# Computational Techniques in Latent Variable Network Models

November 23, 2018

#### 1 Introduction

#### 2 Latent Variable Models

- 1. Introduction of network data
- 2. Community detection in networks
- 3. Latent variable models
- 4. Inclusion of observed covariates

## 3 Computational Modeling Approaches

- 1. Estimation Maximization for latent class modeling
- 2. Markov Chain Monte Carlo methods for latent variable models

### 4 Data & Application

- 1. Data description
- 2. Modeling approaches
- 3. Analysis
- 4. Results

- 5 Conclusion
- 6 References
- A Estimation Maximization Code
- B Markov Chain Monte Carlo Code
- C Figures Code