Meeting 11 Prep

# Write out regular minimization with Lagrange multipliers

Feedback was good; method was sensible.

Investigate stationary points; interesting that we can get B in a different way, investigate local optima close to points of singularity, problems that are very difficult to overcome.

# Sigmoid Projection

No comments but is a nice way to overcome the constraints.

# EM Algorithm

## Outcome

Works, but the weights seem to be closely related to the best fitting permutation.

# NOTEARS

Investigate NOTEARS for VARs, try to get it to VARs.

*Answer: Works. Quite easy, generate a VAR in their code environment, change loss from Xt – XtW to Xt – Xt-1W, and also gradient accordingly.*

Also, what initialization do they use? Initialization is very important.

*Answer: Initialization is simply the zero matrix for W and alpha. During the iterative procedure, the initialization is the previous estimate of course.*

# MCMC

Sampling permutations, switch one around. Check paper of Rui about it.