



## Symmetry and Geometry in Physics

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### Message from the Guest Editor

Dear Colleagues,

Nature organizes itself using the language of symmetry. In particular, the symmetry group of special relativity theory is the Lorentz transformation group  $SO(1,3)$ . A physical system has Lorentz symmetry if the relevant laws of physics are invariant under Lorentz transformations. Lorentz symmetry is one of the cornerstones of modern physics. However, entangled particles involve Lorentz symmetry violation. Understanding entanglement in relativistic settings has been a key question in quantum mechanics. Remarkably, a plausible candidate for the symmetry group of the spacetime of a system of  $m$   $n$ -dimensional entangled particles is the Lorentz group  $SO(m, n)$  of signature  $(m, n)$ , for any  $m, n \in \mathbb{N}...$





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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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