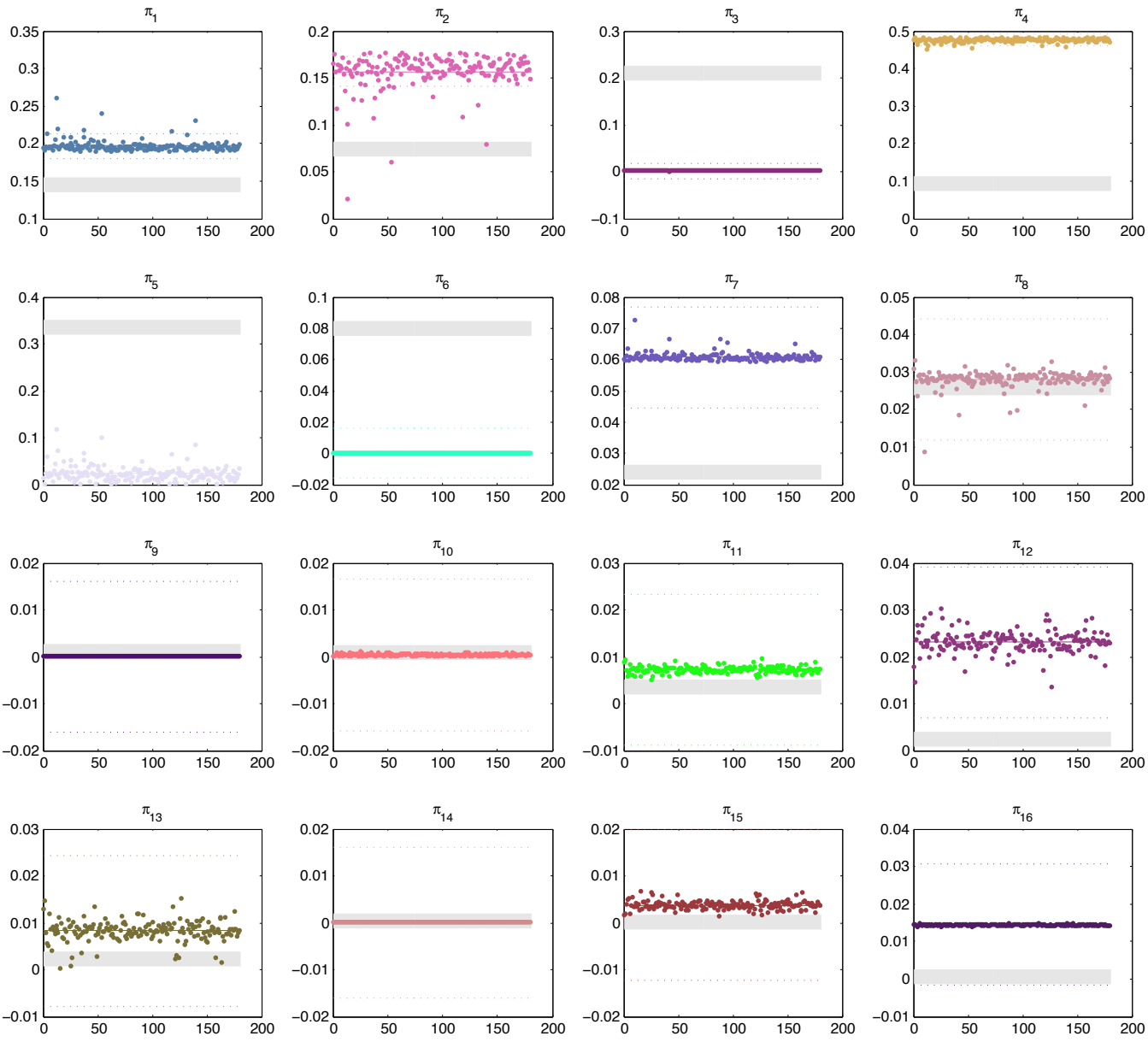




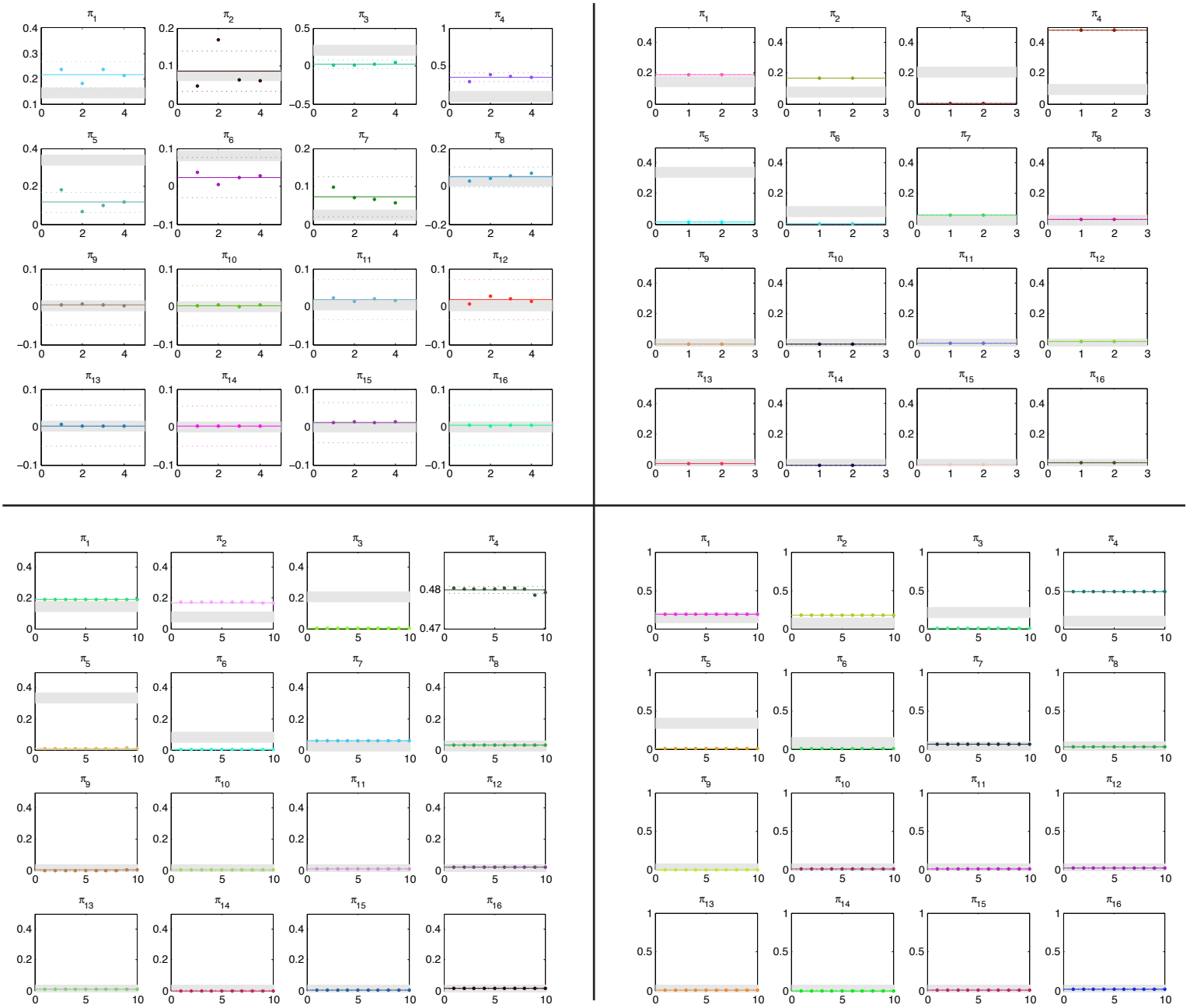
Model 3 Weight % change from 180 EM runs with random initialization (60 iterations)



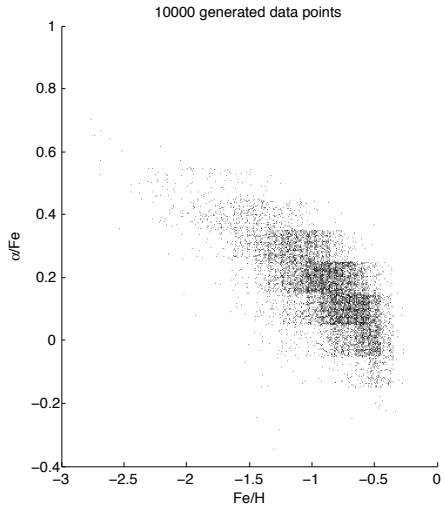
Model 3 Weights from 180 EM runs with random initialization (60 iterations)

