



## Symmetry, Extended Maxwell Equations and Non-local Wavefunctions

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### Message from the Guest Editor

Dear Colleagues,

Maxwell's equations are so successful and useful that examples of their elementary and advanced applications are on display everywhere in real life. Furthermore QED, the quantum field theory obtained from the quantization of the Maxwell Lagrangian is today our most precise physical theory. Yet there is still room for extensions of Maxwell's theory, and work by several authors in the last several years has led to progress in multiple directions. One possible extension relies on the introduction of additional degrees of freedom, like the field "dA" in the extended Lagrangian of Ohmura and Aharonov–Bohm, with ensuing reduction of the gauge symmetry. These extra degrees of freedom can have major consequences in curved space (with applications to cosmology)...





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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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