

Special Issue

Baryon Structure: Form Factors and Polarization

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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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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