

# Special Issue

## Topics Related to Physics of the Heavy Quarks and Related States

### Message from the Guest Editor

The study of heavy quarks and the related field of particle physics began approximately 50 years ago with the prediction of the charmed quark and the experimental observation of the J/psi meson. Research in this field has seen significant developments over the years, with a great deal of knowledge gained, but many questions remain unanswered. Among these questions, we can mention, for example, the calculation of higher-order corrections, clarification of the effect of the color-octet processes, and theoretical research and experimental study of the properties of doubly heavy baryons. Also noteworthy are exotic particles, built from four or more heavy quarks (such as the recently observed cccc tetraquarks). Theoretical description of these and similar states would be invaluable. The proposed Special Issue of *Symmetry* intends to focus on the above topics. We hope that it will provide an overall picture of the discussed problems and up-to-date findings and that researchers, students, and readers alike will benefit from the contributions.

### Guest Editor

Dr. Alexey Luchinsky

1. IHEP, Protvino, Russia
2. Bowling Green State University, Bowling Green, OH, USA

### Deadline for manuscript submissions

closed (31 January 2022)



# Symmetry

an Open Access Journal  
by MDPI

Impact Factor 2.2  
CiteScore 5.3



[mdpi.com/si/72013](https://mdpi.com/si/72013)

*Symmetry*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[symmetry@mdpi.com](mailto:symmetry@mdpi.com)

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





# Symmetry

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.2  
CiteScore 5.3



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