Special Issue

Mathematical Models in Evolutionary Ecology

Message from the Guest Editor

Mathematical models are essential to our understanding of the natural world. The process by which we continue to learn and understand the mechanics driving natural phenomena often begins with verbal hypotheses explaining an observation, from which one extracts the essential components into a tractable mathematical theory. Darwin's theory of evolution by natural selection is a case in point. However, just as natural populations evolve, so do our models of the natural world. In addition, advances in molecular techniques for obtaining whole-genome sequence data could revolutionize our ability to test hypotheses of evolution and ecology. Even today there are misconceptions about the role of mathematics in biology. Rigorous analysis of the properties of a tractable model incorporating at least the most relevant characteristics of a particular system, and the model's predictions, can be a stronger test of a verbal hypothesis than any open-ended experiment or exploratory data analysis. The purpose of this Special Issue is to publish theoretical advancements relevant for evolution and/or ecology, as well as critical assessments of current theory through genomic data analysis.

Guest Editor

Dr. Bjarki Eldon

Leibniz Institute for Evolution and Biodiversity Science, Museum für Naturkunde, 10115 Berlin, Germany

Deadline for manuscript submissions

closed (15 May 2024)

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).