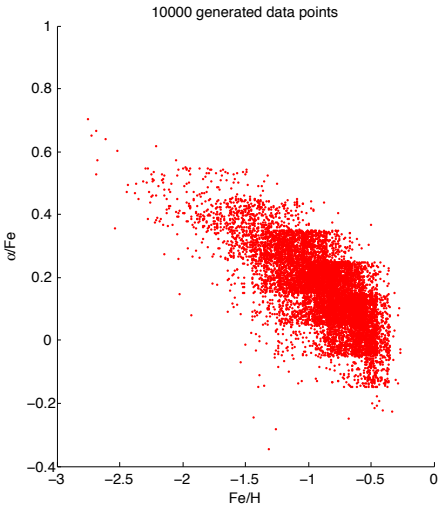


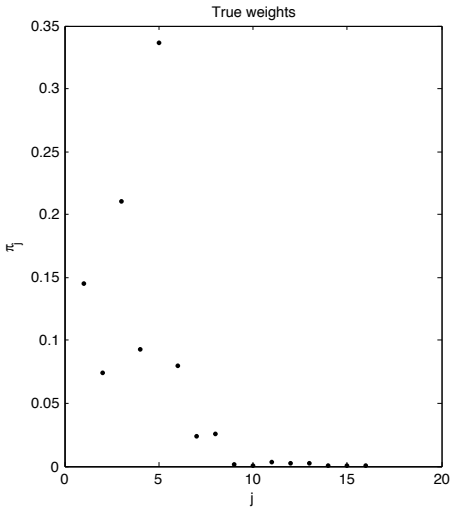
Model 3 Est. weights using init weights of true weights +/- [0,3,10,30]%

