## Contents

1. **Fundamentals of Stein’s method**  
   1.1. Stein’s method for univariate normal approximation  
   1.2. Abstract view on Stein’s method

2. **Stein’s method for absolutely continuous univariate distributions**  
   2.1. Principles of finding a Stein type characterization  
   2.1.1. The differential equation approach  
   2.1.2. The density approach  
   2.1.3. The parametric approach by Ley and Swan  
   2.1.4. The Malliavin calculus approach  
   2.2. The problem of support  
   2.3. The exchangeable pairs approach for absolutely continuous univariate distributions  
   2.3.1. Exchangeable pairs and the density approach  
   2.4. Modification of Stein’s equation by exchangeable pairs  
   2.5. Stein’s method for Beta distributions  
   2.6. The Pólya urn model  
   2.7. Wigner’s semicircle law  
   2.8. The arcsine law

3. **Multivariate normal approximation and the classical compact groups**  
   3.1. Stein’s method for multivariate normal distributions  
   3.1.1. The Stein equation and its solution  
   3.1.2. The exchangeable pairs approach for multivariate normal approximation  
   3.2. Spectral properties of large random matrices from the classical compact groups  
   3.2.1. Traces of powers  
   3.2.2. Linear eigenvalue statistics

A. **Appendix**  
   A.1. A general version of de l’Hôpital’s rule  
   A.2. The Gibbs sampler