Special Issue

80 Years of Professor Wigner's Seminal Work "On Unitary Representations of the Inhomogeneous Lorentz Group"

Message from the Guest Editor

The present Special Issue is dedicated to celebrate the 80 years of the Professor Eugene P. Wigner paper "On Unitary Representations of the Inhomogeneous Lorentz Group", published in *The Annals of Mathematics* in 1939. Over 56 pages, the representation of the Poincaré group in the Hilbert space is rigorously constructed step by step, relating spacetime symmetries with the concept of symmetry in Quantum Mechanics. As a result, the very concept of asymptotic one particle states is presented, enhancing the role of symmetry in the foundations of Physics. The impact of Professor Wigner's work can hardly be overestimated. The spacetime symmetries, represented in the Hilbert space, could then related to the internal symmetries; the symmetries organizing interactions to be supported, or mediated, by the particle states resulting from the representation procedure. The quantum and the relativistic worlds were bound.

This volume shall contemplate topics from general aspects, going through history and philosophy, to mathematical and physical issues related to the impact of symmetries groups in the foundations of relativistic quantum physics.

Guest Editor

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Universe

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Message from the Editor-in-Chief

The multidisciplinary journal *Universe* is aiming to follow and, hopefully, to lead to the largest extent as possible the ever-self renovating threads which weave mathematical theories with our understanding of the magnificent natural world. On behalf of all the distinguished members of the Advisory and Editorial Boards, I extend my welcome to this journal and look forward to hearing from the interested contributors and learning about their valuable research.

Editor-in-Chief

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