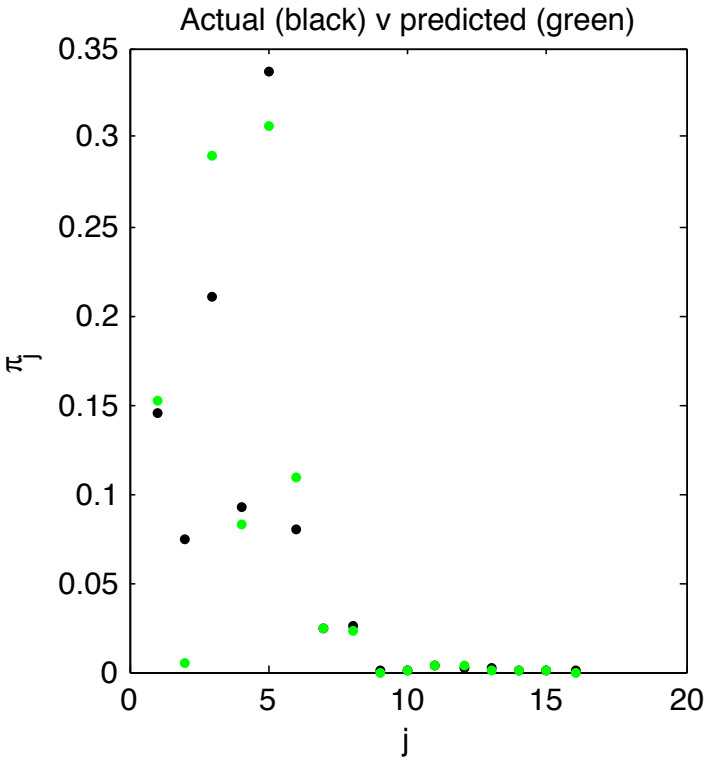


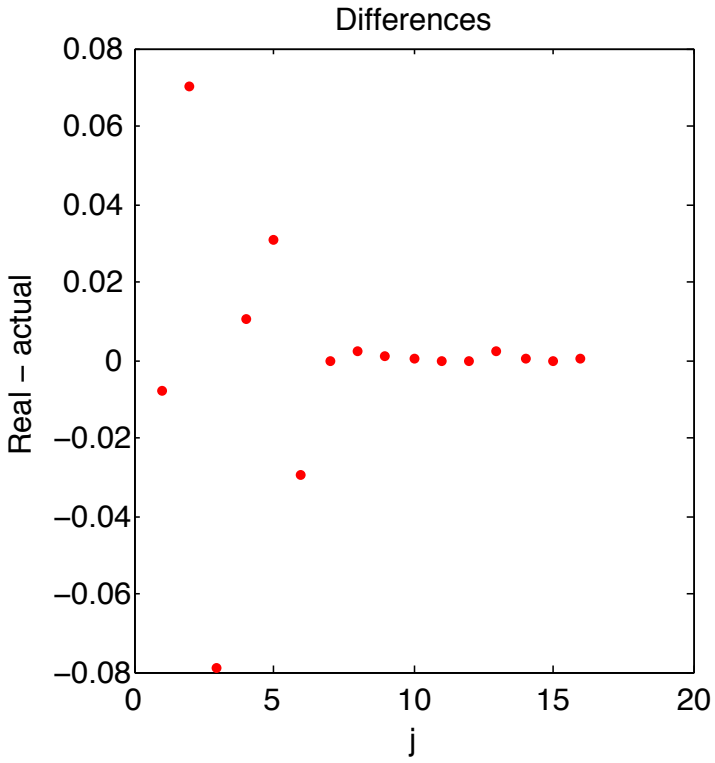
Generated EM using true weights



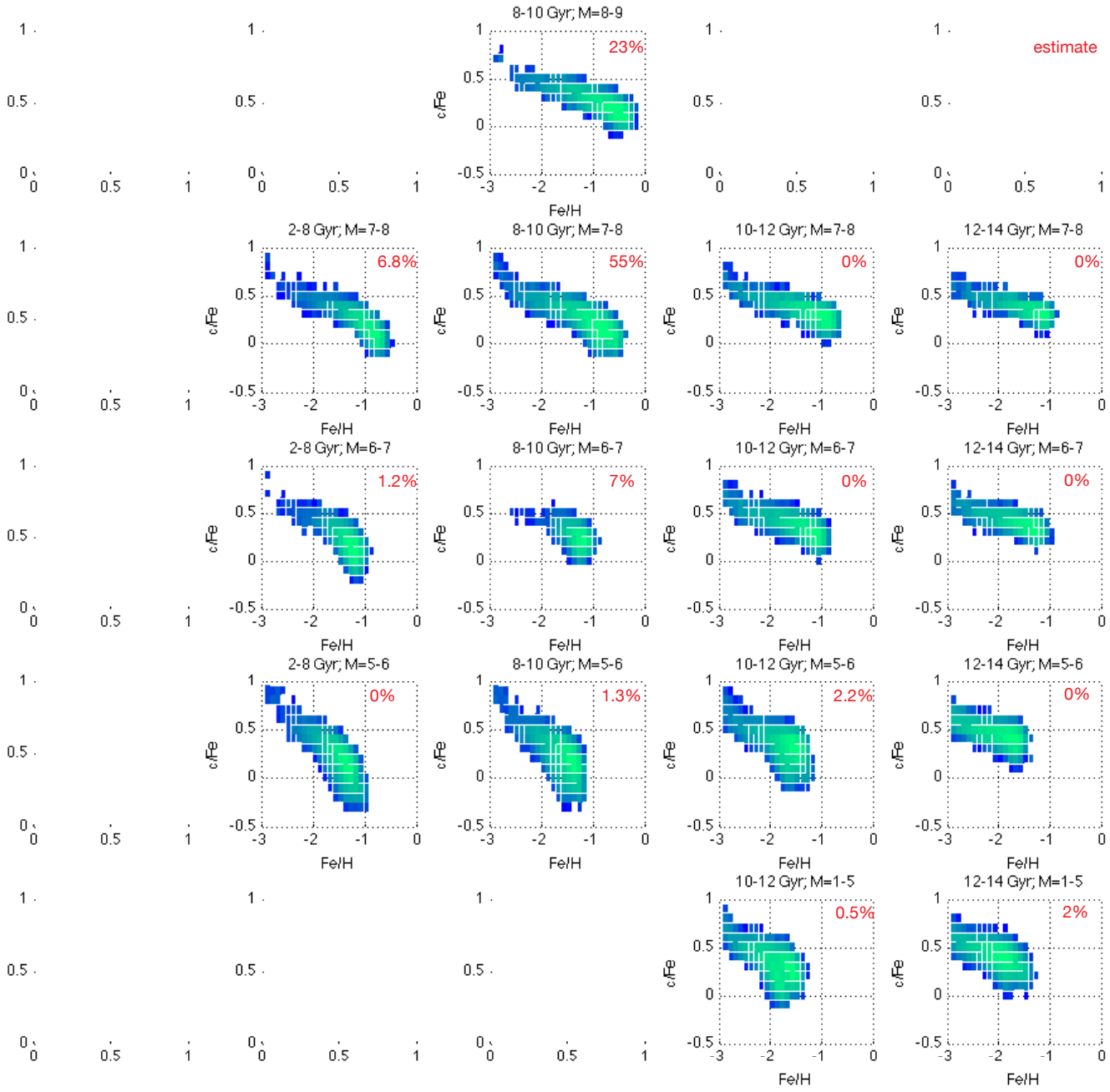






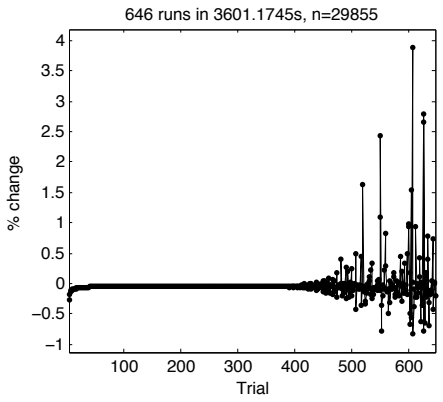


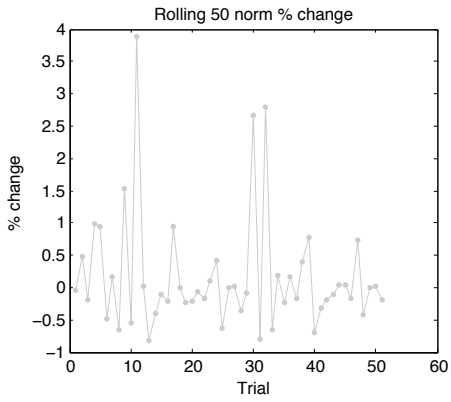
Model 5

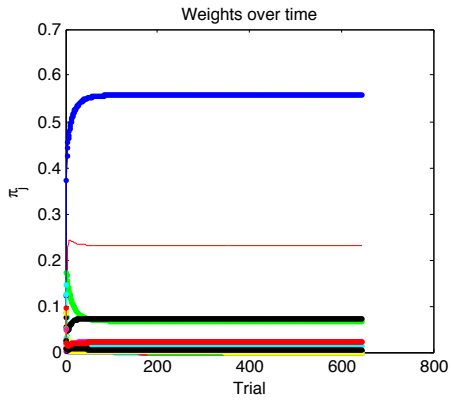


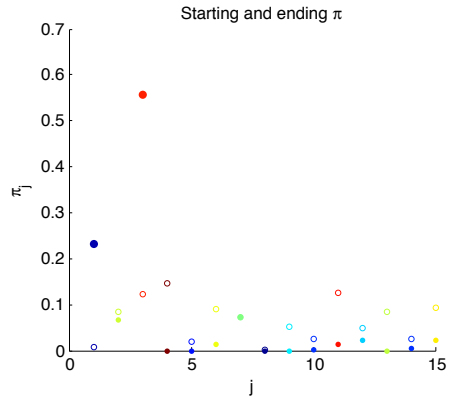
49%	39%
4%	5%

