Special Issue

Search for New Phenomena in Heavy-Quark Physics

Message from the Guest Editor

Two consequences of the SM symmetries have attracted particular attention in recent years: (i) The broken SU(2) x U(1) symmetry leads to a suppression of weak transitions between quarks of the same electric charge but different flavors (flavor-changing neutral currents, FCNC). A number of tensions between SM predictions and the experimental data in FCNC decays of heavy b-quark have been observed, thus raising hopes to see the first indications of physics beyond the SM in the interactions of elementary particles; (ii) the SU(3) color gauge symmetry allows the existence not only of ordinary mesons and baryons but also of exotic multiquark hadrons; experimental data bring increasing evidence of such exotic hadrons involving one or two heavy quarks, demanding a theoretical understanding of their structure. Both of these seemingly different phenomena have a common dynamical feature: FCNC processes in the SM as well as the formation of exotic hadrons proceed through loop diagrams. This Special Issue is dedicated to recent progress in the theoretical understanding of these two interesting phenomena.

Guest Editor

Dr. Dmitri Melikhov

D.V.Skobeltsyn Institute of Nuclear Physics, M.V.Lomonosov Moscow State University, 119991 Moscow, Russia

Deadline for manuscript submissions

closed (15 February 2022)

Symmetry

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 5.3

mdpi.com/si/65374

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