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Quantum Group Symmetry and Quantum Geometry

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Deadline for manuscript submissions:
closed (30 September 2021)

Message from the Guest Editors

Dear Colleagues,

Quantum groups appeared during the eighties as the underlying algebraic symmetries of several two-dimensional integrable models. They are noncommutative generalizations of Lie groups endowed with a Hopf algebra structure, and the possibility of defining noncommutative spaces that are covariant under quantum group (co)actions soon provided a fruitful link with noncommutative geometry. At the same time, when quantum group analogues of the Lie groups of spacetime symmetries (Galilei, Poincaré and (anti-) de Sitter) were constructed, they attracted the attention of quantum gravity researchers. In fact, they provided a possible mathematical framework to model the "quantum" geometry of space–time and the quantum deformations of its kinematical symmetries at the Planck scale, where nontrivial features are expected to arise because of the interplay between gravity and quantum theory.

This Special Issue is open to contributions dealing with any of the many facets of quantum group symmetry and their generalizations...

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Editor-in-Chief

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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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