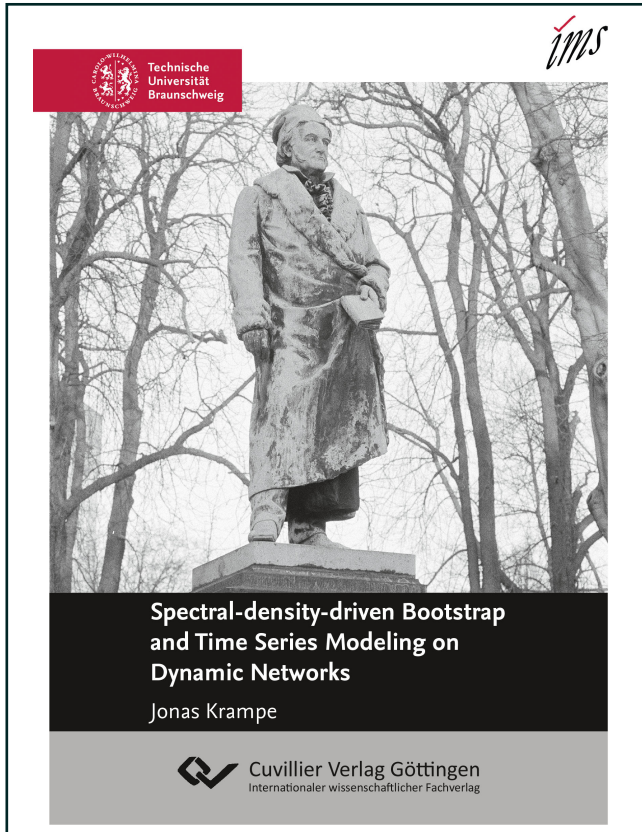




Jonas Krampe (Autor)

Spectral-density-driven Bootstrap and Time Series Modeling on Dynamic Networks



<https://cuvillier.de/de/shop/publications/7832>

Copyright:

Cuvillier Verlag, Inhaberin Annette Jentsch-Cuvillier, Nonnenstieg 8, 37075 Göttingen, Germany

Telefon: +49 (0)551 54724-0, E-Mail: info@cuvillier.de, Website: <https://cuvillier.de>



Contents

| | |
|--|------------|
| Abstract | I |
| Zusammenfassung | III |
| Acknowledgment | V |
| 1 Introduction | 1 |
| 1.1 Time Series Fundamentals | 1 |
| 1.2 Overview of Bootstrap Methods for Time Series | 4 |
| 1.3 Network Fundamentals | 6 |
| References | 9 |
| 2 Spectral-Density-Driven Bootstrap | 13 |
| 2.1 Introduction | 13 |
| 2.2 Estimated Wold Representation | 16 |
| 2.2.1 Moving Average and Autoregressive Representation | 16 |
| 2.2.2 Estimating the Coefficients of the Wold Representation | 18 |
| 2.2.3 Spectral Density Estimators | 22 |
| 2.3 Spectral-Density-Driven Bootstrap | 23 |
| 2.3.1 The Spectral-Density-Driven Bootstrap Procedure | 23 |
| 2.3.2 Comparison with other Linear Bootstrap Procedures | 25 |
| 2.3.3 Bootstrap Validity | 26 |
| 2.4 Numerical Examples | 30 |
| 2.4.1 Simulations | 30 |
| 2.4.2 A Real-Life Data Example | 31 |
| 2.5 Conclusions | 34 |
| 2.6 Proofs | 35 |
| 2.7 Estimation of a Moving Average Model | 45 |
| 2.8 Comparison with the Linear Process Bootstrap | 47 |
| 2.9 Additional Simulation Results | 52 |
| 2.9.1 Sample Size $n = 128$ | 52 |



| | | |
|----------|---|-----------|
| 2.9.2 | Sample Size $n = 512$ | 53 |
| 2.10 | Additional proofs | 55 |
| | References | 59 |
| 3 | Time Series Modeling on Dynamic Networks | 63 |
| 3.1 | Introduction | 63 |
| 3.2 | Time Series Modeling on Dynamic Networks | 64 |
| 3.3 | Statistical Results for Doubly Stochastic Network Processes | 71 |
| 3.4 | Numerical Examples | 82 |
| 3.5 | Real Data Example | 90 |
| 3.6 | Conclusions | 94 |
| 3.7 | Proofs | 95 |
| | References | 119 |