Mathematical Modelling in Relativity and Quantum Theory

Guest Editor:

Prof. Dr. Michael M. Tung
Doctor of Physics, Doctor of Mathematics, Instituto de Matemática Multidisciplinar, Universitat Politècnica de València, 46022 Valencia, Spain

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Message from the Guest Editor

Dear Colleagues,

Nowadays, mathematical modelling is an indispensable tool for the successful description and simulation of systems in natural sciences and engineering. Within the field of theoretical physics, applications of relativity and quantum theory are at the forefront of active research and can also be combined with applied mathematics. Numerical relativity, which includes dealing with gravitational wave simulation, and quantum field theory, which describes higher order perturbative corrections of interacting particles, are utilized in specific mathematical models of ongoing and outstanding importance. Moreover, models for global positioning systems with their engineering challenges, or simulations of elementary mechanical devices in strong gravitational fields that display unprecedented phenomena, are intriguing physical systems to model.

This Special Issue welcomes contributions on applications of relativity and quantum theory, aiming at the description and simulation of interesting physical systems in both realms.

Special Issue

Editor-in-Chief

Prof. Dr. Francisco Chiclana
School of Computer Science and
Informatics, De Montfort
University, The Gateway,
Leicester LE1 9BH, UK

Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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