Special Issue

Demystifying the Dark Sector of the Cosmos in the Lab: Astrophysical Ingredients in Laboratory Searches near the Quantum Limit

Message from the Guest Editor

This Special Issue aims to review new methods in laboratory searches for dark matter (DM) axions or ALPs that are approaching fundamental quantum sensitivity limits. Emphasis will be placed on advanced technologies and innovations intended to broaden the search range or significantly enhance the scan rate. We invite original research articles and review papers for this Special Issue. Topics of interest include, but are not limited to, experimental efforts that implement state-of-the-art technologies to explore the parameter space of axions and axion-like particles (ALPs). Contributions presenting new ideas in dark photon research are also welcome. Detector developments and quantum-enhanced detection schemes are among the discovery prospects associated with ongoing and future axion research.

Guest Editor

Dr. Antonios Gardikiotis
Institute of Quantum Computing and Quantum Technology, NCSR "Demokritos", Athens, Greece

Deadline for manuscript submissions

31 January 2026

Symmetry

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 5.3

mdpi.com/si/223086

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

mdpi.com/journal/symmetry

Symmetry

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 5.3

mdpi.com/journal/symmetry

About the Journal

Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

Editor-in-Chief

Prof. Dr. Sergei Odintsov
1. ICREA, 08010 Barcelona, Spain
2. Institute of Space Sciences (IEEC-CSIC), C. Can Magrans s/n, 08193 Barcelona, 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), Scopus, CAPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Multidisciplinary Sciences) / CiteScore - Q1 (General Mathematics)

MDPI