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100 Years of Quantum Matter Waves: Celebrating the Work of Louis De Broglie

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Message from the Guest Editor

Dear Colleagues,

In 1923, Louis de Broglie published the first articles [1–3] theoretically demonstrating how to extend the wave particle duality (discovered by Einstein for photons in 1905) to any material particles, such as electrons, protons or neutrons. This seminal work provided the foundation that paved the way for modern quantum mechanics as developed by Schrodinger, and independently by Heisenberg and subsequently Dirac.

For this *Symmetry* Special Issue celebrating the anniversary of de Broglie's work, different views of the legacy of his discoveries and ideas would be discussed. Contributions emphasizing the experimental and technological consequences of his work are also welcome. Theoretical and historical works concerning quantum foundations and/or discussing alternative interpretations of quantum mechanics (not necessarily agreeing with the credo of de Broglie) are perfectly suited to this Special Issue. In particular, de Broglie–Bohm like theories (deterministic or stochastic) and models of particles using solitons will be favored. Finally, hydrodynamical or mechanical analogies could be discussed.



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Special Issue



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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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