

Special Issue on Symmetry and Group Theory and Its Application to Few-Body Physics

Call for Papers

Symmetries play an increasingly important role throughout mathematics, physics, chemistry, solid state physics, nuclear physics, particle physics, and other branches. Since Galois theory was proposed in 1830, the years have witnessed fruitful applications of group theoretical methods. Earlier in the 1920s, Weyl found the importance of group representations in modern physics. As a natural tool, the group theory helps us to understand the symmetry properties of a system and the nature of physical laws. There is also new development in applying the group theoretical approach to various fields.

We invite investigators to contribute original research articles as well as review articles that will stimulate the applications of group theoretical approach in mathematics, physics, and chemical physics. We are particularly interested in papers that discuss the application of group theory in quantum few-body systems, as well as coordinate transformations and kinetic energy operators in atomic and molecular physics. Potential topics include, but are not limited to:

- Overview of the group investigation on the quantum few-body problems
- Analytical studies of coordinates and kinetic energy operators in atomic and molecular physics
- Group theory in studies of the electronic excited states of finite particle system
- Algebraic method and its application to solvable system
- Symmetry transformations and symmetry breaking and the related physical effects in finite quantum systems
- Compact and noncompact groups and their applications to nuclear physics
- Symmetry reduction, exact solutions, and conservation laws in integration and differential equations

Before submission authors should carefully read over the journal's Author Guidelines, which are located at

<http://www.hindawi.com/journals/amp/guidelines/>. Prospective authors should submit an electronic copy of their complete manuscript through the journal Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/amp/sgt/> according to the following timetable:

Manuscript Due	Friday, 25 April 2014
First Round of Reviews	Friday, 18 July 2014
Publication Date	Friday, 12 September 2014

Lead Guest Editor

Xiao-Yan Gu, Department of Physics, East China University of Science and Technology, Shanghai, China; xygu@ecust.edu.cn

Guest Editors

Fabien Gatti, CTMM, Institut Charles Gerhardt, UMR 5253, Université Montpellier II, Place Eugene Bataillon, 34095 Montpellier, France; fabien.gatti@univ-montp2.fr

Shi-Hai Dong, Departamento de Fisica, Escuela Superior de Fisica y Matematicas, Instituto Politecnico Nacional, Edificio 9, Unidad Profesional Adolfo Lopez Mateos, 07738 Mexico, DF, Mexico; dongsh2@yahoo.com

Jian-Qiang Sun, Institute of Information Science and Technology, Hainan University, Department of Mathematics, Haikou 570228, China; [sunjq123@qq.com](mailto:sunj123@qq.com)