

Symmetry in Orthogonal Polynomials

Guest Editor:

Prof. Dr. Charles F. Dunkl

Department of Mathematics,
University of Virginia,
Charlottesville, VA 22904-4137,
USA

Deadline for manuscript
submissions:

closed (16 August 2016)

Message from the Guest Editor

The concept of symmetry has been fundamental and studied for millennia. The ancient geometers already knew the five regular solids. For a long time, symmetry was a part of the discipline of geometry, but in more recent times it has become very important in analysis, mathematical physics, and of course, group theory. Symmetry is a key tool in analyzing functions of several variables. For example, the harmonic homogeneous polynomials, which are invariant under the group of rotations fixing the North Pole on the unit sphere in \mathbb{R}^N are essentially the same as Gegenbauer polynomials of index $N/2-1$. By now, this idea has been vastly generalized, for example, to interpreting Jacobi polynomials of several variables (defined on a simplex and orthogonal with respect to a Dirichlet measure) as harmonic polynomials with certain subgroup invariance properties.

In mathematical physics there are the quantum-mechanical models of Calogero–Moser–Sutherland type: N identical particles with $1/r^2$ interaction and possibly an external potential, of which wavefunctions involve Jack polynomials[...]





an Open Access Journal by MDPI

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.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility: indexed within Scopus, SCIE (Web of Science), CAPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

Journal Rank: JCR - Q2 (*Multidisciplinary Sciences*) / CiteScore - Q1 (*General Mathematics*); Q1 (*Physics and Astronomy*); Q1 (*Computer Science*)

Contact Us

Symmetry Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/symmetry
symmetry@mdpi.com
X@Symmetry_MDPI