



Topics Related to Physics of the Heavy Quarks and Related States

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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.





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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.

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