Representations of Lie Algebras and Their Generalizations

Guest Editor:

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Deadline for manuscript submissions:
closed (30 November 2018)

Message from the Guest Editor

It is probably not an exaggeration to state that representation theory of Lie algebras and their generalizations constitutes one of the most recurring techniques encountered in mathematical and physical problems dealing with the linearization of nonlinear phenomena. Beyond structure theory, representations play a prominent role in invariant theory, both algebraic and geometric, as well as in many applications like differential equations, integrable systems, quantum groups, gauge theories, or string theory, among many other topics.

We invite researchers to contribute original papers and review articles concerning currently open problems within the representation theory of Lie algebras, superalgebras, and generalized algebraic structures, such as ternary or n-ary algebras, Leibniz algebras, etc., also covering applications in other disciplines. Articles describing new methods with strong geometrical and/or computational background are particularly welcome, as well as papers concerning methods of representation theory in chemistry, physics, and engineering sciences.

Special Issue