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Hamiltonian Mechanics, Geometry and Quantization

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Deadline for manuscript submissions:
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Message from the Guest Editors

Hamiltonian mechanics leads to a multitude of geometric structures. For example, completely integrable systems lead to a Lagrangian foliation of the phase space. On the other hand, geometric description of quantum phenomena requires lifting of a symplectomorphism of the system to a connection, preserving automorphism of the prequantization line bundle over the phase space. Analysis of a Hamiltonian system with singularities leads to differential geometry of singular spaces.

This Special Issue is devoted to presentation of the current state of research in geometric analysis of Hamiltonian systems, as well as the study of geometric structures arising in Hamiltonian mechanics. This includes topological investigations in Hamiltonian mechanics and multisymplectic approaches toward theory, geometric quantization, and other generalizations.

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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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