Special Issue

Mathematical Foundations and Their Applications in Optical Sciences

Message from the Guest Editors

In the classical scenario, light displays the form of electromagnetic waves, while it assumes that of corpuscles (photons) in quantum mechanics. New phenomena and physical effects involving light propagation have been discovered, and their interpretations have been evolving. Mathematical models of optics must evolve as well and must be suitable for describing light properties and light speed invariance consistently, from reference frames both at rest and in relative motion. The main scope of the topic is to show whether there is consistency between the formalism of mathematics adopted by the theory describing the properties of light and the observed results of optics in both classical and quantum contexts.

  The requirement of consistency is of primary significance in the interpretation of the optical effects where light speed invariance may be tested, such as when light propagates along closed moving contours. Still, original innovative submissions, dealing with mathematical models of optics and photonics, are welcome.

Guest Editors

Prof. Dr. Gianfranco Spavieri

Centro de Física Fundamental, Universidad de Los Andes, Merida 5101, Venezuela

Prof. Dr. Espen Gaarder Haug

School of Economics and Business, Norwegian University of Life Sciences, 1430 Ås, Norway

Deadline for manuscript submissions

30 September 2025

Axioms

mdpi.com/journal/axioms

About the Journal

Message from the Editor-in-Chief

Axioms is dedicated to the foundations (structure and axiomatic basis, in particular) of mathematical theories, not only from a crisp or strictly classical sense, but also from a fuzzy and generalized sense. This includes the more innovative current scientific trends, devoted to discover and solve new challenging problems. The prime goal of *Axioms* is to publish first-class, original research articles under an open access policy with minimal fees for the authors. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

Prof. Dr. Humberto Bustince
Department of Statistics, Computer Science and Mathematics, Public University of Navarra, 31006 Pamplona, Spain

Author Benefits

Open Access
— free for readers, with article processing charges (APC) paid by authors or their institutions.

High visibility:
indexed within SCIE (Web of Science), dblp, and other databases.

Journal Rank:
JCR - Q2 (Mathematics, Applied)