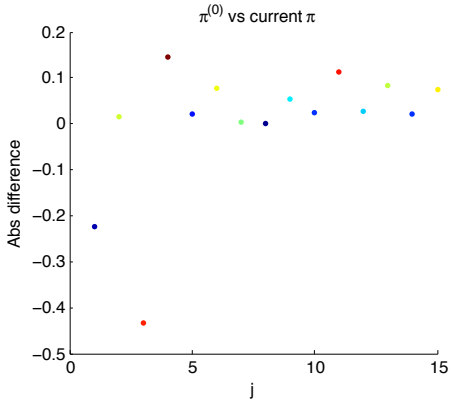
Model 5 EM

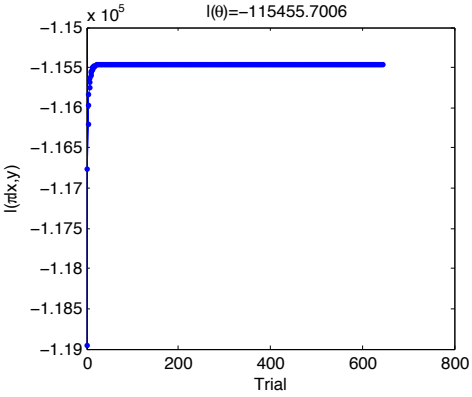

646 runs in 3601.1745s, n=29855
% change
Trial

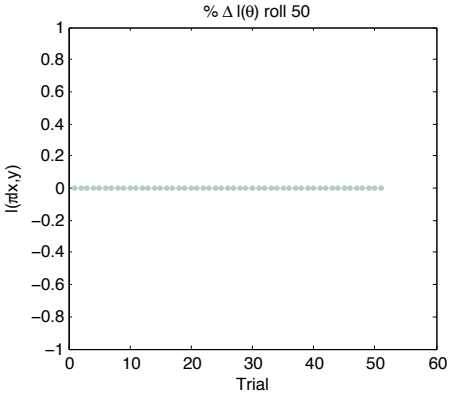

Rolling 50 norm % change
% change
Trial


Weights over time
Trial


Starting and ending π
j


π(0) vs current π
Abs difference
j


x 10^5
l(θ)=−115455.7006
Trial


% Δ l(θ) roll 50
Trial