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Baryon Structure: Form Factors and Polarization

Guest Editors:

Dr. Monica Bertani
INFN Laboratori Nazionali di Frascati, Frascati, Italy

Prof. Dr. Simone Pacetti
1. Dipartimento di Fisica e Geologia, Università di Perugia, 06100 Perugia, Italy
2. INFN Sezione di Perugia, 06100 Perugia, Italy

Dr. Alessio Mangoni
Istituto Nazionale di Fisica Nucleare, Sezione di Perugia, Perugia, Italy

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Message from the Guest Editors

The study of baryons is fundamental for understanding the mechanisms that rule non-perturbative QCD.
The most general description of the baryon dynamics is grounded on the concept of form factors. They represent complex, energy-dependent coupling constants that parametrize the baryon four-currents.
The complexity manifests itself in the polarization of baryons, produced in charmonium decays and in electron-positron annihilation.
By exploiting the self-analyzing weak decays of hyperons, the polarization is observable and moreover, eventual connections between the strong and the electromagnetic dynamics can be studied.
In the last years, many experiments are providing more and more data sets, that, covering all kinematic regions, are going to complete the complex puzzle of baryons form factors. The interpretation of such an amount of experimental information requires a solid and well established theoretical framework. This Special Issue is conceived to provide an exhaustive and updated answer to such a request by collecting, organizing, framing all the available experimental and theoretical knowledge on baryon observables in a unique treatment.

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Editor-in-Chief

Prof. Dr. Sergei D. Odintsov
1. Institució Catalana de Recerca i Estudis Avançats (ICREA), Passeig Luis Companys, 23, 08010 Barcelona, Spain
2. Institute of Space Sciences (ICE-CSIC), C. Can Magrans s/n, 08193 Barcelona, Spain

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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Contact Us

Symmetry Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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mdpi.com/journal/symmetry
symmetry@mdpi.com
𝕏@Symmetry_MDPI