

Meeting Agenda

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- Computational efficiency.

I modified the algorithm using Minimization Maximization (MM). The basic idea is to approximate the objective by quadratic function and to solve the minimization by least-squares. The algorithm takes ~ 40 mins to decompose the brain data into a rank-(24, 24, 7) tensor. (20 mins if reducing the determination rule **Relative decrement** $\leq 0.02\%$.) The result is saved in `brain_result.Rdata`.

Updating scheme	Memory	Total Runtime	Per-iter	# Iter (depending on termination rules)
Alternating Minimization (AM)				
Minimization Maximization (MM)	okay	40 mins	16 sec	146

1. There is no asymmetric issue in my output $\Rightarrow A_1$ and A_2 are perfectly same, and the core tensor \mathcal{C} is symmetric w.r.t. first two modes.
 2. Final cost function for MM: 224, 451. $\omega = (-2.483677, 4.151929)$. What is the value for AM?
 3. Impossible to reproduce Figures 1 and 2. Randomness involved in the K-means. Should use multiple initialization e.g. `nstart = 5`, in the K-means syntax.
- Visualization of brain analysis. Plot estimated connection rather than raw connection?
 - Missing data issue.