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Special Issue Reprint

## Advances in Statistical Simulation and Computing

**Edited by: Francisco Novoa-Muñoz and Bernardo M. Lagos-Álvarez**

This Reprint collects recent advances in statistical simulation and computing, highlighting their central role in modern statistical methodology and data driven research. Simulation-based approaches provide flexible and powerful tools for analyzing complex systems characterized by high dimensionality, stochastic behavior, and computational constraints that limit the use of purely analytical techniques.

The Reprint brings together methodological, computational, and applied contributions that reflect current developments in Monte Carlo methods, Bayesian computation, simulation-based inference, and stochastic modeling. Particular attention is given to algorithmic efficiency, scalability, and reproducibility, as well as to the integration of statistical simulation with emerging computational paradigms such as parallel and high-performance computing. By presenting both theoretical developments and practical applications, this Reprint illustrates how statistical simulation supports rigorous inference, uncertainty quantification, and decision making across a broad range of scientific domains, including health sciences, environmental modeling, engineering, and complex data analysis. The collected works provide a comprehensive overview of contemporary trends while offering perspectives that inform future research directions in statistical simulation and computing.

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