Symmetry in Combinatorics and Geometry

Guest Editors:

Prof. Anton Betten
Colorado State University

Prof. Ivan Cheltsov
the university of Edinburgh

Deadline for manuscript submissions:
closed (30 June 2019)

Message from the Guest Editors

Dear Colleagues,

In many fields of mathematics, the use of symmetry in the analysis of mathematical objects can lead to very powerful results. The central problems involve the construction, classification, recognition, and investigation of discrete geometry. Symmetry considerations play a key role, both for theoretical work and for practical computations. Mathematical software is essential to perform experiments. New and unexpected examples of objects can be found through computer searches. Vast computer searches can greatly enhance the range of what can be surveyed by hand. The computer classification of small cases paints a picture that approximates the general situation.

A key element of the analysis is understanding the action of the automorphism group of the object. What are all the various ways in which groups can act on combinatorial objects? Representation theory of groups can help. Applications range from classical combinatorics to geometry, number theory, and algebra all the way to applications, for instance, in information theory, computer science, and physics and chemistry.

Special Issue

Editor-in-Chief

Prof. Dr. Sergei D. Odintsov
1. Institució Catalana de Recerca i Estudis Avançats (ICREA), Passeig Luis Companys, 23, 08010 Barcelona, Spain
2. Institute of Space Sciences (ICE-CSIC), C. Can Magrans s/n, 08193 Barcelona, Spain

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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