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Symmetry, Algebraic Methods and Applications

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Deadline for manuscript submissions:
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Message from the Guest Editor

Dear Colleagues,

Symmetry is the fundamental law of nature. Symmetry is explicit or implicit in all fundamental equations of any realistic model describing real physical processes.

Symmetry theory aims to find, study, and use these symmetries. The main tools of the theory are algebraic and group methods used in theoretical and mathematical physics. The main goal of this issue is to present papers dealing with analytical research in this direction of scientific activity, as well as with the theory of partial differential equations (PDE).

Topics include but are not limited to:

1. The algebras of symmetry operators and the problem of exact solutions of the main equations of mathematical physics;
2. The separation of variables theory;
3. Algebraic methods and the problem of exact solutions of field equations in the theory of gravitation;
4. Applications of the methods of symmetry theory to cosmology and the theory of gravitation;
5. Algebraic methods in field theory;
6. The method of semi-algebraic sets in PDE and mathematical physics;
7. Lie symmetry for nonlinear equations;
8. The method of the inverse scaling problem;
9. hidden symmetry

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Editor-in-Chief

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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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