

Special Issue

Bayesian Statistical Analysis of Big Data and Complex Data

Message from the Guest Editor

Advances in technologies including communications, mobile devices, digital sensors and DNA sequencing lead to not only large amounts but also complicated structures of data and change the environment of statistical analysis. Big data can be described by the size of the data, the speed of incoming and outgoing data, the sources and types of data and the messiness and trustworthiness of data. Regarding the analysis of big data, the tremendous volume and the speed of incoming and outgoing data hinder statistical analysis. Further, the complicated structure of data with more parameters in the statistical model makes the statistical analysis even harder. Bayesian approaches have an additional burden to model the parameters with the prior distributions. To cope with the difficulties of Bayesian statistical analysis, many efficient computational methodologies are proposed and expected that encompass the dimension reduction methods, the integrated nested Laplace approximations, the hidden Markov chains, the multi-chain Markov chain Monte Carlo, the multi-stage Monte Carlo and the sequential Monte Carlo methods.

Guest Editor

Dr. Duchwan Ryu

Department of Statistics and Actuarial Science, Northern Illinois University, DeKalb, IL 60115, USA

Deadline for manuscript submissions

closed (10 June 2025)



Mathematics

an Open Access Journal
by MDPI

Impact Factor 2.2
CiteScore 4.6



mdpi.com/si/154721

Mathematics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
mathematics@mdpi.com

[mdpi.com/journal/
mathematics](https://mdpi.com/journal/mathematics)





Mathematics

an Open Access Journal
by MDPI

Impact Factor 2.2
CiteScore 4.6



[mdpi.com/journal/
mathematics](https://mdpi.com/journal/mathematics)



About the Journal

Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

Editor-in-Chief

Prof. Dr. Francisco Chiclana

School of Computer Science and Informatics, De Montfort University,
The Gateway, Leicester LE1 9BH, UK

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), RePEc, and other databases.

Journal Rank:

JCR - Q1 (Mathematics) / CiteScore - Q1 (General Mathematics)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.4 days after submission; acceptance to publication is undertaken in 2.4 days (median values for papers published in this journal in the first half of 2025).