

1. Introduction

- Variable selection and model-X knockoffs
- Knockoff sampling is difficult

2. Characterizing knockoff distributions

- The characterization theorem
- Connection to Markov chain Monte Carlo (MCMC)

3. Metropolized knockoff sampling (Metro)

- How it works
- Time complexity and graphical structure

4. **Good proposals inspired by the MCMC literature**

- Covariance-guided proposal
- Multiple-try Metropolis (MTM)

5. Simulation results

6. Discussion

Choosing proposals

